ADF test on first di	fference of the tre	nd term of X12-AR	IMAmodel
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.36533471	5.03E-04
Test critical values:	1% level	-3.4739667	
	5% level	-2.88059133	
	10% level	-2.57700757	
ADF test on first dif	ference of the seas	on term of X12-AF	RIMA model
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-9.23751331	1.29E-13
Test critical values:	1% level	-3.47647186	
	5% level	-2.88168458	
	10% level	-2.57759089	
ADF test on first di	fference of the orig	ginal series of SAR	IMA model
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.89703647	6.61E-05
Test critical values:	1% level	-3.47647186	
	5% level	-2.88168458	

-2.57759089

Supplementary Figure. S1. Results of ADF tests in two models.

10% level

	Correlogram of Y_SF					
Date: 08/30/18 Time Sample: 2004M01 20 Included observation	016M12					
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		17 18	-0.279 -0.350 -0.411 -0.361 -0.308 -0.143 0.168 0.282 0.916 0.303 0.191 -0.098 -0.256 -0.318 -0.367	-0.171 -0.243 -0.249 -0.310	18.667 26.325 27.949 40.543 60.563 88.378 109.96 125.81 129.25 134.03 307.01 313.07 315.05 326.60 344.57 387.09 400.69 400.69 403.55 408.88	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

a. The ACF graph and PACF graph of the trend term series in X12-ARIMA model.

Correlogram of Y_TC Date: 08/31/18 Time: 00:29 Sample: 2004M01 2016M12 Included observations: 156 Autocorrelation Partial Correlation AC Prob 0.985 0.985 154.31 0.000 L in 0.966 -0.149303.65 0.000 3 0.944 -0.099 447.12 0.000 0.919 -0.054 584.22 0.000 0.894 -0.021 714.78 0.000 6 0.869 -0.009 0.000 838.84 0.843 956.53 -0.006 0.000 0.818 -0.003 0.794 0.010 1173.8 0.000 10 0.771 11 0.750 0.000 0.031 1274.2 0.000 0.039 1369.9 12 0.731 0.030 1461.5 13 0.714 0.006 1549.3 0.000 14 15 0.697 -0.022 0.679 -0.048 1633.5 1714.0 0.000 0.000 16 0.659 -0.061 1790.5 0.000 17 0.638 -0.050 1862.7 0.616 -0.022 0.594 0.005 0.000 18 1930.5 19 1994.1 20 0.573 0.021 2053.5 0.000 21 0.552 0.022 22 0.532 0.013 23 0.513 0.006 2109.2 0.000 2161.3 0.000 2210.1 0.000

b. The ACF graph and PACF graph of the season term series in X12-ARIMA model.

Date: 08/31/18 Time Sample: 2004M01 2 Included observation	016M12					
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
- 		1	0.702	0.702	78.457	0.000
ı		2	0.647	0.302	145.36	0.000
ı <u>— — — — — — — — — — — — — — — — — — —</u>	'[['	3	0.514	-0.033	187.95	0.000
· 🗀	' '	4		-0.023	217.87	0.000
' 🔚	' -	5	0.402	0.109	244.25	0.000
· 📜	'B''	6	0.361	0.047	265.67	0.000
' 🔤	' '	7	0.361	0.070	287.28	0.000
' 🔤	' <u> </u> '	8	0.365	0.083	309.46	0.000
· -	'	9	0.418	0.171	338.74	0.000
' -	' 	10	0.514	0.265	383.36	0.000
'	' P'	11	0.535	0.087	432.03	0.000
1	'	12	0.786	0.621	537.86	0.000
'	I I	13		-0.644	586.69	0.000
'	' [] '	14		-0.079	629.68	0.000
' 🔚	'[['	15		-0.027	654.65	0.000
' 🔚	' '	16	0.305	0.011	670.98	0.000
' =	<u>""</u> '	17		-0.111	684.08	0.000
' 📃	' 	18	0.243	0.160	694.64	0.000
' =	']'	19	0.242	0.020	705.22	0.000
' ■	'@'	20		-0.083	715.54	0.000
' 🖳	' <u> </u>	21	0.292	0.078	731.08	0.000
' =	' '	22	0.385	0.103	758.34	0.000
·	' '	23	0.405	0.020	788.74	0.000

Correlogram of Y

c. The ACF graph and PACF graph of the original series in SARIMA model.

Supplementary Figure. S2. The ACF and PACF graphs of two models.

Abbreviations: ACF, autocorrelation function; PACF, partial autocorrelation function.