

表 A1	6 类匹配模型下的链式价格指数						(%)
指数的价格 比较期	Jevons	拉氏	帕氏	Törnqvist	CES	Fisher	
2016.1(t0)	100.00	100.00	100.00	100.00	100.00	100.00	
2016.2/t0	98.85	100.05	99.91	99.99	100.01	99.98	
2016.3/t0	96.15	98.00	97.45	97.74	97.75	97.72	
2016.4/t0	93.17	97.32	96.55	96.95	96.96	96.93	
2016.5/t0	89.40	97.55	96.23	96.93	96.90	96.89	
2016.6/t0	84.56	95.00	94.04	94.59	94.52	94.52	
2016.7/t0	83.35	94.77	92.23	93.60	93.48	93.49	
2016.8/t0	80.62	92.57	89.46	91.06	91.00	91.00	
2016.9/t0	78.18	89.59	85.91	87.80	87.72	87.73	
2016.10/t0	76.49	87.84	84.02	85.99	85.90	85.91	
2016.11/t0	73.90	84.92	80.80	82.92	82.82	82.83	
2016.12/t0	73.25	83.55	78.79	81.14	81.15	81.13	
2017.1/t0	72.11	84.08	78.48	81.22	81.26	81.23	
2017.2/t0	71.39	85.34	79.49	82.34	82.39	82.36	
2017.3/t0	69.36	82.62	76.34	79.40	80.55	79.42	
2017.4/t0	66.06	77.55	70.26	73.81	74.72	73.82	
2017.5/t0	64.83	77.68	69.80	73.62	74.56	73.64	
2017.6/t0	61.91	75.15	66.80	70.84	71.74	70.85	
2017.7/t0	61.48	76.14	66.34	71.05	71.96	71.07	
2017.8/t0	59.97	74.73	64.38	69.36	70.23	69.36	
2017.9/t0	59.52	74.28	63.63	68.75	69.61	68.75	
2017.10/t0	59.52	73.62	62.93	68.06	68.91	68.06	
2017.11/t0	56.82	70.67	58.34	64.24	65.00	64.21	
2017.12/t0	56.19	70.90	57.27	63.75	64.50	63.72	
2018.1/t0	54.62	69.19	54.73	61.72	62.15	61.54	
2018.2/t0	54.06	69.06	54.11	61.31	61.75	61.13	
2018.3/t0	53.77	68.27	53.00	60.32	60.76	60.15	
2018.4/t0	52.67	67.09	46.29	56.44	56.09	55.73	

表 A2	5 类个体交易量指数不同波动范围下的链式价格指数						(%)
指数的价格 比较期	[0,∞)	[0.1,10]	[0.2,5]	[0.5,2]	[0.8,1.25]		
2016.1(t0)	100.00	100.00	100.00	100.00	100.00	100.00	
2016.2/t0	99.99	99.99	99.99	100.03	99.76	99.76	
2016.3/t0	97.74	97.76	97.96	98.01	97.66	97.66	
2016.4/t0	96.95	96.96	97.34	97.46	96.13	96.13	
2016.5/t0	96.93	96.98	97.35	97.58	95.70	95.70	
2016.6/t0	94.59	94.47	94.79	95.11	93.78	93.78	
2016.7/t0	93.60	93.41	93.68	93.11	89.32	89.32	
2016.8/t0	91.06	90.89	91.65	91.30	89.15	89.15	

2016.9/t0	87.80	87.70	88.39	87.97	86.38
2016.10/t0	85.99	85.87	86.74	86.35	85.44
2016.11/t0	82.92	83.13	83.99	83.34	82.44
2016.12/t0	81.14	80.93	81.69	81.61	79.69
2017.1/t0	81.22	80.94	81.61	81.04	78.35
2017.2/t0	82.34	82.14	82.90	82.17	79.24
2017.3/t0	79.40	79.36	80.01	80.25	77.55
2017.4/t0	73.81	73.66	74.20	73.64	70.85
2017.5/t0	73.62	73.47	74.04	73.11	70.51
2017.6/t0	70.84	70.67	71.27	70.94	69.91
2017.7/t0	71.05	70.78	71.21	69.78	67.59
2017.8/t0	69.36	69.02	69.40	68.28	66.40
2017.9/t0	68.75	68.40	68.82	67.52	65.50
2017.10/t0	68.06	67.97	68.35	67.08	65.01
2017.11/t0	64.24	64.50	65.18	65.35	63.09
2017.12/t0	63.75	60.73	64.20	63.81	61.15
2018.1/t0	61.72	58.85	62.55	62.27	59.59
2018.2/t0	61.31	58.35	61.99	61.51	58.89
2018.3/t0	60.32	57.39	61.01	60.56	58.11
2018.4/t0	56.44	55.85	59.64	59.14	56.90

