

čtvrtletí	pořadí	realinvs	$\ln(y_t)$	$\ln(t)$	$\ln^2(t)$	$\ln(t) \cdot \ln(y_t)$
1986Q1	1	886.2	6.78694	0.00000	0.00000	0.00000
1986Q2	2	868.3	6.76654	0.69315	0.48045	4.69021
1986Q3	3	838	6.73102	1.09861	1.20695	7.39478
1986Q4	4	838.2	6.73126	1.38629	1.92181	9.33150
1987Q1	5	863.4	6.76088	1.60944	2.59029	10.88121
1987Q2	6	863.9	6.76146	1.79176	3.21040	12.11490
1987Q3	7	860.5	6.75751	1.94591	3.78657	13.14951
1987Q4	8	929.3	6.83443	2.07944	4.32408	14.21180
1988Q1	9	884.6	6.78514	2.19722	4.82780	14.90847
1988Q2	10	902.5	6.80517	2.30259	5.30190	15.66948
1988Q3	11	907.5	6.81069	2.39790	5.74990	16.33133
1988Q4	12	916.7	6.82078	2.48491	6.17476	16.94900
1989Q1	13	952.7	6.85930	2.56495	6.57897	17.59376
1989Q2	14	941.1	6.84705	2.63906	6.96462	18.06976
1989Q3	15	929.3	6.83443	2.70805	7.33354	18.50798
1989Q4	16	922.9	6.82752	2.77259	7.68725	18.92991
1990Q1	17	934	6.83948	2.83321	8.02710	19.37770
1990Q2	18	933	6.83841	2.89037	8.35425	19.76553
1990Q3	19	912.6	6.81630	2.94444	8.66972	20.07017
1990Q4	20	849.6	6.74477	2.99573	8.97441	20.20551
1991Q1	21	815.1	6.70331	3.04452	9.26912	20.40838
1991Q2	22	808.8	6.69555	3.09104	9.55454	20.69623
1991Q3	23	829.8	6.72118	3.13549	9.83132	21.07424
1991Q4	24	864.2	6.76180	3.17805	10.10003	21.48938
1992Q1	25	843.8	6.73792	3.21888	10.36116	21.68851
1992Q2	26	901.8	6.80439	3.25810	10.61519	22.16937
1992Q3	27	912.1	6.81575	3.29584	10.86254	22.46360
1992Q4	28	941.6	6.84758	3.33220	11.10359	22.81754
1993Q1	29	964.8	6.87192	3.36730	11.33868	23.13979
1993Q2	30	967	6.87420	3.40120	11.56814	23.38051
1993Q3	31	964.1	6.87120	3.43399	11.79227	23.59560
1993Q4	32	1015.6	6.92323	3.46574	12.01133	23.99410
1994Q1	33	1057.3	6.96347	3.49651	12.22557	24.34784
1994Q2	34	1118.5	7.01974	3.52636	12.43522	24.75415
1994Q3	35	1101.8	7.00470	3.55535	12.64050	24.90415
1994Q4	36	1150.5	7.04795	3.58352	12.84161	25.25647
1995Q1	37	1162.4	7.05824	3.61092	13.03873	25.48673
1995Q2	38	1128.5	7.02864	3.63759	13.23203	25.56730
1995Q3	39	1119.1	7.02028	3.66356	13.42168	25.71923
1995Q4	40	1152.4	7.04960	3.68888	13.60783	26.00513
1996Q1	41	1172.3	7.06672	3.71357	13.79062	26.24278
1996Q2	42	1233.4	7.11753	3.73767	13.97017	26.60298
1996Q3	43	1281.4	7.15571	3.76120	14.14663	26.91405
1996Q4	44	1283.7	7.15750	3.78419	14.32009	27.08534

