

Table 1. Short run and long run causality in time series : inference

<i>Month</i>	<i>Nonborrowed Reserves (log)</i>	<i>Federal Funds Rate (log)</i>	<i>GDP Deflator (log)</i>	<i>Real GDP (log)</i>
1965:01	9.3633	1.3610	3.2101	7.9458
1965:02	9.3483	1.3813	3.2120	7.9579
1965:03	9.3477	1.3962	3.2104	7.9747
1965:04	9.3563	1.4085	3.2144	7.9751
1965:05	9.3429	1.4110	3.2144	7.9761
1965:06	9.3472	1.3962	3.2158	7.9717
1965:07	9.3539	1.4085	3.2220	7.9837
1965:08	9.3528	1.4159	3.2229	7.9892
1965:09	9.3516	1.3888	3.2236	7.9994
1965:10	9.3613	1.4061	3.2271	8.0133
1965:11	9.3635	1.4110	3.2266	8.0147
1965:12	9.3819	1.4633	3.2269	8.0201
1966:01	9.3822	1.4861	3.2310	8.0277
1966:02	9.3683	1.5261	3.2365	8.0352
1966:03	9.3591	1.5369	3.2367	8.0484
1966:04	9.3606	1.5412	3.2400	8.0457
1966:05	9.3566	1.5892	3.2435	8.0373
1966:06	9.3544	1.6429	3.2443	8.0387
1966:07	9.3613	1.6677	3.2504	8.0436
1966:08	9.3440	1.7102	3.2544	8.0474
1966:09	9.3466	1.6864	3.2579	8.0540
1966:10	9.3471	1.7102	3.2599	8.0527
1966:11	9.3586	1.7527	3.2628	8.0559
1966:12	9.3665	1.6864	3.2631	8.0564
1967:01	9.3863	1.5974	3.2654	8.0622
1967:02	9.3856	1.6094	3.2661	8.0666
1967:03	9.4122	1.5107	3.2657	8.0679
1967:04	9.4208	1.3987	3.2705	8.0710
1967:05	9.4197	1.3712	3.2732	8.0694
1967:06	9.4215	1.3813	3.2764	8.0654
1967:07	9.4420	1.3324	3.2815	8.0707
1967:08	9.4413	1.3584	3.2856	8.0850
1967:09	9.4539	1.3863	3.2869	8.0727
1967:10	9.4695	1.3558	3.2934	8.0705
1967:11	9.4726	1.4159	3.2954	8.0876
1967:12	9.4690	1.5063	3.2988	8.0916
1968:01	9.4722	1.5261	3.3065	8.1026
1968:02	9.4584	1.5518	3.3076	8.0959
1968:03	9.4356	1.6194	3.3066	8.1028
1968:04	9.4280	1.7509	3.3131	8.1164
1968:05	9.4246	1.8116	3.3149	8.1197