表 A3 7 类个体价格指数不同波动范围下的链式价格指数 (%)

指数的价格 比较期	[0,∞)	[0.4,1.6]	[0.5,1.5]	[0.6,1.4]	[0.7,1.3]	[0.8,1.2]	[0.9,1.1]
2016.1(t0)	100.00	100.00	100.00	100.00	100.00	100.00	100.00
2016.2/t0	99.99	99.99	99.99	99.99	99.98	100.02	100.07
2016.3/t0	97.74	97.74	97.74	97.74	97.74	97.81	98.24
2016.4/t0	96.95	96.95	96.95	96.95	96.95	97.04	97.67
2016.5/t0	96.93	96.93	96.93	96.93	96.99	97.18	97.67
2016.6/t0	94.59	94.42	94.34	94.35	94.42	94.69	95.41
2016.7/t0	93.60	93.34	93.24	93.24	93.31	93.63	94.84
2016.8/t0	91.06	90.80	90.90	90.90	91.09	91.34	92.90
2016.9/t0	87.80	87.53	87.63	87.62	87.83	88.32	90.49
2016.10/t0	85.99	85.72	85.82	85.82	86.02	86.72	89.06
2016.11/t0	82.92	82.67	82.77	82.77	82.96	83.64	86.76
2016.12/t0	81.14	80.86	80.96	80.95	81.62	82.36	85.93
2017.1/t0	81.22	80.94	80.90	80.88	81.43	81.89	85.14
2017.2/t0	82.34	82.04	82.00	81.85	82.41	82.90	86.02
2017.3/t0	79.40	79.03	78.99	78.86	79.63	80.48	84.33
2017.4/t0	73.81	73.47	74.00	76.08	77.55	78.17	82.77
2017.5/t0	73.62	73.25	73.78	75.85	77.31	77.97	82.25
2017.6/t0	70.84	70.48	70.99	72.99	74.39	75.05	79.60
2017.7/t0	71.05	70.69	71.20	73.20	74.61	75.34	79.88
2017.8/t0	69.36	68.99	69.49	71.44	73.03	73.59	78.20

2017.9/t0	68.75	68.38	68.88	70.82	72.36	72.91	77.62
2017.10/t0	68.06	67.69	68.18	70.10	71.63	72.08	76.97
2017.11/t0	64.24	63.90	64.36	66.17	67.64	68.40	74.67
2017.12/t0	63.75	63.40	63.86	65.66	67.19	68.09	74.08
2018.1/t0	61.72	61.71	62.17	63.93	65.43	66.34	72.52
2018.2/t0	61.31	61.27	61.73	63.48	64.97	65.86	72.18
2018.3/t0	60.32	60.28	60.74	62.46	63.94	64.83	71.17
2018.4/t0	56.44	56.40	56.83	59.77	62.04	63.60	69.86

表 A4 2016 年 1 月—2018 年 4 月间相邻月份个体环比价格指数变化范围统计

指数的价格 比较期	匹配项目个体价格指数 大于“1”的手机项目		匹配项目个体价格指数 小于“1”的手机项目		相邻月份匹配下的 手机项目数量（部）
	项目数量（部）	项目数占比（%）	项目数量（部）	项目数占比（%）	
2016.2/2016.1	89	45.64	106	54.36	195
2016.3/2016.2	62	29.25	150	70.76	212
2016.4/2016.3	67	26.80	183	73.20	250
2016.5/2016.4	84	30.22	194	69.78	278
2016.6/2016.5	59	19.03	251	80.97	310
2016.7/2016.6	118	30.89	264	69.11	382
2016.8/2016.7	125	29.62	297	70.38	422
2016.9/2016.8	142	30.09	330	69.92	472
2016.10/2016.9	163	29.91	382	70.09	545
2016.11/2016.10	163	26.42	454	73.58	617
2016.12/2016.11	317	44.09	402	55.91	719
2017.1/2016.12	297	37.69	491	62.31	788
2017.2/2017.1	416	53.20	366	46.80	782
2017.3/2017.2	272	34.78	510	65.22	782
2017.4/2017.3	276	34.54	523	65.46	799
2017.5/2017.4	327	41.87	454	58.13	781
2017.6/2017.5	191	23.73	614	76.27	805
2017.7/2017.6	384	45.99	451	54.01	835
2017.8/2017.7	294	34.23	565	65.77	859
2017.9/2017.8	422	48.73	444	51.27	866
2017.10/2017.9	314	33.23	631	66.77	945
2017.11/2017.10	229	24.47	707	75.53	936
2017.12/2017.11	440	44.67	545	55.33	985
2018.1/2017.12	331	29.50	791	70.50	1122
2018.2/2018.1	411	37.78	677	62.22	1088
2018.3/2018.2	568	54.99	465	45.02	1033
2018.4/2018.3	375	38.27	605	61.74	980

