J-REIT リターンと資金流入の関係
—VAR（Vector Auto-regression）モデルによる分析—
別冊：各検定の詳細

Appendix1　レベルデータの単位根検定
（1）為替レート（円/ドル）
①ADF 検定（トレンド無）
為替レート（円/ドル）レベルデータ: ADF検定（トレンド無）

Null Hypothesis: USDJPY_L has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.936891	0.7727
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(USDJPY_L)
Method: Least Squares
Date: 02/26/14　Time: 13:41
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
USDJPY_L(-1)	-0.016905	0.018043	-0.936891	0.3511
C	1.616119	1.793239	0.901229	0.3697

R-squared	0.008788	Mean dependent var	-0.0454
Adjusted R-squared	-0.001224	S.D. dependent var	2.66584
S.E. of regression	2.667475	Akaike info criterion	4.81975
Sum squared resid	704.4266	Schwarz criterion	4.87153
Log likelihood	-241.3971	Hannan-Quinn criter.	4.84071
F-statistic	0.877764	Durbin-Watson stat	1.74273
Prob(F-statistic)	0.351095		

②ADF 検定（トレンド有）

為替レート（円/ドル）レベルデータ: ADF検定(トレンド有）

Null Hypothesis: USDJPY_L has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.142654	0.9159
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(USDJPY_L)
Method: Least Squares
Date: 02/26/14 Time: 13:42
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
USDJPY_L(-1)	-0.039583	0.034642	-1.142654	0.256
C	4.529383	4.199633	1.078519	0.2834
@TREND(2005M01)	-0.013415	0.017479	-0.767505	0.4446

R-squared	0.014711	Mean dependent var	-0.0454
Adjusted R-squared	-0.005397	S.D. dependent var	2.66584
S.E. of regression	2.673028	Akaike info criterion	4.83355
Sum squared resid	700.2177	Schwarz criterion	4.91123
Log likelihood	-241.0945	Hannan-Quinn criter.	4.865
F-statistic	0.731592	Durbin-Watson stat	1.71406
Prob(F-statistic)	0.483751		

③PP 検定（トレンド無）

為替レート（円/ドル）レベルデータ: PP検定（トレンド無）

Null Hypothesis: USDJPY_L has a unit root
Exogenous: Constant
Bandwidth: 3 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-1.053072	0.7317
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	6.97452
HAC corrected variance (Bartlett kernel)	8.95817

Phillips-Perron Test Equation
Dependent Variable: D(USDJPY_L)
Method: Least Squares
Date: 02/26/14 Time: 13:42
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
USDJPY_L(-1)	-0.016905	0.018043	-0.936891	0.3511
C	1.616119	1.793239	0.901229	0.3697

R-squared	0.008788	Mean dependent var	-0.0454
Adjusted R-squared	-0.001224	S.D. dependent var	2.66584
S.E. of regression	2.667475	Akaike info criterion	4.81975
Sum squared resid	704.4266	Schwarz criterion	4.87153
Log likelihood	-241.3971	Hannan-Quinn criter.	4.84071
F-statistic	0.877764	Durbin-Watson stat	1.74273
Prob(F-statistic)	0.351095		

① PP 検定（トレンド有）

為替レート（円/ドル）レベルデータ：PP検定（トレンド有）

Null Hypothesis: USDJPY_L has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 4 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-1.537257	0.8102
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	6.93285
HAC corrected variance (Bartlett kernel)	9.62168

Phillips-Perron Test Equation
Dependent Variable: D(USDJPY_L)
Method: Least Squares
Date: 02/26/14 Time: 13:43
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
USDJPY_L(-1)	-0.039583	0.034642	-1.142654	0.256
C	4.529383	4.199633	1.078519	0.2834
@TREND(2005M01)	-0.013415	0.017479	-0.767505	0.4446

R-squared	0.014711	Mean dependent var	-0.0454
Adjusted R-squared	-0.005397	S.D. dependent var	2.66584
S.E. of regression	2.673028	Akaike info criterion	4.83355
Sum squared resid	700.2177	Schwarz criterion	4.91123
Log likelihood	-241.0945	Hannan-Quinn criter.	4.865
F-statistic	0.731592	Durbin-Watson stat	1.71406
Prob(F-statistic)	0.483751		

（2）TOPIX（配当込）

①ADF 検定（トレンド無）

TOPIX（配当込）レベルデータ：ADF検定（トレンド無）

Null Hypothesis: TPXDDVD_L has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.340584	0.6082
Test critical values:	1% level	-3.497029	
	5% level	-2.890623	
	10% level	-2.582353	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TPXDDVD_L)
Method: Least Squares
Date: 02/26/14 Time: 13:45
Sample (adjusted): 2005M03 2013M06
Included observations: 100 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPXDDVD_L(-1)	-0.025899	0.019319	-1.340584	0.1832
D(TPXDDVD_L(-1))	0.312784	0.09639	3.244985	0.0016
C	36.59549	27.51577	1.329982	0.1866

R-squared	0.106451	Mean dependent var	1.6191
Adjusted R-squared	0.088027	S.D. dependent var	76.2924
S.E. of regression	72.85712	Akaike info criterion	11.4444
Sum squared resid	514891.5	Schwarz criterion	11.5226
Log likelihood	-569.2209	Hannan-Quinn criter.	11.4761
F-statistic	5.777914	Durbin-Watson stat	2.00955
Prob(F-statistic)	0.004258		