1968:06	9.4380	1.8034	3.3146	8.1130
1968:07	9.4672	1.7951	3.3210	8.1213
1968:08	9.4630	1.7967	3.3244	8.1331
1968:09	9.4674	1.7544	3.3297	8.1176
1968:10	9.4793	1.7783	3.3363	8.1329
1968:11	9.4807	1.7596	3.3407	8.1310
1968:12	9.4743	1.7951	3.3410	8.1240
1969:01	9.4644	1.8405	3.3444	8.1423
1969:02	9.4634	1.8931	3.3457	8.1424
1969:03	9.4534	1.9155	3.3491	8.1477
1969:04	9.4309	2.0028	3.3560	8.1456
1969:05	9.4311	2.1599	3.3604	8.1464
1969:06	9.4263	2.1861	3.3648	8.1379
1969:07	9.4124	2.1529	3.3715	8.1457
1969:08	9.4387	2.2181	3.3742	8.1519
1969:09	9.4527	2.2138	3.3768	8.1473
1969:10	9.4536	2.1972	3.3824	8.1501
1969:11	9.4703	2.1804	3.3884	8.1392
1969:12	9.4765	2.1939	3.3925	8.1386
1970:01	9.4825	2.1950	3.3975	8.1356
1970:02	9.4742	2.1950	3.4001	8.1474
1970:03	9.4859	2.0490	3.4060	8.1417
1970:04	9.5003	2.0919	3.4112	8.1458
1970:05	9.4758	2.0719	3.4146	8.1354
1970:06	9.4877	2.0281	3.4175	8.1446
1970:07	9.4571	1.9755	3.4210	8.1551
1970:08	9.5064	1.8886	3.4241	8.1563
1970:09	9.5358	1.8390	3.4276	8.1448
1970:10	9.5480	1.8245	3.4335	8.1439
1970:11	9.5507	1.7228	3.4379	8.1445
1970:12	9.5628	1.5892	3.4403	8.1480
1971:01	9.5638	1.4207	3.4498	8.1707
1971:02	9.5811	1.3137	3.4533	8.1644
1971:03	9.5805	1.3110	3.4564	8.1732
1971:04	9.5892	1.4231	3.4622	8.1742
1971:05	9.5955	1.5326	3.4663	8.1746
1971:06	9.5863	1.5913	3.4687	8.1735
1971:07	9.5682	1.6696	3.4748	8.1751
1971:08	9.5736	1.7174	3.4796	8.1810
1971:09	9.6110	1.7138	3.4800	8.1837
1971:10	9.6060	1.6487	3.4847	8.1808
1971:11	9.6067	1.5913	3.4858	8.1821
1971:12	9.6227	1.4207	3.4916	8.1935
1972:01	9.6387	1.2528	3.4973	8.2029
1972:02	9.6376	1.1909	3.5007	8.1922
1972:03	9.6410	1.3429	3.5006	8.2131

1972:04	9.6508	1.4279	3.5050	8.2219
1972:05	9.6568	1.4516	3.5057	8.2282
1972:06	9.6683	1.4951	3.5060	8.2244
1972:07	9.6548	1.5151	3.5115	8.2241
1972:08	9.6565	1.5686	3.5137	8.2411
1972:09	9.6459	1.5831	3.5184	8.2378
1972:10	9.6574	1.6174	3.5257	8.2497
1972:11	9.6699	1.6214	3.5301	8.2513
1972:12	9.6547	1.6734	3.5321	8.2509
1973:01	9.6517	1.7817	3.5362	8.2733
1973:02	9.6238	1.8840	3.5400	8.2716
1973:03	9.6224	1.9587	3.5467	8.2767
1973:04	9.6171	1.9629	3.5508	8.2786
1973:05	9.6044	2.0592	3.5556	8.2785
1973:06	9.6093	2.1389	3.5596	8.2800
1973:07	9.6203	2.3418	3.5661	8.2833
1973:08	9.5927	2.3514	3.5753	8.2624
1973:09	9.6097	2.3777	3.5840	8.2828
1973:10	9.6463	2.3036	3.5903	8.2821
1973:11	9.6541	2.3056	3.5977	8.2874
1973:12	9.6629	2.2976	3.6039	8.2844
1974:01	9.6912	2.2670	3.6090	8.2765
1974:02	9.6761	2.1939	3.6138	8.2725
1974:03	9.6688	2.2354	3.6180	8.2749
1974:04	9.6525	2.3523	3.6228	8.2769
1974:05	9.6480	2.4257	3.6340	8.2788
1974:06	9.6542	2.4791	3.6401	8.2750
1974:07	9.6560	2.5588	3.6510	8.2703
1974:08	9.6545	2.4857	3.6639	8.2645
1974:09	9.6634	2.4283	3.6756	8.2706
1974:10	9.6817	2.3086	3.6844	8.2647
1974:11	9.7027	2.2460	3.6960	8.2527
1974:12	9.7392	2.1436	3.7011	8.2547
1975:01	9.7416	1.9643	3.7117	8.2513
1975:02	9.7513	1.8310	3.7160	8.2527
1975:03	9.7625	1.7120	3.7203	8.2448
1975:04	9.7641	1.7029	3.7269	8.2557
1975:05	9.7579	1.6525	3.7302	8.2615
1975:06	9.7702	1.7138	3.7345	8.2661
1975:07	9.7614	1.8083	3.7449	8.2744
1975:08	9.7677	1.8148	3.7485	8.2783
1975:09	9.7672	1.8310	3.7551	8.2818
1975:10	9.7647	1.7613	3.7641	8.2905
1975:11	9.7866	1.6525	3.7690	8.2852
1975:12	9.7815	1.6487	3.7713	8.2928
1976:01	9.7728	1.5831	3.7778	8.3102