1997Q1	45	1325.4	7.18947	3.80666	14.49068	27.36788
1997Q2	46	1400.6	7.24466	3.82864	14.65849	27.73719
1997Q3	47	1408.6	7.25035	3.85015	14.82364	27.91492
1997Q4	48	1438.5	7.27136	3.87120	14.98620	28.14888
1998Q1	49	1543.3	7.34168	3.89182	15.14627	28.57249
1998Q2	50	1516.8	7.32436	3.91202	15.30392	28.65306
1998Q3	51	1559.7	7.35225	3.93183	15.45925	28.90776
1998Q4	52	1612.1	7.38529	3.95124	15.61233	29.18109
1999Q1	53	1641.8	7.40355	3.97029	15.76322	29.39425
1999Q2	54	1617.4	7.38858	3.98898	15.91199	29.47291
1999Q3	55	1655.8	7.41204	4.00733	16.05872	29.70251
1999Q4	56	1725.4	7.45321	4.02535	16.20346	30.00181
2000Q1	57	1722.9	7.45176	4.04305	16.34626	30.12786
2000Q2	58	1801.6	7.49643	4.06044	16.48720	30.43883
2000Q3	59	1788.8	7.48930	4.07754	16.62631	30.53790
2000Q4	60	1778.3	7.48341	4.09434	16.76366	30.63967
sumace	1653	62892.6	397.7457541	176.3958484	591.007775	1239.13854

$$X'X = \begin{bmatrix} 57 & 176.3958484 \\ 176.39585 & 591.0077751 \end{bmatrix}$$

$$\det(X'X) = 2571.9478$$

$$(X'X)^{-1} = \begin{bmatrix} 0.22979 & -0.06858454 \\ -0.068585 & 0.022162191 \end{bmatrix}$$

$$X'y = \begin{bmatrix} 397.74575 \\ 1239.1385 \end{bmatrix}$$

$$\begin{bmatrix} b_1 \\ b_2 \end{bmatrix} = \begin{bmatrix} 6.412237 \\ 0.1828175 \end{bmatrix} \quad \exp(b_1) = 609.2550544$$