②ADF 検定（トレンド有）

TOPIX（配当込）レベルデータ：ADF検定(トレンド有）

Null Hypothesis: TPXDDVD_L has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.703241	0.7428
Test critical values:	1% level	-4.052411	
	5% level	-3.455376	
	10% level	-3.153438	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TPXDDVD_L)
Method: Least Squares
Date: 02/26/14 Time: 13:46
Sample (adjusted): 2005M03 2013M06
Included observations: 100 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPXDDVD_L(-1)	-0.046525	0.027316	-1.703241	0.0918
D(TPXDDVD_L(-1))	0.325677	0.097075	3.35489	0.0011
C	84.53877	52.66582	1.605192	0.1117
@TREND(2005M01)	-0.380954	0.356918	-1.07E+00	0.2885

R-squared	0.11693	Mean dependent var	1.6191
Adjusted R-squared	0.089334	S.D. dependent var	76.2924
S.E. of regression	72.80489	Akaike info criterion	11.4526
Sum squared resid	508853	Schwarz criterion	11.5568
Log likelihood	-568.6311	Hannan-Quinn criter.	11.4948
F-statistic	4.237212	Durbin-Watson stat	2.01851
Prob(F-statistic)	0.007387		

③PP 検定（トレンド無）

TOPIX（配当込）レベルデータ：PP検定（トレンド無）

Null Hypothesis: TPXDDVD_L has a unit root
Exogenous: Constant
Bandwidth: 6 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-1.358378	0.5997
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	5662.15
HAC corrected variance (Bartlett kernel)	10669

Phillips-Perron Test Equation
Dependent Variable: D(TPXDDVD_L)
Method: Least Squares
Date: 02/26/14 Time: 13:47
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPXDDVD_L(-1)	-0.019612	0.020044	-0.978457	0.3302
C	28.90327	28.55582	1.012167	0.3139

R-squared	0.009578	Mean dependent var	1.9603
Adjusted R-squared	-0.000426	S.D. dependent var	75.9873
S.E. of regression	76.00353	Akaike info criterion	11.519
Sum squared resid	571877.2	Schwarz criterion	11.5708
Log likelihood	-579.7115	Hannan-Quinn criter.	11.54
F-statistic	0.957378	Durbin-Watson stat	1.38511
Prob(F-statistic)	0.330233		

② PP 検定（トレンド有）

TOPIX（配当込）レベルデータ：PP検定（トレンド有）

Null Hypothesis: TPXDDVD_L has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 6 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-1.77268	0.7108
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	5632.76
HAC corrected variance (Bartlett kernel)	10723.4

Phillips-Perron Test Equation
Dependent Variable: D(TPXDDVD_L)
Method: Least Squares
Date: 02/26/14 Time: 13:47
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPXDDVD_L(-1)	-0.033256	0.027709	-1.200177	0.233
C	60.72451	52.91257	1.147639	0.2539
@TREND(2005M01)	-0.256424	0.358594	-0.715082	0.4763

R-squared	0.014719	Mean dependent var	1.9603
Adjusted R-squared	-0.005389	S.D. dependent var	75.9873
S.E. of regression	76.19181	Akaike info criterion	11.5336
Sum squared resid	568908.7	Schwarz criterion	11.6113
Log likelihood	-579.4487	Hannan-Quinn criter.	11.5651
F-statistic	0.731998	Durbin-Watson stat	1.37365
Prob(F-statistic)	0.483558		

（3）東証 REIT 指数（配当込）

①ADF 検定（トレンド無）

東証REIT指数（配当込）レベルデータ：ADF検定（トレンド無）

Null Hypothesis: TPXDREIT_L has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=10)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.693002	0.8408
Test critical values:	1% level	-3.534868	
	5% level	-2.906923	
	10% level	-2.591006	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TPXDREIT_L)
Method: Least Squares
Date: 02/26/14 Time: 13:48
Sample (adjusted): 2005M02 2010M06
Included observations: 65 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPXDREIT_L(-1)	-0.031319	0.045193	-0.693002	0.4909
C	52.8559	69.0628	0.765331	0.4469

R-squared	0.007565	Mean dependent var	6.10769
Adjusted R-squared	-0.008188	S.D. dependent var	118.865
S.E. of regression	119.3509	Akaike info criterion	12.4323
Sum squared resid	897412.1	Schwarz criterion	12.4992
Log likelihood	-402.0497	Hannan-Quinn criter.	12.4587
F-statistic	0.480251	Durbin-Watson stat	1.51531
Prob(F-statistic)	0.490855		

②ADF 検定（トレンド有）

東証REIT指数（配当込）レベルデータ：ADF検定(トレンド有）

Null Hypothesis: TPXDREIT_L has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on SIC, MAXLAG=10)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.797819	0.6945
Test critical values:	1% level	-4.105534	
	5% level	-3.480463	
	10% level	-3.168039	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TPXDREIT_L)
Method: Least Squares
Date: 02/26/14 Time: 13:49
Sample (adjusted): 2005M02 2010M06
Included observations: 65 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPXDREIT_L(-1)	-0.084671	0.047096	-1.797819	0.0771
C	57.35059	65.6945	0.872989	0.386
@TREND(2005M01)	2.277048	0.822277	2.769197	0.0074

R-squared	0.116803	Mean dependent var	6.10769
Adjusted R-squared	0.088313	S.D. dependent var	118.865
S.E. of regression	113.4953	Akaike info criterion	12.3465
Sum squared resid	798633.3	Schwarz criterion	12.4468
Log likelihood	-398.2598	Hannan-Quinn criter.	12.3861
F-statistic	4.099769	Durbin-Watson stat	1.61611
Prob(F-statistic)	0.021271		