1976:02	9.7832	1.5623	3.7789	8.3123
1976:03	9.7883	1.5769	3.7822	8.3131
1976:04	9.7799	1.5728	3.7866	8.3174
1976:05	9.7884	1.6658	3.7885	8.3133
1976:06	9.7881	1.7011	3.7911	8.3210
1976:07	9.7821	1.6696	3.7971	8.3187
1976:08	9.7955	1.6658	3.8023	8.3173
1976:09	9.7952	1.6582	3.8072	8.3271
1976:10	9.7972	1.6154	3.8146	8.3251
1976:11	9.8129	1.5994	3.8193	8.3268
1976:12	9.8166	1.5369	3.8259	8.3416
1977:01	9.8175	1.5282	3.8277	8.3402
1977:02	9.8107	1.5433	3.8327	8.3406
1977:03	9.8147	1.5454	3.8385	8.3477
1977:04	9.8204	1.5539	3.8451	8.3592
1977:05	9.8190	1.6771	3.8501	8.3676
1977:06	9.8096	1.6845	3.8552	8.3568
1977:07	9.8215	1.6901	3.8603	8.3723
1977:08	9.7902	1.7750	3.8659	8.3735
1977:09	9.8118	1.8148	3.8685	8.3809
1977:10	9.7789	1.8672	3.8762	8.3707
1977:11	9.8064	1.8733	3.8811	8.3795
1977:12	9.8212	1.8810	3.8874	8.3835
1978:01	9.8419	1.9021	3.8940	8.3707
1978:02	9.8603	1.9140	3.8999	8.3738
1978:03	9.8500	1.9155	3.9059	8.3983
1978:04	9.8443	1.9301	3.9161	8.4123
1978:05	9.8224	1.9961	3.9223	8.4133
1978:06	9.8402	2.0281	3.9275	8.4195
1978:07	9.8417	2.0554	3.9339	8.4140
1978:08	9.8401	2.0844	3.9384	8.4292
1978:09	9.8487	2.1342	3.9466	8.4259
1978:10	9.8433	2.1928	3.9527	8.4295
1978:11	9.8610	2.2783	3.9615	8.4342
1978:12	9.8461	2.3056	3.9682	8.4388
1979:01	9.8426	2.3096	3.9749	8.4312
1979:02	9.8214	2.3086	3.9820	8.4368
1979:03	9.8222	2.3115	3.9877	8.4374
1979:04	9.8302	2.3036	3.9960	8.4352
1979:05	9.7863	2.3263	4.0015	8.4351
1979:06	9.8196	2.3312	4.0081	8.4378
1979:07	9.8428	2.3485	4.0180	8.4496
1979:08	9.8481	2.3924	4.0213	8.4415
1979:09	9.8345	2.4362	4.0313	8.4351
1979:10	9.8175	2.6225	4.0369	8.4481
1979:11	9.8251	2.5787	4.0428	8.4428