注：个体环比价格指数保留 6 位小数进行统计。

根据上表可知，匹配模型下，各期个体环比价格指数小于 1 的手机项目数，明显高于环比价格指数大于 1 的手机项目数量。

表 A5 手机项目个体环比价格指数 p_i^t / p_i^{t-1} 及其对 Törnqvist 环比价格指数的相关作用

手机项目序号 (n)	p_i^t / p_i^{t-1} (从小到大顺序排列)	$(s_i^{t-1} + s_i^t) / 2$	$(p_i^t / p_i^{t-1})^{[(s_i^{t-1} + s_i^t) / 2]}$	Törnqvist (前一 列该行及前面各 行数据连乘的结 果)	Törnqvist (n) - Törnqvist(n-1) (前 一行该值与上 一行值的差)
1	0.66747994	0.00000073	0.99999970	0.99999970	——
2	0.77532613	0.00051159	0.99986982	0.99986953	-0.00013018
3	0.78015625	0.00047632	0.99988175	0.99975130	-0.00011823
4	0.78162496	0.00000047	0.99999989	0.99975118	-0.00000011
5	0.78696464	0.00001344	0.99999678	0.99974796	-0.00000322
6	0.78723138	0.00009567	0.99997711	0.99972508	-0.00002288
7	0.79810210	0.00004746	0.99998930	0.99971438	-0.00001070
8	0.79811939	0.00041403	0.99990664	0.99962105	-0.00009333
9	0.82744734	0.00130558	0.99975274	0.99937389	-0.00024717
10	0.83048558	0.00000139	0.99999974	0.99937363	-0.00000026
11	0.83156868	0.00040400	0.99992549	0.99929916	-0.00007446
12	0.83501303	0.00001909	0.99999656	0.99929572	-0.00000344
13	0.83572161	0.00012355	0.99997783	0.99927357	-0.00002216
14	0.84254122	0.00002687	0.99999540	0.99926897	-0.00000460
15	0.85208797	0.00001394	0.99999777	0.99926674	-0.00000223
16	0.85357186	0.00050266	0.99992042	0.99918721	-0.00007952
17	0.86613182	0.00125055	0.99982029	0.99900765	-0.00017956
18	0.87576087	0.00004101	0.99999456	0.99900222	-0.00000543
19	0.88133591	0.01137016	0.99856479	0.99756844	-0.00143378
20	0.88158314	0.00019750	0.99997511	0.99754361	-0.00002483
21	0.88189832	0.00026111	0.99996718	0.99751087	-0.00003274
22	0.88420743	0.00038720	0.99995235	0.99746334	-0.00004753
23	0.88508339	0.00091089	0.99988881	0.99735244	-0.00011091
24	0.88752538	0.00015658	0.99998132	0.99733380	-0.00001863
25	0.88915666	0.00034852	0.99995906	0.99729297	-0.00004083
26	0.88972920	0.00052207	0.99993900	0.99723214	-0.00006083
27	0.89034654	0.00004412	0.99999488	0.99722703	-0.00000511
28	0.89198722	0.00000894	0.99999898	0.99722601	-0.00000102
29	0.89616775	0.00002446	0.99999732	0.99722333	-0.00000267
30	0.90001777	0.00256756	0.99972957	0.99695365	-0.00026968
31	0.90249709	0.00037098	0.99996194	0.99691571	-0.00003794
32	0.90354215	0.00002811	0.99999715	0.99691287	-0.00000284
33	0.90462840	0.00011965	0.99998801	0.99690091	-0.00001196
34	0.90538032	0.00010809	0.99998926	0.99689020	-0.00001071
35	0.90567008	0.00014566	0.99998557	0.99687581	-0.00001439
36	0.90624102	0.00048759	0.99995200	0.99682796	-0.00004785
37	0.90689018	0.00046482	0.99995457	0.99678268	-0.00004528
38	0.90743272	0.00010966	0.99998935	0.99677206	-0.00001062