③PP 検定（トレンド無）

東証REIT指数（配当込）レベルデータ:PP検定（トレンド無）

Null Hypothesis: TPXDREIT_L has a unit root
Exogenous: Constant
Bandwidth: 3 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-1.047677	0.7312
Test critical values:	1% level	-3.534868	
	5% level	-2.906923	
	10% level	-2.591006	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	13806.3
HAC corrected variance (Bartlett kernel)	18890.6

Phillips-Perron Test Equation
Dependent Variable: D(TPXDREIT_L)
Method: Least Squares
Date: 02/26/14 Time: 13:50
Sample (adjusted): 2005M02 2010M06
Included observations: 65 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPXDREIT_L(-1)	-0.031319	0.045193	-0.693002	0.4909
C	52.8559	69.0628	0.765331	0.4469

R-squared	0.007565	Mean dependent var	6.10769
Adjusted R-squared	-0.008188	S.D. dependent var	118.865
S.E. of regression	119.3509	Akaike info criterion	12.4323
Sum squared resid	897412.1	Schwarz criterion	12.4992
Log likelihood	-402.0497	Hannan-Quinn criter.	12.4587
F-statistic	0.480251	Durbin-Watson stat	1.51531
Prob(F-statistic)	0.490855		

④PP 検定（トレンド有）

東証REIT指数（配当込）レベルデータ：PP検定（トレンド有）

Null Hypothesis: TPXDREIT_L has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 0 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-1.797819	0.6945
Test critical values:	1% level	-4.105534	
	5% level	-3.480463	
	10% level	-3.168039	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	12286.7
HAC corrected variance (Bartlett kernel)	12286.7

Phillips-Perron Test Equation
Dependent Variable: D(TPXDREIT_L)
Method: Least Squares
Date: 02/26/14 Time: 13:50
Sample (adjusted): 2005M02 2010M06
Included observations: 65 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPXDREIT_L(-1)	-0.084671	0.047096	-1.797819	0.0771
C	57.35059	65.6945	0.872989	0.386
@TREND(2005M01)	2.277048	0.822277	2.769197	0.0074

R-squared	0.116803	Mean dependent var	6.10769
Adjusted R-squared	0.088313	S.D. dependent var	118.865
S.E. of regression	113.4953	Akaike info criterion	12.3465
Sum squared resid	798633.3	Schwarz criterion	12.4468
Log likelihood	-398.2598	Hannan-Quinn criter.	12.3861
F-statistic	4.099769	Durbin-Watson stat	1.61611
Prob(F-statistic)	0.021271		

Appendix2 共和分検定（為替レート円／ドル（変化率)、TOPIX（配当込）リターン東証 REIT 指数（配当込）リターンの 3 変数について）

（1）VECMに定数項無、Cointegration termにも定数項無、トレンド無

Date: 10/02/13 Time: 19:25
Sample (adjusted): 2005M03 2010M06
Included observations: 64 after adjustments
Trend assumption: No deterministic trend
Series: USDJPY_L TPXDDVD_L TPXDREIT_L
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Val	Prob.**
None	0.087869	6.796984	24.27596	0.9815
At most 1	0.012134	0.910764	12.3209	0.9972
At most 2	0.002021	0.129454	4.129906	0.7667

Trace test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Val	Prob.**
None	0.087869	5.88622	17.7973	0.9051
At most 1	0.012134	0.78131	11.2248	0.9972
At most 2	0.002021	0.129454	4.129906	0.7667

Max-eigenvalue test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

（2）VECMに定数項無、Cointegration termに定数項有、トレンド無

Date: 10/02/13 Time: 19:41
Sample (adjusted): 2005M03 2010M06
Included observations: 64 after adjustments
Trend assumption: No deterministic trend (restricted constant)
Series: USDJPY_L TPXDDVD_L TPXDREIT_L
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Val	Prob.**
None	0.265195	25.48043	35.19275	0.3716
At most 1	0.076723	5.758827	20.26184	0.9594
At most 2	0.010104	0.649956	9.164546	0.9864

Trace test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Val	Prob.**
None	0.265195	19.72161	22.29962	0.1102
At most 1	0.076723	5.108871	15.8921	0.8787
At most 2	0.010104	0.649956	9.164546	0.9864

Max-eigenvalue test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

(3) VECMに定数項有、Cointegration termに定数項無、トレンド無

Date: 10/02/13 Time: 19:51
Sample (adjusted): 2005M03 2010M06
Included observations: 64 after adjustments
Trend assumption: Linear deterministic trend
Series: USDJPY_L TPXDDVD_L TPXDREIT_L
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Val	Prob.**
None	0.264867	24.93891	29.79707	0.1636
At most 1	0.076216	5.245875	15.49471	0.7822
At most 2	0.002686	0.172152	3.841466	0.6782

Trace test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Val	Prob.**
None	0.264867	19.69303	21.13162	0.0785
At most 1	0.076216	5.073723	14.2646	0.7325
At most 2	0.002686	0.172152	3.841466	0.6782

Max-eigenvalue test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

（4）VECMに定数項無、Cointegration termに定数項有、トレンド有

Date: 10/02/13 Time: 19:54
Sample (adjusted): 2005M03 2010M06
Included observations: 64 after adjustments
Trend assumption: Linear deterministic trend (restricted)
Series: USDJPY_L TPXDDVD_L TPXDREIT_L
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Val	Prob.**
None	0.295288	39.52078	42.91525	0.105
At most 1	0.173406	17.12297	25.87211	0.4058
At most 2	0.074207	4.934725	12.51798	0.6058