1979:12	9.8652	2.6232	4.0494	8.4402
1980:01	9.8757	2.6261	4.0580	8.4575
1980:02	9.8536	2.6483	4.0645	8.4424
1980:03	9.7969	2.8443	4.0742	8.4411
1980:04	9.8377	2.8685	4.0836	8.4386
1980:05	9.9117	2.3961	4.0871	8.4155
1980:06	9.9283	2.2481	4.0922	8.4143
1980:07	9.9357	2.2006	4.1044	8.4240
1980:08	9.9328	2.2628	4.1116	8.4201
1980:09	9.9040	2.3860	4.1166	8.4255
1980:10	9.8953	2.5502	4.1310	8.4374
1980:11	9.9080	2.7632	4.1372	8.4389
1980:12	9.9198	2.9392	4.1421	8.4492
1981:01	9.9207	2.9486	4.1538	8.4563
1981:02	9.9310	2.7682	4.1625	8.4560
1981:03	9.9564	2.6878	4.1696	8.4600
1981:04	9.9454	2.7549	4.1753	8.4442
1981:05	9.9146	2.9189	4.1804	8.4514
1981:06	9.9181	2.9497	4.1858	8.4560
1981:07	9.9356	2.9465	4.1921	8.4618
1981:08	9.9531	2.8803	4.1960	8.4547
1981:09	9.9680	2.7644	4.2035	8.4610
1981:10	9.9783	2.7134	4.2101	8.4453
1981:11	9.9915	2.5885	4.2166	8.4511
1981:12	9.9968	2.5153	4.2230	8.4416
1982:01	9.9688	2.5817	4.2299	8.4181
1982:02	9.9520	2.6933	4.2290	8.4304
1982:03	9.9620	2.6865	4.2348	8.4398
1982:04	9.9529	2.7040	4.2407	8.4446
1982:05	9.9740	2.6707	4.2453	8.4210
1982:06	9.9650	2.6497	4.2509	8.4359
1982:07	9.9777	2.5329	4.2545	8.4420
1982:08	9.9954	2.3145	4.2576	8.4266
1982:09	9.9929	2.3331	4.2591	8.4406
1982:10	10.0240	2.2732	4.2635	8.4428
1982:11	10.0400	2.2192	4.2658	8.4428
1982:12	10.0500	2.1917	4.2714	8.4484
1983:01	10.0370	2.1610	4.2725	8.4479
1983:02	10.0690	2.1412	4.2758	8.4529
1983:03	10.0830	2.1713	4.2776	8.4515
1983:04	10.0980	2.1748	4.2840	8.4678
1983:05	10.1030	2.1552	4.2867	8.4677
1983:06	10.1100	2.1950	4.2883	8.4806
1983:07	10.1060	2.2375	4.2934	8.4848
1983:08	10.0990	2.2576	4.2961	8.4904
1983:09	10.1070	2.2460	4.2982	8.4924

1983:10	10.1210	2.2492	4.3032	8.4917
1983:11	10.1060	2.2343	4.3046	8.5069
1983:12	10.1100	2.2481	4.3084	8.5192
1984:01	10.1160	2.2576	4.3161	8.5227
1984:02	10.1370	2.2607	4.3199	8.5254
1984:03	10.1220	2.2935	4.3205	8.5327
1984:04	10.1090	2.3312	4.3261	8.5337
1984:05	10.0420	2.3341	4.3244	8.5480
1984:06	10.1200	2.4033	4.3259	8.5460
1984:07	10.1350	2.4186	4.3320	8.5421
1984:08	10.1310	2.4544	4.3343	8.5602
1984:09	10.1390	2.4248	4.3377	8.5476
1984:10	10.1360	2.3016	4.3398	8.5551
1984:11	10.1520	2.2439	4.3424	8.5569
1984:12	10.1760	2.1258	4.3415	8.5629
1985:01	10.1960	2.1223	4.3487	8.5637
1985:02	10.2070	2.1401	4.3523	8.5742
1985:03	10.2050	2.1494	4.3537	8.5694
1985:04	10.2210	2.1126	4.3572	8.5741
1985:05	10.2190	2.0757	4.3597	8.5755
1985:06	10.2550	2.0189	4.3609	8.5742
1985:07	10.2630	2.0643	4.3665	8.5851
1985:08	10.2820	2.0669	4.3677	8.5935
1985:09	10.2880	2.0694	4.3627	8.5864
1985:10	10.3040	2.0782	4.3720	8.5935
1985:11	10.2950	2.0857	4.3747	8.5929
1985:12	10.330	2.1126	4.3767	8.5941
1986:01	10.3540	2.0968	4.3790	8.6020
1986:02	10.350	2.0618	4.3781	8.6100
1986:03	10.3670	2.0122	4.3777	8.6072
1986:04	10.3820	1.9445	4.3821	8.6123
1986:05	10.4050	1.9242	4.3842	8.6060
1986:06	10.4290	1.9344	4.3873	8.6086
1986:07	10.4460	1.8810	4.3914	8.6146
1986:08	10.4610	1.8197	4.3928	8.6122
1986:09	10.4700	1.7733	4.3917	8.6193
1986:10	10.4880	1.7664	4.3980	8.6242
1986:11	10.5150	1.7984	4.3988	8.6148
1986:12	10.5570	1.9330	4.4013	8.6244
1987:01	10.5730	1.8610	4.4070	8.6162
1987:02	10.5650	1.8083	4.4079	8.6302
1987:03	10.5600	1.8132	4.4089	8.6338
1987:04	10.5700	1.8516	4.4155	8.6370
1987:05	10.5770	1.9242	4.4152	8.6360
1987:06	10.5750	1.9066	4.4150	8.6375
1987:07	10.5640	1.8840	4.4189	8.6408