39	0.90814115	0.00290202	0.99972041	0.99649338	-0.00027868
40	0.90874566	0.00000595	0.99999943	0.99649281	-0.00000057
41	0.90907505	0.00005542	0.99999472	0.99648754	-0.00000526
42	0.91081283	0.00113769	0.99989373	0.99638164	-0.00010590
43	0.91122974	0.00010482	0.99999026	0.99637193	-0.00000971
44	0.91198635	0.00068541	0.99993686	0.99630902	-0.00006292
45	0.91397906	0.00048792	0.99995611	0.99626529	-0.00004372
46	0.91406950	0.00002367	0.99999787	0.99626318	-0.00000212
47	0.91818809	0.00042561	0.99996367	0.99622698	-0.00003619
48	0.91943869	0.00005478	0.99999540	0.99622240	-0.00000458
49	0.92310311	0.00001526	0.99999878	0.99622119	-0.00000122
50	0.92373413	0.00003001	0.99999762	0.99621881	-0.00000237
51	0.92508625	0.00016050	0.99998750	0.99620636	-0.00001245
52	0.92558958	0.00021799	0.99998314	0.99618957	-0.00001679
53	0.92615214	0.00208805	0.99983982	0.99603001	-0.00015957
54	0.92662297	0.00011806	0.99999100	0.99602105	-0.00000896
55	0.92696700	0.00003020	0.99999771	0.99601876	-0.00000228
56	0.93021335	0.00004642	0.99999664	0.99601542	-0.00000334
57	0.93035760	0.00022839	0.99998351	0.99599900	-0.00001642
58	0.93044715	0.00001336	0.99999904	0.99599804	-0.00000096
59	0.93090095	0.00005925	0.99999576	0.99599381	-0.00000423
60	0.93312606	0.00025386	0.99998243	0.99597631	-0.00001750
61	0.93570460	0.00019602	0.99998697	0.99596334	-0.00001297
62	0.93570531	0.00009097	0.99999395	0.99595732	-0.00000602
63	0.93678423	0.00046984	0.99996932	0.99592676	-0.00003056
64	0.93814455	0.00047415	0.99996973	0.99589661	-0.00003015
65	0.93937156	0.00192997	0.99987930	0.99577640	-0.00012021
66	0.94158656	0.00017275	0.99998960	0.99576605	-0.00001035
67	0.94219095	0.00207608	0.99987638	0.99564296	-0.00012309
68	0.94270700	0.00121140	0.99992853	0.99557180	-0.00007116
69	0.94294913	0.00309454	0.99981823	0.99539084	-0.00018096
70	0.94410709	0.00013222	0.99999240	0.99538327	-0.00000757
71	0.94412989	0.00011788	0.99999322	0.99537652	-0.00000675
72	0.94504716	0.00008049	0.99999545	0.99537199	-0.00000453
73	0.94518845	0.00001508	0.99999915	0.99537115	-0.00000085
74	0.94522984	0.00003733	0.99999790	0.99536905	-0.00000209
75	0.94570847	0.00462028	0.99974213	0.99511237	-0.00025668
76	0.95011042	0.00010439	0.99999466	0.99510706	-0.00000532
77	0.95114538	0.00001629	0.99999918	0.99510624	-0.00000081
78	0.95235885	0.00068021	0.99996680	0.99507320	-0.00003304
79	0.95293412	0.00029950	0.99998556	0.99505884	-0.00001437
80	0.95316720	0.00089459	0.99995709	0.99501614	-0.00004270
81	0.95424003	0.00001096	0.99999949	0.99501563	-0.00000051
82	0.95542354	0.00038392	0.99998249	0.99499821	-0.00001742