Trace test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Val	Prob.**
None	0.295288	22.39781	25.82321	0.133
At most 1	0.173406	12.18825	19.38704	0.3979
At most 2	0.074207	4.934725	12.51798	0.6058

Max-eigenvalue test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Appendix3　差分（変化率）データの単位根検定

（1）為替レート（円/ドル）変化率

①ADF 検定（トレンド無）

為替レート（円/ドル）の変化率：ADF検定（トレンド無）

Null Hypothesis: USDJPY has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.857993	0
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(USDJPY)
Method: Least Squares
Date: 10/02/13　Time: 17:25
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
USDJPY(-1)	-0.884767	0.099883	-8.857993	0
C	-0.000426	0.002737	-0.155833	0.8765

R-squared	0.442141	Mean dependent var	-0.000257
Adjusted R-squared	0.436506	S.D. dependent var	0.036638
S.E. of regression	0.027503	Akaike info criterion	-4.32945
Sum squared resid	0.074884	Schwarz criterion	-4.277665
Log likelihood	220.6372	F-statistic	78.46405
Durbin-Watson stat	2.018094	Prob(F-statistic)	0

②ADF 検定（トレンド有）

為替レート（円/ドル）の変化率：ADF検定(トレンド有）

Null Hypothesis: USDJPY has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.834762	0
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(USDJPY)
Method: Least Squares
Date: 10/02/13 Time: 17:28
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
USDJPY(-1)	-0.887281	0.100431	-8.834762	0
C	-0.002649	0.005543	-0.477783	0.6339
@TREND(2005M01)	4.36E-05	9.44E-05	0.461536	0.6454

R-squared	0.44335	Mean dependent var	-0.000257
Adjusted R-squared	0.43199	S.D. dependent var	0.036638
S.E. of regression	0.027613	Akaike info criterion	-4.311819
Sum squared resid	0.074722	Schwarz criterion	-4.234142
Log likelihood	220.7469	F-statistic	39.02666
Durbin-Watson stat	2.017074	Prob(F-statistic)	0

③PP 検定（トレンド無）

為替レート（円/ドル）の変化率：PP検定（トレンド無）

Null Hypothesis: USDJPY has a unit root
Exogenous: Constant
Bandwidth: 3 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-8.897667	0
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.000741
HAC corrected variance (Bartlett kernel)	0.000789

Phillips-Perron Test Equation
Dependent Variable: D(USDJPY)
Method: Least Squares
Date: 10/02/13 Time: 17:28
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
USDJPY(-1)	-0.884767	0.099883	-8.857993	0
C	-0.000426	0.002737	-0.155833	0.8765

R-squared	0.442141	Mean dependent var	-0.000257
Adjusted R-squared	0.436506	S.D. dependent var	0.036638
S.E. of regression	0.027503	Akaike info criterion	-4.32945
Sum squared resid	0.074884	Schwarz criterion	-4.277665
Log likelihood	220.6372	F-statistic	78.46405
Durbin-Watson stat	2.018094	Prob(F-statistic)	0

④PP 検定（トレンド有）

為替レート（円/ドル）の変化率：PP検定（トレンド有）

Null Hypothesis: USDJPY has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 3 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-8.872969	0
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.00074
HAC corrected variance (Bartlett kernel)	0.000785

Phillips-Perron Test Equation
Dependent Variable: D(USDJPY)
Method: Least Squares
Date: 10/02/13 Time: 17:29
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
USDJPY(-1)	-0.887281	0.100431	-8.834762	0
C	-0.002649	0.005543	-0.477783	0.6339
@TREND(2005M01)	4.36E-05	9.44E-05	0.461536	0.6454

R-squared	0.44335	Mean dependent var	-0.000257
Adjusted R-squared	0.43199	S.D. dependent var	0.036638
S.E. of regression	0.027613	Akaike info criterion	-4.311819
Sum squared resid	0.074722	Schwarz criterion	-4.234142
Log likelihood	220.7469	F-statistic	39.02666
Durbin-Watson stat	2.017074	Prob(F-statistic)	0

（2）TOPIX（配当込）リターン

①ADF 検定（トレンド無）

TOPIX配当込リターン：ADF検定（トレンド無）

Null Hypothesis: TPXDDVD has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.3433	0
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TPXDDVD)
Method: Least Squares
Date: 10/02/13 Time: 17:30
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPXDDVD(-1)	-0.705214	0.096035	-7.3433	0
C	0.000991	0.005486	0.180629	0.857

R-squared	0.35262	Mean dependent var	2.87E-05
Adjusted R-squared	0.346081	S.D. dependent var	0.068156
S.E. of regression	0.055115	Akaike info criterion	-2.939196
Sum squared resid	0.300726	Schwarz criterion	-2.887411
Log likelihood	150.4294	F-statistic	53.92406
Durbin-Watson stat	1.983417	Prob(F-statistic)	0

②ADF 検定（トレンド有）

TOPIX配当込リターン：ADF検定(トレンド有）

Null Hypothesis: TPXDDVD has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.312651	0
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TPXDDVD)
Method: Least Squares
Date: 10/02/13 Time: 17:33
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPXDDVD(-1)	-0.706093	0.096558	-7.312651	0
C	-0.00141	0.011105	-0.126991	0.8992
@TREND(2005M01)	4.71E-05	0.000189	0.249062	0.8038

R-squared	0.353029	Mean dependent var	2.87E-05
Adjusted R-squared	0.339826	S.D. dependent var	0.068156
S.E. of regression	0.055378	Akaike info criterion	-2.920026
Sum squared resid	0.300536	Schwarz criterion	-2.84235
Log likelihood	150.4613	F-statistic	26.7376
Durbin-Watson stat	1.982963	Prob(F-statistic)	0