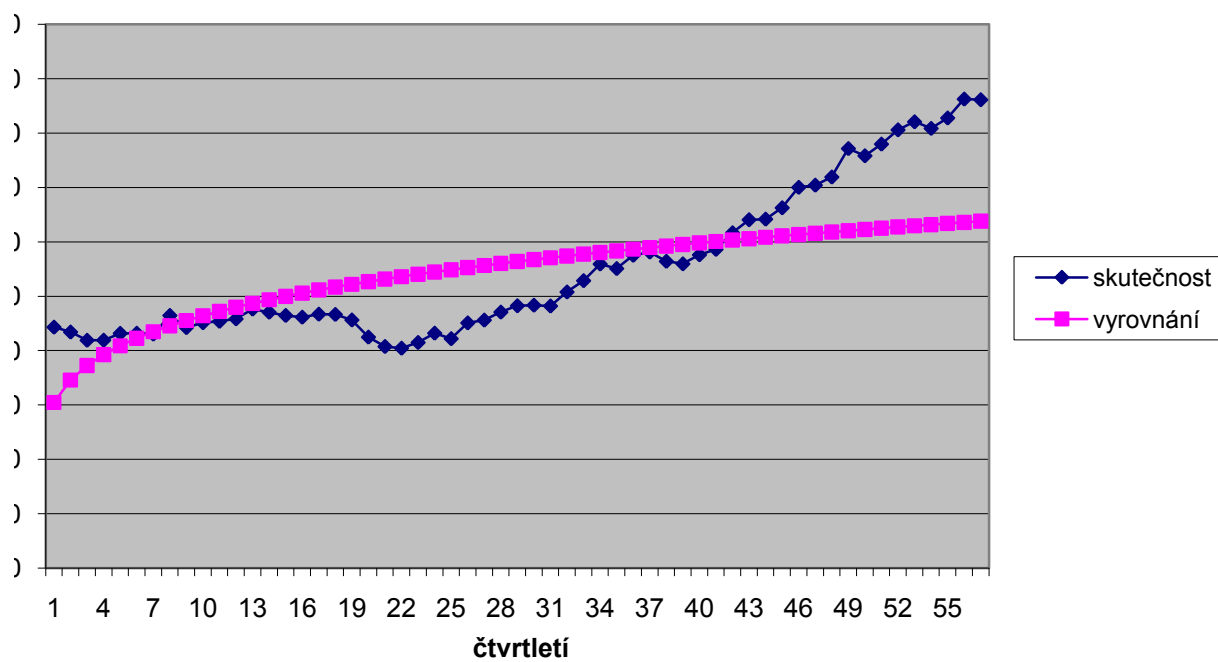
skutečnost	vyrovnání	rezidua	abs.rezidua	rezidua^2	APE	MAPE
886.2	609.3	276.9	277	76699	0.3125	0.185191
868.3	691.6	176.7	177	31235	0.2035	0.113302
838	744.8	93.2	93	8691	0.1112	0.0589
838.2	785.0	53.2	53	2831	0.0635	0.032779
863.4	817.7	45.7	46	2090	0.0530	0.027197
863.9	845.4	18.5	19	342	0.0214	0.010827
860.5	869.6	-9.1	9	82	0.0105	0.005235
929.3	891.0	38.3	38	1463	0.0412	0.021015
884.6	910.4	-25.8	26	668	0.0292	0.014395
902.5	928.1	-25.6	26	658	0.0284	0.01401
907.5	944.5	-37.0	37	1366	0.0407	0.019958
916.7	959.6	-42.9	43	1841	0.0468	0.022867
952.7	973.7	-21.0	21	443	0.0221	0.010927
941.1	987.0	-45.9	46	2110	0.0488	0.023822
929.3	999.6	-70.3	70	4937	0.0756	0.036426
922.9	1011.4	-88.5	89	7837	0.0959	0.045765
934	1022.7	-88.7	89	7867	0.0950	0.04533
933	1033.4	-100.4	100	10088	0.1077	0.051077
912.6	1043.7	-131.1	131	17188	0.1437	0.067017
849.6	1053.5	-203.9	204	41591	0.2400	0.107159
815.1	1063.0	-247.9	248	61443	0.3041	0.131985
808.8	1072.1	-263.3	263	69304	0.3255	0.139966
829.8	1080.8	-251.0	251	63003	0.3025	0.131374
864.2	1089.2	-225.0	225	50646	0.2604	0.115205
843.8	1097.4	-253.6	254	64316	0.3006	0.130643
901.8	1105.3	-203.5	204	41413	0.2257	0.101391
912.1	1113.0	-200.9	201	40343	0.2202	0.099185
941.6	1120.4	-178.8	179	31962	0.1899	0.086703
964.8	1127.6	-162.8	163	26500	0.1687	0.077801
967	1134.6	-167.6	168	28090	0.1733	0.079749
964.1	1141.4	-177.3	177	31443	0.1839	0.084217
1015.6	1148.1	-132.5	132	17547	0.1304	0.061223
1057.3	1154.5	-97.2	97	9456	0.0920	0.043965
1118.5	1160.9	-42.4	42	1794	0.0379	0.018585
1101.8	1167.0	-65.2	65	4255	0.0592	0.02875
1150.5	1173.1	-22.6	23	509	0.0196	0.009707
1162.4	1178.9	-16.5	17	274	0.0142	0.007067
1128.5	1184.7	-56.2	56	3159	0.0498	0.024299
1119.1	1190.3	-71.2	71	5076	0.0637	0.03085
1152.4	1195.9	-43.5	43	1890	0.0377	0.018511
1172.3	1201.3	-29.0	29	840	0.0247	0.012209
1233.4	1206.6	26.8	27	719	0.0217	0.01099
1281.4	1211.8	69.6	70	4846	0.0543	0.027922
1283.7	1216.9	66.8	67	4464	0.0520	0.026718

200C
180C
160C
140C
120C
100C
80C
60C
40C
20C
C

1325.4	1221.9	103.5	104	10712	0.0781	0.040632
1400.6	1226.8	173.8	174	30200	0.1241	0.066142
1408.6	1231.7	176.9	177	31311	0.1256	0.06702
1438.5	1236.4	202.1	202	40844	0.1405	0.075554
1543.3	1241.1	302.2	302	91343	0.1958	0.108545
1516.8	1245.7	271.1	271	73515	0.1788	0.09815
1559.7	1250.2	309.5	310	95802	0.1984	0.110154
1612.1	1254.6	357.5	357	127787	0.2217	0.124697
1641.8	1259.0	382.8	383	146533	0.2332	0.131962
1617.4	1263.3	354.1	354	125378	0.2189	0.122916
1655.8	1267.6	388.2	388	150732	0.2345	0.132807
1725.4	1271.7	453.7	454	205807	0.2629	0.151364
1722.9	1275.9	447.0	447	199843	0.2595	0.149074
1801.6	1279.9	521.7	522	272145	0.2896	0.169291
1788.8	1283.9	504.9	505	254892	0.2822	0.164306
1778.3	1287.9	490.4	490	240509	0.2758	0.159944
62892.6	61902.5476	990.1	8586.6	2.1131E+06	0.1329	0.0665