1987:08	10.5680	1.9066	4.4223	8.6435
1987:09	10.5640	1.9769	4.4261	8.6518
1987:10	10.5800	1.9865	4.4304	8.6544
1987:11	10.5720	1.9006	4.4330	8.6574
1987:12	10.5610	1.9125	4.4326	8.6641
1988:01	10.5700	1.9213	4.4388	8.6613
1988:02	10.5770	1.8840	4.4382	8.6615
1988:03	10.5700	1.8840	4.4404	8.6728
1988:04	10.5830	1.9272	4.4466	8.6726
1988:05	10.5860	1.9587	4.4501	8.6755
1988:06	10.5930	2.0162	4.4524	8.6765
1988:07	10.5940	2.0477	4.4593	8.6776
1988:08	10.5970	2.0807	4.4631	8.6828
1988:09	10.5870	2.1029	4.4650	8.6823
1988:10	10.5920	2.1163	4.4696	8.6870
1988:11	10.5950	2.1223	4.4714	8.6903
1988:12	10.5960	2.1702	4.4739	8.7020
1989:01	10.5940	2.2105	4.4798	8.7074
1989:02	10.5920	2.2364	4.4837	8.7002
1989:03	10.5810	2.2875	4.4854	8.7000
1989:04	10.5750	2.2865	4.4883	8.7072
1989:05	10.5670	2.2834	4.4938	8.7089
1989:06	10.5600	2.2544	4.4972	8.7124
1989:07	10.5700	2.2235	4.4999	8.7157
1989:08	10.5660	2.1961	4.5017	8.7150
1989:09	10.5710	2.1994	4.5046	8.7141
1989:10	10.5830	2.1793	4.5078	8.7128
1989:11	10.5920	2.1459	4.5099	8.7170
1989:12	10.6040	2.1342	4.5116	8.7178
1990:01	10.6050	2.1078	4.5184	8.7196
1990:02	10.5910	2.1090	4.5215	8.7261
1990:03	10.6100	2.1138	4.5254	8.7320
1990:04	10.6160	2.1114	4.5307	8.7297
1990:05	10.6030	2.1017	4.5333	8.7316
1990:06	10.6010	2.1150	4.5370	8.7245
1990:07	10.6010	2.0980	4.5405	8.7314
1990:08	10.5980	2.0956	4.5439	8.7199
1990:09	10.6070	2.1041	4.5486	8.7203
1990:10	10.6030	2.0931	4.5499	8.7141
1990:11	10.6140	2.0554	4.5555	8.7172
1990:12	10.6330	1.9892	4.5594	8.7097
1991:01	10.6410	1.9330	4.5650	8.7100
1991:02	10.6420	1.8326	4.5677	8.7092
1991:03	10.6390	1.8116	4.5697	8.7060
1991:04	10.6420	1.7766	4.5722	8.7166
1991:05	10.6490	1.7544	4.5752	8.7087