83	0.95765546	0.00072908	0.99996846	0.99496682	-0.00003139
84	0.95791158	0.00029654	0.99998725	0.99495414	-0.00001269
85	0.95796742	0.00044358	0.99998095	0.99493518	-0.00001895
86	0.95872941	0.00026867	0.99998868	0.99492392	-0.00001127
87	0.95955507	0.00013126	0.99999458	0.99491853	-0.00000539
88	0.96016565	0.00572486	0.99976731	0.99468702	-0.00023150
89	0.96132462	0.00045630	0.99998200	0.99466912	-0.00001790
90	0.96147813	0.00033474	0.99998685	0.99465604	-0.00001308
91	0.96247876	0.00059008	0.99997743	0.99463360	-0.00002245
92	0.96388929	0.00288204	0.99989401	0.99452817	-0.00010542
93	0.96456790	0.16110495	0.99420499	0.98876487	-0.00576330
94	0.96514734	0.00038576	0.99998632	0.98875134	-0.00001353
95	0.96611486	0.00006646	0.99999771	0.98874907	-0.00000227
96	0.96647327	0.00034745	0.99998815	0.98873736	-0.00001172
97	0.96729829	0.00058646	0.99998050	0.98871808	-0.00001928
98	0.96782771	0.00081063	0.99997349	0.98869187	-0.00002621
99	0.96967186	0.00019923	0.99999386	0.98868580	-0.00000607
100	0.97140489	0.00000052	0.99999998	0.98868579	-0.00000001
101	0.97151898	0.00245818	0.99992897	0.98861557	-0.00007022
102	0.97378279	0.00007978	0.99999788	0.98861347	-0.00000210
103	0.97387300	0.00646414	0.99982888	0.98844430	-0.00016917
104	0.97447870	0.00000928	0.99999976	0.98844406	-0.00000024
105	0.97542567	0.00032897	0.99999181	0.98843597	-0.00000809
106	0.97553248	0.00158056	0.99996085	0.98839727	-0.00003870
107	0.97687814	0.00167428	0.99996083	0.98835856	-0.00003871
108	0.97694475	0.00007937	0.99999815	0.98835673	-0.00000183
109	0.97761784	0.00013456	0.99999695	0.98835372	-0.00000301
110	0.97814353	0.00002019	0.99999955	0.98835328	-0.00000044
111	0.97893866	0.00003505	0.99999925	0.98835254	-0.00000074
112	0.98021856	0.00028361	0.99999433	0.98834694	-0.00000560
113	0.98029857	0.00098018	0.99998050	0.98832767	-0.00001928
114	0.98156464	0.00005903	0.99999890	0.98832658	-0.00000109
115	0.98163628	0.00021669	0.99999598	0.98832261	-0.00000397
116	0.98179959	0.00061015	0.99998879	0.98831153	-0.00001108
117	0.98314836	0.00001656	0.99999972	0.98831126	-0.00000028
118	0.98317518	0.00207513	0.99996479	0.98827646	-0.00003480
119	0.98322042	0.00024140	0.99999592	0.98827242	-0.00000404
120	0.98342333	0.00161809	0.99997295	0.98824569	-0.00002673
121	0.98474591	0.00047484	0.99999270	0.98823848	-0.00000721
122	0.98535996	0.00996429	0.99985305	0.98809326	-0.00014522
123	0.98536802	0.00996910	0.99985307	0.98794808	-0.00014519
124	0.98561965	0.02298377	0.99966714	0.98761923	-0.00032885
125	0.98586795	0.00005079	0.99999928	0.98761851	-0.00000071
126	0.98602861	0.16261052	0.99771470	0.98536151	-0.00225701