③PP 検定（トレンド無）

TOPIX配当込リターン：PP検定（トレンド無）

Null Hypothesis: TPXDDVD has a unit root
Exogenous: Constant
Bandwidth: 5 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-7.439643	0
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.002977
HAC corrected variance (Bartlett kernel)	0.003226

Phillips-Perron Test Equation
Dependent Variable: D(TPXDDVD)
Method: Least Squares
Date: 10/02/13 Time: 17:34
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPXDDVD(-1)	-0.705214	0.096035	-7.3433	0
C	0.000991	0.005486	0.180629	0.857

R-squared	0.35262	Mean dependent var	2.87E-05
Adjusted R-squared	0.346081	S.D. dependent var	0.068156
S.E. of regression	0.055115	Akaike info criterion	-2.939196
Sum squared resid	0.300726	Schwarz criterion	-2.887411
Log likelihood	150.4294	F-statistic	53.92406
Durbin-Watson stat	1.983417	Prob(F-statistic)	0

④PP 検定（トレンド有）

TOPIX配当込リターン：PP検定（トレンド有）

Null Hypothesis: TPXDDVD has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 5 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-7.408786	0
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.002976
HAC corrected variance (Bartlett kernel)	0.00322

Phillips-Perron Test Equation
Dependent Variable: D(TPXDDVD)
Method: Least Squares
Date: 10/02/13 Time: 17:34
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPXDDVD(-1)	-0.706093	0.096558	-7.312651	0
C	-0.00141	0.011105	-0.126991	0.8992
@TREND(2005M01)	4.71E-05	0.000189	0.249062	0.8038

R-squared	0.353029	Mean dependent var	2.87E-05
Adjusted R-squared	0.339826	S.D. dependent var	0.068156
S.E. of regression	0.055378	Akaike info criterion	-2.920026
Sum squared resid	0.300536	Schwarz criterion	-2.84235
Log likelihood	150.4613	F-statistic	26.7376
Durbin-Watson stat	1.982963	Prob(F-statistic)	0

（3）TOPIX（配当込）リターンの標準偏差

①ADF 検定（トレンド無）

TOPIX配当込リターンの標準偏差：ADF検定（トレンド無）

Null Hypothesis: STDEVTPX has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.303437	0
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(STDEVTPX)
Method: Least Squares
Date: 10/02/13 Time: 17:35
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
STDEVTPX(-1)	-0.450306	0.084908	-5.303437	0
C	0.00604	0.001265	4.773374	0

R-squared	0.221248	Mean dependent var	0.000191
Adjusted R-squared	0.213382	S.D. dependent var	0.007027
S.E. of regression	0.006233	Akaike info criterion	-7.298419
Sum squared resid	0.003846	Schwarz criterion	-7.246634
Log likelihood	370.5701	F-statistic	28.12644
Durbin-Watson stat	2.088423	Prob(F-statistic)	0.000001

②ADF 検定（トレンド有）

TOPIX配当込リターンの標準偏差：ADF検定(トレンド有）

Null Hypothesis: STDEVTPX has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.296886	0.0001
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(STDEVTPX)
Method: Least Squares
Date: 10/02/13 Time: 17:36
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
STDEVTPX(-1)	-0.452356	0.0854	-5.296886	0
C	0.005605	0.001634	3.429106	0.0009
@TREND(2005M01)	9.05E-06	2.14E-05	0.422912	0.6733

R-squared	0.222666	Mean dependent var	0.000191
Adjusted R-squared	0.206802	S.D. dependent var	0.007027
S.E. of regression	0.006259	Akaike info criterion	-7.28044
Sum squared resid	0.003839	Schwarz criterion	-7.202763
Log likelihood	370.6622	F-statistic	14.036
Durbin-Watson stat	2.087739	Prob(F-statistic)	0.000004

③PP 検定（トレンド無）

TOPIX配当込リターンの標準偏差：PP検定（トレンド無）

Null Hypothesis: STDEVTPX has a unit root
Exogenous: Constant
Bandwidth: 2 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-5.240326	0
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	3.81E-05
HAC corrected variance (Bartlett kernel)	3.66E-05

Phillips-Perron Test Equation
Dependent Variable: D(STDEVTPX)
Method: Least Squares
Date: 10/02/13 Time: 17:36
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
STDEVTPX(-1)	-0.450306	0.084908	-5.303437	0
C	0.00604	0.001265	4.773374	0

R-squared	0.221248	Mean dependent var	0.000191
Adjusted R-squared	0.213382	S.D. dependent var	0.007027
S.E. of regression	0.006233	Akaike info criterion	-7.298419
Sum squared resid	0.003846	Schwarz criterion	-7.246634
Log likelihood	370.5701	F-statistic	28.12644
Durbin-Watson stat	2.088423	Prob(F-statistic)	0.000001

④PP 検定（トレンド有）

TOPIX配当込リターンの標準偏差：PP検定（トレンド有）

Null Hypothesis: STDEVTPX has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 2 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-5.238592	0.0002
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	3.80E-05
HAC corrected variance (Bartlett kernel)	3.66E-05

Phillips-Perron Test Equation
Dependent Variable: D(STDEVTPX)
Method: Least Squares
Date: 10/02/13 Time: 17:37
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
STDEVTPX(-1)	-0.452356	0.0854	-5.296886	0
C	0.005605	0.001634	3.429106	0.0009
@TREND(2005M01)	9.05E-06	2.14E-05	0.422912	0.6733