1991:06	10.6560	1.7750	4.5768	8.7135
1991:07	10.6560	1.7613	4.5795	8.7142
1991:08	10.6660	1.7334	4.5816	8.7110
1991:09	10.6710	1.6956	4.5845	8.7212
1991:10	10.6840	1.6506	4.5864	8.7162
1991:11	10.7030	1.5707	4.5883	8.7197
1991:12	10.7230	1.4884	4.5894	8.7176
1992:01	10.7380	1.3938	4.5947	8.7233
1992:02	10.7720	1.4012	4.5957	8.7295
1992:03	10.7870	1.3813	4.5980	8.7352
1992:04	10.8000	1.3164	4.6022	8.7337
1992:05	10.8040	1.3403	4.6032	8.7305
1992:06	10.8010	1.3244	4.6041	8.7428
1992:07	10.8080	1.1787	4.6064	8.7443
1992:08	10.8220	1.1939	4.6077	8.7409
1992:09	10.8390	1.1694	4.6074	8.7443
1992:10	10.8710	1.1314	4.6126	8.7514
1992:11	10.8900	1.1282	4.6137	8.7520
1992:12	10.9020	1.0716	4.6161	8.7570
1993:01	10.9080	1.1053	4.6203	8.7537
1993:02	10.9110	1.1086	4.6235	8.7540
1993:03	10.9160	1.1217	4.6252	8.7523
1993:04	10.9200	1.0852	4.6290	8.7555
1993:05	10.9430	1.0986	4.6293	8.7585
1993:06	10.9490	1.1119	4.6283	8.7599
1993:07	10.9570	1.1184	4.6328	8.7586
1993:08	10.9620	1.1086	4.6319	8.7642
1993:09	10.9740	1.1282	4.6336	8.7676
1993:10	10.9930	1.0953	4.6361	8.7682
1993:11	11.0060	1.1053	4.6392	8.7800
1993:12	11.0100	1.0852	4.6405	8.7777
1994:01	11.0130	1.1151	4.6446	8.7756
1994:02	11.0130	1.1787	4.6456	8.7840
1994:03	11.0090	1.2060	4.6459	8.7853
1994:04	11.0080	1.2698	4.6494	8.7882
1994:05	11.0000	1.3888	4.6505	8.7981
1994:06	10.9970	1.4469	4.6505	8.7955
1994:07	10.9970	1.4493	4.6538	8.7990
1994:08	10.9910	1.4974	4.6558	8.8070
1994:09	10.9900	1.5539	4.6579	8.8021
1994:10	10.9880	1.5602	4.6583	8.8114
1994:11	10.9890	1.6658	4.6614	8.8085
1994:12	10.9890	1.6956	4.6650	8.8099
1995:01	10.9870	1.7102	4.6686	8.8127
1995:02	10.9820	1.7783	4.6703	8.8092
1995:03	10.9740	1.7884	4.6711	8.8112

1995:04	10.9660	1.8001	4.6746	8.8104
1995:05	10.9620	1.7934	4.6758	8.8103
1995:06	10.9530	1.7918	4.6765	8.8174
1995:07	10.9570	1.7664	4.6806	8.8163
1995:08	10.9540	1.7475	4.6812	8.8222
1995:09	10.9520	1.7579	4.6818	8.8272
1995:10	10.9440	1.7509	4.6843	8.8244
1995:11	10.9360	1.7579	4.6863	8.8218
1995:12	10.9350	1.7228	4.6871	8.8214
1996:01	10.9270	1.7156	4.6905	8.8241
1996:02	10.9110	1.6525	4.6910	8.8323
1996:03	10.9260	1.6696	4.6926	8.8260
1996:04	10.9160	1.6525	4.6948	8.8425
1996:05	10.8970	1.6563	4.6949	8.8373
1996:06	10.8900	1.6620	4.6972	8.8374
1996:07	10.8750	1.6864	4.6984	8.8445
1996:08	10.8560	1.6525	4.7000	8.8447
1996:09	10.8380	1.6677	4.7012	8.8436
1996:10	10.8160	1.6563	4.7032	8.8554
1996:11	10.8120	1.6696	4.7032	8.8577
1996:12	10.8180	1.6658	4.7043	8.8486

Data used in / Données utilisées dans_

Jean-Marie Dufour, Denis Pelletier and Eric Renault (2001), “Short run and long run causality in time series : inference ”, 24 pages.

Source_

B.S. Bernanke and I. Mihov, “Measuring Monetary Policy ”, The Quarterly Journal of Economics, vol.113, no 3, 869-902. <http://www.princeton.edu/~bernanke/data.htm>.