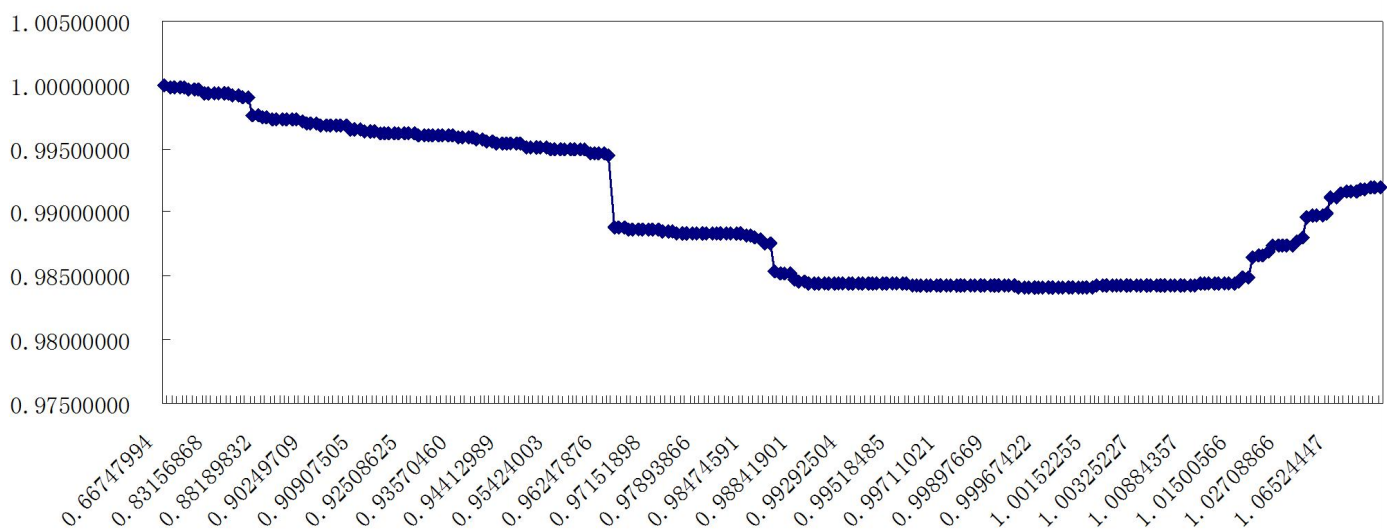
127	0.98606049	0.00991331	0.99986085	0.98522440	-0.00013711
128	0.98633631	0.00082413	0.99998866	0.98521323	-0.00001117
129	0.98668381	0.00362170	0.99995145	0.98516539	-0.00004783
130	0.98805562	0.03411327	0.99959017	0.98476164	-0.00040375
131	0.98841901	0.01759311	0.99979509	0.98455985	-0.00020179
132	0.98864131	0.00001580	0.99999982	0.98455967	-0.00000018
133	0.98913814	0.01073976	0.99988271	0.98444420	-0.00011547
134	0.98976267	0.00037632	0.99999613	0.98444039	-0.00000381
135	0.99076945	0.00015700	0.99999854	0.98443895	-0.00000143
136	0.99117499	0.00036113	0.99999680	0.98443580	-0.00000315
137	0.99122372	0.00029082	0.99999744	0.98443328	-0.00000252
138	0.99163286	0.00009152	0.99999923	0.98443252	-0.00000076
139	0.99173068	0.00027602	0.99999771	0.98443027	-0.00000226
140	0.99238451	0.00003579	0.99999973	0.98443000	-0.00000027
141	0.99292504	0.00031690	0.99999775	0.98442778	-0.00000221
142	0.99307909	0.00278542	0.99998066	0.98440874	-0.00001904
143	0.99307910	0.00001661	0.99999988	0.98440863	-0.00000011
144	0.99328475	0.00001131	0.99999992	0.98440855	-0.00000007
145	0.99328475	0.00001131	0.99999992	0.98440848	-0.00000007
146	0.99391735	0.00057244	0.99999651	0.98440504	-0.00000344
147	0.99395598	0.00052419	0.99999682	0.98440191	-0.00000313
148	0.99438872	0.00108896	0.99999387	0.98439588	-0.00000603
149	0.99484616	0.00395678	0.99997955	0.98437575	-0.00002013
150	0.99487303	0.00050416	0.99999741	0.98437320	-0.00000255
151	0.99518485	0.00000619	0.99999997	0.98437317	-0.00000003
152	0.99527743	0.00260790	0.99998765	0.98436102	-0.00001215
153	0.99542633	0.00039675	0.99999818	0.98435923	-0.00000179
154	0.99559569	0.00315190	0.99998609	0.98434553	-0.00001369
155	0.99569897	0.00080651	0.99999652	0.98434211	-0.00000342
156	0.99623028	0.00001565	0.99999994	0.98434205	-0.00000006
157	0.99675000	0.00241796	0.99999213	0.98433431	-0.00000775
158	0.99678866	0.01107693	0.99996437	0.98429923	-0.00003507
159	0.99709295	0.00017334	0.99999950	0.98429874	-0.00000050
160	0.99709757	0.00005331	0.99999985	0.98429859	-0.00000015
161	0.99711021	0.01418368	0.99995895	0.98425818	-0.00004040
162	0.99716752	0.00167956	0.99999524	0.98425349	-0.00000469
163	0.99723677	0.00004462	0.99999988	0.98425337	-0.00000012
164	0.99741525	0.00460800	0.99998807	0.98424164	-0.00001174
165	0.99771592	0.00131758	0.99999699	0.98423867	-0.00000297
166	0.99785241	0.00715955	0.99998461	0.98422352	-0.00001515
167	0.99792521	0.00509424	0.99998942	0.98421311	-0.00001041
168	0.99850235	0.00251920	0.99999622	0.98420939	-0.00000372
169	0.99853077	0.00171804	0.99999747	0.98420690	-0.00000249
170	0.99865859	0.00225249	0.99999698	0.98420393	-0.00000298