R-squared	0.222666	Mean dependent var	0.000191
Adjusted R-squared	0.206802	S.D. dependent var	0.007027
S.E. of regression	0.006259	Akaike info criterion	-7.28044
Sum squared resid	0.003839	Schwarz criterion	-7.202763
Log likelihood	370.6622	F-statistic	14.036
Durbin-Watson stat	2.087739	Prob(F-statistic)	0.000004

（4）東証 REIT 指数（配当込）リターン

①ADF 検定（トレンド無）

東証REIT指数の配当込リターン：ADF検定（トレンド無）

Null Hypothesis: TPXDREIT has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.63048	0
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TPXDREIT)
Method: Least Squares
Date: 10/02/13 Time: 17:39
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPXDREIT(-1)	-0.741197	0.097136	-7.63048	0
C	0.002697	0.006356	0.424332	0.6722

R-squared	0.370326	Mean dependent var	0.000233
Adjusted R-squared	0.363966	S.D. dependent var	0.079989
S.E. of regression	0.063793	Akaike info criterion	-2.646758
Sum squared resid	0.402879	Schwarz criterion	-2.594973
Log likelihood	135.6613	F-statistic	58.22423
Durbin-Watson stat	1.997797	Prob(F-statistic)	0

②ADF 検定（トレンド有）

東証REIT指数の配当込リターン：ADF検定(トレンド有）

Null Hypothesis: TPXDREIT has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.628538	0
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TPXDREIT)
Method: Least Squares
Date: 10/02/13 Time: 17:39
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPXDREIT(-1)	-0.745315	0.097701	-7.628538	0
C	-0.003929	0.012841	-0.306023	0.7602
@TREND(2005M01)	0.00013	0.000219	0.594554	0.5535

R-squared	0.372589	Mean dependent var	0.000233
Adjusted R-squared	0.359785	S.D. dependent var	0.079989
S.E. of regression	0.064002	Akaike info criterion	-2.630556
Sum squared resid	0.401431	Schwarz criterion	-2.55288
Log likelihood	135.8431	F-statistic	29.09875
Durbin-Watson stat	1.996835	Prob(F-statistic)	0

③PP 検定（トレンド無）

東証REIT指数の配当込リターン：PP検定（トレンド無）

Null Hypothesis: TPXDREIT has a unit root
Exogenous: Constant
Bandwidth: 4 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-7.696545	0
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.003989
HAC corrected variance (Bartlett kernel)	0.004236

Phillips-Perron Test Equation
Dependent Variable: D(TPXDREIT)
Method: Least Squares
Date: 10/02/13 Time: 17:39
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPXDREIT(-1)	-0.741197	0.097136	-7.63048	0
C	0.002697	0.006356	0.424332	0.6722

R-squared	0.370326	Mean dependent var	0.000233
Adjusted R-squared	0.363966	S.D. dependent var	0.079989
S.E. of regression	0.063793	Akaike info criterion	-2.646758
Sum squared resid	0.402879	Schwarz criterion	-2.594973
Log likelihood	135.6613	F-statistic	58.22423
Durbin-Watson stat	1.997797	Prob(F-statistic)	0

④PP 検定（トレンド有）

東証REIT指数の配当込リターン：PP検定（トレンド有）

Null Hypothesis: TPXDREIT has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 4 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-7.684404	0
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.003975
HAC corrected variance (Bartlett kernel)	0.004183

Phillips-Perron Test Equation
Dependent Variable: D(TPXDREIT)
Method: Least Squares
Date: 10/02/13 Time: 17:40
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPXDREIT(-1)	-0.745315	0.097701	-7.628538	0
C	-0.003929	0.012841	-0.306023	0.7602
@TREND(2005M01)	0.00013	0.000219	0.594554	0.5535

R-squared	0.372589	Mean dependent var	0.000233
Adjusted R-squared	0.359785	S.D. dependent var	0.079989
S.E. of regression	0.064002	Akaike info criterion	-2.630556
Sum squared resid	0.401431	Schwarz criterion	-2.55288
Log likelihood	135.8431	F-statistic	29.09875
Durbin-Watson stat	1.996835	Prob(F-statistic)	0

(5)東証 REIT 指数（配当込）リターンの標準偏差
①ADF 検定（トレンド無）

東証REIT指数配当込リターンの標準偏差：ADF検定（トレンド無）

Null Hypothesis: STDEVREIT has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.49036	0.0004
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(STDEVREIT)
Method: Least Squares
Date: 10/02/13 Time: 17:42
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
STDEVREIT(-1)	-0.338489	0.075381	-4.49036	0
C	0.004753	0.001256	3.784591	0.0003

R-squared	0.169208	Mean dependent var	0.000191
Adjusted R-squared	0.160816	S.D. dependent var	0.0081
S.E. of regression	0.00742	Akaike info criterion	-6.949608
Sum squared resid	0.005451	Schwarz criterion	-6.897823
Log likelihood	352.9552	F-statistic	20.16333
Durbin-Watson stat	2.202216	Prob(F-statistic)	0.000019

②ADF 検定（トレンド有）

東証REIT指数配当込リターンの標準偏差：ADF検定(トレンド有)

Null Hypothesis: STDEVREIT has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.468416	0.0027
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(STDEVREIT)
Method: Least Squares
Date: 10/02/13 Time: 17:43
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
STDEVREIT(-1)	-0.338587	0.075773	-4.468416	0
C	0.004655	0.001799	2.588224	0.0111
@TREND(2005M01)	1.95E-06	2.55E-05	0.076726	0.939