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vyrovnání mocninným trendem



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čtvrtletí	pořadí	realinvs	t^2	t^3	t^4	t^*y_t
1986Q1	1	886.2	1	1	1	886.2
1986Q2	2	868.3	4	8	16	1736.6
1986Q3	3	838	9	27	81	2514
1986Q4	4	838.2	16	64	256	3352.8
1987Q1	5	863.4	25	125	625	4317
1987Q2	6	863.9	36	216	1296	5183.4
1987Q3	7	860.5	49	343	2401	6023.5
1987Q4	8	929.3	64	512	4096	7434.4
1988Q1	9	884.6	81	729	6561	7961.4
1988Q2	10	902.5	100	1000	10000	9025
1988Q3	11	907.5	121	1331	14641	9982.5
1988Q4	12	916.7	144	1728	20736	11000.4
1989Q1	13	952.7	169	2197	28561	12385.1
1989Q2	14	941.1	196	2744	38416	13175.4
1989Q3	15	929.3	225	3375	50625	13939.5
1989Q4	16	922.9	256	4096	65536	14766.4
1990Q1	17	934	289	4913	83521	15878
1990Q2	18	933	324	5832	104976	16794
1990Q3	19	912.6	361	6859	130321	17339.4
1990Q4	20	849.6	400	8000	160000	16992
1991Q1	21	815.1	441	9261	194481	17117.1
1991Q2	22	808.8	484	10648	234256	17793.6
1991Q3	23	829.8	529	12167	279841	19085.4
1991Q4	24	864.2	576	13824	331776	20740.8
1992Q1	25	843.8	625	15625	390625	21095
1992Q2	26	901.8	676	17576	456976	23446.8
1992Q3	27	912.1	729	19683	531441	24626.7
1992Q4	28	941.6	784	21952	614656	26364.8
1993Q1	29	964.8	841	24389	707281	27979.2
1993Q2	30	967	900	27000	810000	29010
1993Q3	31	964.1	961	29791	923521	29887.1
1993Q4	32	1015.6	1024	32768	1048576	32499.2
1994Q1	33	1057.3	1089	35937	1185921	34890.9
1994Q2	34	1118.5	1156	39304	1336336	38029
1994Q3	35	1101.8	1225	42875	1500625	38563
1994Q4	36	1150.5	1296	46656	1679616	41418
1995Q1	37	1162.4	1369	50653	1874161	43008.8
1995Q2	38	1128.5	1444	54872	2085136	42883
1995Q3	39	1119.1	1521	59319	2313441	43644.9
1995Q4	40	1152.4	1600	64000	2560000	46096
1996Q1	41	1172.3	1681	68921	2825761	48064.3
1996Q2	42	1233.4	1764	74088	3111696	51802.8
1996Q3	43	1281.4	1849	79507	3418801	55100.2

1996Q4	44	1283.7	1936	85184	3748096	56482.8
1997Q1	45	1325.4	2025	91125	4100625	59643
1997Q2	46	1400.6	2116	97336	4477456	64427.6
1997Q3	47	1408.6	2209	103823	4879681	66204.2
1997Q4	48	1438.5	2304	110592	5308416	69048
1998Q1	49	1543.3	2401	117649	5764801	75621.7
1998Q2	50	1516.8	2500	125000	6250000	75840
1998Q3	51	1559.7	2601	132651	6765201	79544.7
1998Q4	52	1612.1	2704	140608	7311616	83829.2
1999Q1	53	1641.8	2809	148877	7890481	87015.4
1999Q2	54	1617.4	2916	157464	8503056	87339.6
1999Q3	55	1655.8	3025	166375	9150625	91069
1999Q4	56	1725.4	3136	175616	9834496	96622.4
2000Q1	57	1722.9	3249	185193	10556001	98205.3
2000Q2	58	1801.6	3364	195112	11316496	104492.8
2000Q3	59	1788.8	3481	205379	12117361	105539.2
2000Q4	60	1778.3	3600	216000	12960000	106698
sumace	1653	62892.6	63365	2732409	125678141	2054726.5