171	0.99897669	0.01175684	0.99998796	0.98419208	-0.00001185
172	0.99900283	0.00011275	0.99999989	0.98419197	-0.00000011
173	0.99904322	0.00107835	0.99999897	0.98419096	-0.00000102
174	0.99917017	0.00007392	0.99999994	0.98419089	-0.00000006
175	0.99919320	0.00169584	0.99999863	0.98418955	-0.00000135
176	0.99926014	0.00896155	0.99999337	0.98418302	-0.00000653
177	0.99930777	0.00010841	0.99999992	0.98418295	-0.00000007
178	0.99937280	0.00128397	0.99999919	0.98418215	-0.00000079
179	0.99951883	0.02624485	0.99998737	0.98416972	-0.00001243
180	0.99967406	0.00463774	0.99999849	0.98416823	-0.00000149
181	0.99967422	0.00354844	0.99999884	0.98416710	-0.00000114
182	0.99971582	0.00012330	0.99999996	0.98416706	-0.00000003
183	0.99986828	0.00158149	0.99999979	0.98416686	-0.00000021
184	1.00000000	0.00000105	1.00000000	0.98416686	0.00000000
185	1.00000000	0.00000003	1.00000000	0.98416686	0.00000000
186	1.00027707	0.00056929	1.00000016	0.98416701	0.00000016
187	1.00037064	0.00399124	1.00000148	0.98416847	0.00000146
188	1.00060250	0.00148593	1.00000089	0.98416935	0.00000088
189	1.00085253	0.01646616	1.00001403	0.98418316	0.00001381
190	1.00090108	0.00049586	1.00000045	0.98418360	0.00000044
191	1.00152255	0.00239965	1.00000365	0.98418719	0.00000359
192	1.00175808	0.00206707	1.00000363	0.98419076	0.00000357
193	1.00211508	0.00001065	1.00000002	0.98419079	0.00000002
194	1.00212712	0.00471293	1.00001001	0.98420064	0.00000986
195	1.00234352	0.00015463	1.00000036	0.98420100	0.00000036
196	1.00262678	0.00072905	1.00000191	0.98420288	0.00000188
197	1.00275594	0.01720884	1.00004736	0.98424949	0.00004661
198	1.00289886	0.00075014	1.00000217	0.98425163	0.00000214
199	1.00313856	0.00031825	1.00000100	0.98425261	0.00000098
200	1.00322315	0.00249413	1.00000803	0.98426051	0.00000790
201	1.00325227	0.00026252	1.00000085	0.98426135	0.00000084
202	1.00328901	0.00003631	1.00000012	0.98426147	0.00000012
203	1.00352898	0.00181066	1.00000638	0.98426775	0.00000628
204	1.00457411	0.00138942	1.00000634	0.98427399	0.00000624
205	1.00476613	0.00247343	1.00001176	0.98428556	0.00001158
206	1.00540196	0.00440138	1.00002371	0.98430890	0.00002334
207	1.00553653	0.00006992	1.00000039	0.98430928	0.00000038
208	1.00562866	0.00090769	1.00000509	0.98431430	0.00000501
209	1.00573436	0.00069532	1.00000398	0.98431821	0.00000391
210	1.00667356	0.00118758	1.00000790	0.98432599	0.00000778
211	1.00884357	0.00040624	1.00000358	0.98432951	0.00000352
212	1.00945442	0.00134070	1.00001262	0.98434193	0.00001242
213	1.00969072	0.00056012	1.00000540	0.98434724	0.00000532
214	1.00970787	0.00001517	1.00000015	0.98434739	0.00000014

215	1.00988024	0.00016334	1.00000161	0.98434897	0.00000158
216	1.01063436	0.00055892	1.00000591	0.98435479	0.00000582
217	1.01100004	0.00005478	1.00000060	0.98435538	0.00000059
218	1.01107342	0.00019229	1.00000212	0.98435746	0.00000208
219	1.01141962	0.00030419	1.00000345	0.98436086	0.00000340
220	1.01243926	0.00009943	1.00000123	0.98436207	0.00000121
221	1.01500566	0.01752125	1.00026100	0.98461899	0.00025692
222	1.01523320	0.01536872	1.00023238	0.98484779	0.00022880
223	1.01642021	0.00115861	1.00001887	0.98486638	0.00001858
224	1.01757065	0.09137974	1.00159293	0.98643520	0.00156882
225	1.01840542	0.00608219	1.00011093	0.98654463	0.00010943
226	1.02270399	0.00001475	1.00000033	0.98654495	0.00000033
227	1.02317906	0.01630442	1.00037368	0.98691360	0.00036865
228	1.02458851	0.01846440	1.00044862	0.98735635	0.00044275
229	1.02540692	0.00001244	1.00000031	0.98735666	0.00000031
230	1.02602198	0.00227666	1.00005849	0.98741441	0.00005775
231	1.02708866	0.00025587	1.00000684	0.98742116	0.00000675
232	1.02751623	0.00010699	1.00000290	0.98742403	0.00000287
233	1.03462745	0.00774641	1.00026373	0.98768445	0.00026042
234	1.03532519	0.00905291	1.00031433	0.98799490	0.00031046
235	1.03640524	0.04393558	1.00157229	0.98954832	0.00155342
236	1.03985395	0.00716298	1.00027997	0.98982536	0.00027704
237	1.04010138	0.00001580	1.00000062	0.98982598	0.00000061
238	1.04101605	0.00005743	1.00000231	0.98982826	0.00000228
239	1.04736673	0.00144236	1.00006675	0.98989434	0.00006607
240	1.06242626	0.02138248	1.00129566	0.99117690	0.00128257
241	1.06524447	0.00001185	1.00000075	0.99117765	0.00000074
242	1.06626498	0.00377463	1.00024222	0.99141773	0.00024008
243	1.08267277	0.00214378	1.00017030	0.99158656	0.00016884
244	1.09508382	0.00011220	1.00001019	0.99159667	0.00001011
245	1.11748663	0.00015162	1.00001684	0.99161337	0.00001670
246	1.14414494	0.00116277	1.00015659	0.99176865	0.00015528
247	1.19688046	0.00043417	1.00007803	0.99184603	0.00007739
248	1.24521029	0.00039874	1.00008745	0.99193277	0.00008674
249	1.32415179	0.00008128	1.00002282	0.99195541	0.00002264
250	2.02790590	0.00000143	1.00000101	0.99195641	0.00000100