R-squared	0.169257	Mean dependent var	0.000191
Adjusted R-squared	0.152303	S.D. dependent var	0.0081
S.E. of regression	0.007458	Akaike info criterion	-6.929866
Sum squared resid	0.005451	Schwarz criterion	-6.852189
Log likelihood	352.9582	F-statistic	9.983373
Durbin-Watson stat	2.202121	Prob(F-statistic)	0.000113

③PP 検定（トレンド無）

東証REIT指数配当込リターンの標準偏差：PP検定(トレンド無)

Null Hypothesis: STDEVREIT has a unit root
Exogenous: Constant
Bandwidth: 0 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-4.49036	0.0004
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	5.40E-05
HAC corrected variance (Bartlett kernel)	5.40E-05

Phillips-Perron Test Equation
Dependent Variable: D(STDEVREIT)
Method: Least Squares
Date: 10/02/13 Time: 17:44
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
STDEVREIT(-1)	-0.338489	0.075381	-4.49036	0
C	0.004753	0.001256	3.784591	0.0003

R-squared	0.169208	Mean dependent var	0.000191
Adjusted R-squared	0.160816	S.D. dependent var	0.0081
S.E. of regression	0.00742	Akaike info criterion	-6.949608
Sum squared resid	0.005451	Schwarz criterion	-6.897823
Log likelihood	352.9552	F-statistic	20.16333
Durbin-Watson stat	2.202216	Prob(F-statistic)	0.000019

④PP 検定（トレンド無）

東証REIT指数配当込リターンの標準偏差：PP検定（トレンド有）

Null Hypothesis: STDEVREIT has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 0 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-4.468416	0.0027
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	5.40E-05
HAC corrected variance (Bartlett kernel)	5.40E-05

Phillips-Perron Test Equation
Dependent Variable: D(STDEVREIT)
Method: Least Squares
Date: 10/02/13 Time: 17:44
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
STDEVREIT(-1)	-0.338587	0.075773	-4.468416	0
C	0.004655	0.001799	2.588224	0.0111
@TREND(2005M01)	1.95E-06	2.55E-05	0.076726	0.939

R-squared	0.169257	Mean dependent var	0.000191
Adjusted R-squared	0.152303	S.D. dependent var	0.0081
S.E. of regression	0.007458	Akaike info criterion	-6.929866
Sum squared resid	0.005451	Schwarz criterion	-6.852189
Log likelihood	352.9582	F-statistic	9.983373
Durbin-Watson stat	2.202121	Prob(F-statistic)	0.000113

（6）J-REIT ファンド資金純流入額の J-REIT 全銘柄時価総額比

①ADF 検定（トレンド無）

J-REITファンド資金純流入額のJ-REIT全銘柄時価総額比率：ADF検定（トレンド無）

Null Hypothesis: JREITFUNDINFLOW has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.966253	0.0023
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(JREITFUNDINFLOW)
Method: Least Squares
Date: 10/02/13 Time: 17:47
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
JREITFUNDINFLOW(-1)	-0.262445	0.066169	-3.966253	0.0001
C	0.001665	0.000829	2.009356	0.0472

R-squared	0.137113	Mean dependent var	-6.39E-05
Adjusted R-squared	0.128397	S.D. dependent var	0.007588
S.E. of regression	0.007084	Akaike info criterion	-7.042406
Sum squared resid	0.004968	Schwarz criterion	-6.990622
Log likelihood	357.6415	F-statistic	15.73116
Durbin-Watson stat	1.860892	Prob(F-statistic)	0.000138

②ADF 検定（トレンド有）

J-REITファンド資金純流入額のJ-REIT全銘柄時価総額比率：ADF検定(トレンド有)

Null Hypothesis: JREITFUNDINFLOW has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.907388	0.0152
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(JREITFUNDINFLOW)
Method: Least Squares
Date: 10/02/13 Time: 17:47
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
JREITFUNDINFLOW(-1)	-0.259576	0.066432	-3.907388	0.0002
C	0.000727	0.001512	0.480778	0.6317
@TREND(2005M01)	1.80E-05	2.43E-05	0.74283	0.4594

R-squared	0.141945	Mean dependent var	-6.39E-05
Adjusted R-squared	0.124433	S.D. dependent var	0.007588
S.E. of regression	0.0071	Akaike info criterion	-7.028219
Sum squared resid	0.00494	Schwarz criterion	-6.950542
Log likelihood	357.9251	F-statistic	8.10587
Durbin-Watson stat	1.876352	Prob(F-statistic)	0.000552

③PP 検定（トレンド無）

J-REITファンド資金純流入額のJ-REIT全銘柄時価総額比率：PP検定（トレンド無）

Null Hypothesis: JREITFUNDINFLOW has a unit root
Exogenous: Constant
Bandwidth: 3 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-3.687764	0.0057
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	4.92E-05
HAC corrected variance (Bartlett kernel)	3.91E-05

Phillips-Perron Test Equation
Dependent Variable: D(JREITFUNDINFLOW)
Method: Least Squares
Date: 10/02/13 Time: 17:47
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
JREITFUNDINFLOW(-1)	-0.262445	0.066169	-3.966253	0.0001
C	0.001665	0.000829	2.009356	0.0472

R-squared	0.137113	Mean dependent var	-6.39E-05
Adjusted R-squared	0.128397	S.D. dependent var	0.007588
S.E. of regression	0.007084	Akaike info criterion	-7.042406
Sum squared resid	0.004968	Schwarz criterion	-6.990622
Log likelihood	357.6415	F-statistic	15.73116
Durbin-Watson stat	1.860892	Prob(F-statistic)	0.000138

④PP 検定（トレンド有）

J-REITファンド資金純流入額のJ-REIT全銘柄時価総額比率：PP検定（トレンド有）

Null Hypothesis: JREITFUNDINFLOW has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 4 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-3.544127	0.0401
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	4.89E-05
HAC corrected variance (Bartlett kernel)	3.62E-05

Phillips-Perron Test Equation
Dependent Variable: D(JREITFUNDINFLOW)
Method: Least Squares
Date: 10/02/13　Time: 17:48
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
JREITFUNDINFLOW(-1)	-0.259576	0.066432	-3.907388	0.0002
C	0.000727	0.001512	0.480778	0.6317
@TREND(2005M01)	1.80E-05	2.43E-05	0.74283	0.4594

R-squared	0.141945	Mean dependent var	-6.39E-05
Adjusted R-squared	0.124433	S.D. dependent var	0.007588
S.E. of regression	0.0071	Akaike info criterion	-7.028219
Sum squared resid	0.00494	Schwarz criterion	-6.950542
Log likelihood	357.9251	F-statistic	8.10587
Durbin-Watson stat	1.876352	Prob(F-statistic)	0.000552

（7）J-REIT 外国人投資家の純買越額の J-REIT 全銘柄時価総額比率

①ADF 検定（トレンド無）

外国人投資家の純買越額のJ-REIT全銘柄時価総額比率：ADF検定（トレンド無）

Null Hypothesis: FOREIGNINVESTORS has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.018836	0
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FOREIGNINVESTORS)
Method: Least Squares
Date: 10/02/13 Time: 17:49
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FOREIGNINVESTORS(-1)	-0.541457	0.08996	-6.018836	0
C	0.000902	0.000475	1.899467	0.0604

R-squared	0.267894	Mean dependent var	-4.39E-05
Adjusted R-squared	0.260499	S.D. dependent var	0.005238
S.E. of regression	0.004505	Akaike info criterion	-7.947867
Sum squared resid	0.002009	Schwarz criterion	-7.896082
Log likelihood	403.3673	F-statistic	36.22639
Durbin-Watson stat	2.050534	Prob(F-statistic)	0

②ADF 検定（トレンド有）

外国人投資家の純買越額のJ-REIT全銘柄時価総額比率：ADF検定(トレンド有）

Null Hypothesis: FOREIGNINVESTORS has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.493761	0
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FOREIGNINVESTORS)
Method: Least Squares
Date: 10/02/13 Time: 17:50
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FOREIGNINVESTORS(-1)	-0.600467	0.092468	-6.493761	0
C	0.002746	0.000973	2.822888	0.0058
@TREND(2005M01)	-3.41E-05	1.58E-05	-2.159897	0.0332

R-squared	0.301162	Mean dependent var	-4.39E-05
Adjusted R-squared	0.2869	S.D. dependent var	0.005238
S.E. of regression	0.004423	Akaike info criterion	-7.97457
Sum squared resid	0.001918	Schwarz criterion	-7.896893
Log likelihood	405.7158	F-statistic	21.11635
Durbin-Watson stat	2.021631	Prob(F-statistic)	0

③PP 検定（トレンド無）

外国人投資家の純買越額のJ-REIT全銘柄時価総額比率：PP検定（トレンド無）

Null Hypothesis: FOREIGNINVESTORS has a unit root
Exogenous: Constant
Bandwidth: 4 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-6.078532	0
Test critical values:	1% level	-3.496346	
	5% level	-2.890327	
	10% level	-2.582196	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	1.99E-05
HAC corrected variance (Bartlett kernel)	2.07E-05

Phillips-Perron Test Equation
Dependent Variable: D(FOREIGNINVESTORS)
Method: Least Squares
Date: 10/02/13 Time: 17:50
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FOREIGNINVESTORS(-1)	-0.541457	0.08996	-6.018836	0
C	0.000902	0.000475	1.899467	0.0604

R-squared	0.267894	Mean dependent var	-4.39E-05
Adjusted R-squared	0.260499	S.D. dependent var	0.005238
S.E. of regression	0.004505	Akaike info criterion	-7.947867
Sum squared resid	0.002009	Schwarz criterion	-7.896082
Log likelihood	403.3673	F-statistic	36.22639
Durbin-Watson stat	2.050534	Prob(F-statistic)	0

④PP 検定（トレンド有）

外国人投資家の純買越額のJ-REIT全銘柄時価総額比率：PP検定（トレンド有）

Null Hypothesis: FOREIGNINVESTORS has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 2 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-6.47165	0
Test critical values:	1% level	-4.05145	
	5% level	-3.454919	
	10% level	-3.153171	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	1.90E-05
HAC corrected variance (Bartlett kernel)	1.87E-05

Phillips-Perron Test Equation
Dependent Variable: D(FOREIGNINVESTORS)
Method: Least Squares
Date: 10/02/13　Time: 17:53
Sample (adjusted): 2005M02 2013M06
Included observations: 101 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FOREIGNINVESTORS(-1)	-0.600467	0.092468	-6.493761	0
C	0.002746	0.000973	2.822888	0.0058
@TREND(2005M01)	-3.41E-05	1.58E-05	-2.159897	0.0332

R-squared	0.301162	Mean dependent var	-4.39E-05
Adjusted R-squared	0.2869	S.D. dependent var	0.005238
S.E. of regression	0.004423	Akaike info criterion	-7.97457
Sum squared resid	0.001918	Schwarz criterion	-7.896893
Log likelihood	405.7158	F-statistic	21.11635
Durbin-Watson stat	2.021631	Prob(F-statistic)	0