注：上述表格只是 2016 年 4 月相对于 2016 年 3 月各匹配手机项目环比价格指数的相关计算结果。其他相邻月份相应匹配手机项目个体环比价格指数及其有关计算结果可类推，附录不再一一列出，也不一一加以分析。

为进一步确认是哪些手机项目价格变化导致了 Törnqvist 链式价格指数的明显波动，本文首先通过作图的方式加以识别。具体地，我们以上表中 p'_i / p_i^{t-1} 为横坐标，Törnqvist 的值为纵坐标作图，具体见附图 1。



附图 1 个体环比价格指数对 Törnqvist 环比价格指数值的作用效果

根据上图，我们能够较为清晰地发现，Törnqvist 的值出现了 6 次较为明显的断点，表明相应手机项目个体环比价格指数对 Törnqvist 的值造成了相对较大改变。进一步结合附录表 A5，经过一一查看，我们可以发现，相应序号为 19、93、126、224、235、240 手机的环比价格指数与“1”偏离均相对较大，其 $(s_i^{t-1} + s_i^t) / 2$ 也即支出额权重也相对较大，从而对 Törnqvist 环比价格指数造成了较大冲击，并促使后者出现明显的断点。

进一步地，本文基于上述过程的反复尝试和图表分析，最终决定以 0.001 为临界点，并作图判定图中不存在明显的断点为止，也即剔除所有 $|Törnqvist(n) - Törnqvist(n-1)| \geq 0.001$ 的相应手机项目^①。最终，本文将所有被剔除的匹配项目视为高漂移项目，剩余的项目为低漂移项目，并据此构造相关的灵活商品篮子。

表 A6 原匹配项目和高、低漂移项目链式价格指数及高漂移项目销售额占比情况 (%)

指数的价格 比较期	原匹配项目链 式指数	低漂移项目链 式指数	高漂移项目链 式指数	高漂移项目销售额占比		
2016.1(t0)	100.00	100.00	100.00	基期	当期	平均值
2016.2/t0	99.99	99.97	100.00	60.20	57.43	58.81
2016.3/t0	97.74	98.62	97.13	58.44	59.04	58.74
2016.4/t0	96.95	98.04	96.13	50.03	48.33	49.18
2016.5/t0	96.93	97.23	98.09	31.67	25.78	28.72
2016.6/t0	94.59	95.33	95.15	44.17	42.76	43.46
2016.7/t0	93.60	94.55	93.53	19.09	18.94	19.02
2016.8/t0	91.06	92.94	88.00	19.52	30.60	25.06
2016.9/t0	87.80	91.41	80.93	29.30	30.00	29.65
2016.10/t0	85.99	90.03	77.72	23.80	19.20	21.50
2016.11/t0	82.92	87.85	71.88	20.90	23.50	22.20
2016.12/t0	81.14	87.32	65.41	16.52	19.98	18.25
2017.1/t0	81.22	86.90	67.37	17.13	16.98	17.05
2017.2/t0	82.34	87.57	71.89	12.54	9.10	10.82
2017.3/t0	79.40	85.92	64.46	15.55	23.01	19.28
2017.4/t0	73.81	84.73	52.56	29.94	32.38	31.16

①其中， n ($n=1, 2, \dots, 250$) 为附件表 A5 中手机项目序号。

2017.5/t0	73.62	84.31	52.89	20.42	23.08	21.75
2017.6/t0	70.84	81.85	49.04	17.10	21.70	19.40
2017.7/t0	71.05	81.64	52.96	9.39	4.97	7.18
2017.8/t0	69.36	79.96	50.71	14.40	15.50	14.95
2017.9/t0	68.75	79.67	48.04	10.22	9.95	10.09
2017.10/t0	68.06	78.75	49.26	4.16	5.65	4.90
2017.11/t0	64.24	75.63	42.87	9.86	25.50	17.68
2017.12/t0	63.75	75.11	41.76	6.36	5.39	5.88
2018.1/t0	61.72	73.30	39.64	5.96	12.63	9.30
2018.2/t0	61.31	72.72	39.64	2.93	0.28	1.61
2018.3/t0	60.32	71.53	39.18	6.54	5.63	6.09
2018.4/t0	56.44	70.32	30.36	7.53	23.52	15.53