$X'X =$

$\text{adj}(X'X) =$

$\det(X'X) =$

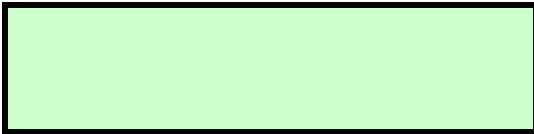
$(X'X)^{-1} =$

$X'y =$

b0	814.649	spočteno GRETlem
b1	23.183	spočteno GRETlem
b2	-2.01579	spočteno GRETlem
b3	0.062113	spočteno GRETlem
b4	-0.000508053	spočteno GRETlem

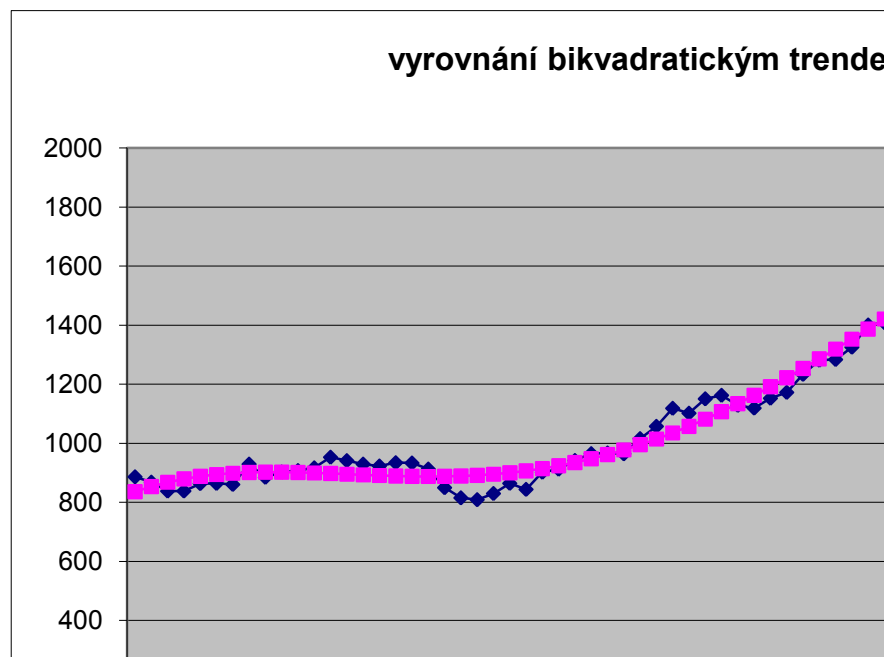
$t^2 \cdot y_t$	skutečnost	vyrovnání	rezidua	abs.rezidua	rezidua ²
886.2	886.2	835.9	50.3	50.322	2532.322
3473.2	868.3	853.4	14.9	14.859	220.801
7542	838	867.7	-29.7	29.692	881.602
13411.2	838.2	879.0	-40.8	40.774	1662.481
21585	863.4	887.6	-24.2	24.216	586.407
31100.4	863.9	893.9	-30.0	30.037	902.193
42164.5	860.5	898.2	-37.7	37.741	1424.399
59475.2	929.3	900.8	28.5	28.477	810.922
71652.6	884.6	902.0	-17.4	17.364	301.510
90250	902.5	901.9	0.6	0.568	0.322
109807.5	907.5	901.0	6.5	6.515	42.440
132004.8	916.7	899.4	17.3	17.332	300.415
161006.3	952.7	897.3	55.4	55.389	3067.914
184455.6	941.1	895.0	46.1	46.063	2121.812
209092.5	929.3	892.8	36.5	36.548	1335.724
236262.4	922.9	890.7	32.2	32.246	1039.814
269926	934	888.9	45.1	45.075	2031.777
302292	933	887.7	45.3	45.263	2048.768
329448.6	912.6	887.2	25.4	25.351	642.678
339840	849.6	887.6	-38.0	38.009	1444.648
359459.1	815.1	889.0	-73.9	73.850	5453.889
391459.2	808.8	891.4	-82.6	82.597	6822.331
438964.2	829.8	895.1	-65.3	65.260	4258.855
497779.2	864.2	900.0	-35.8	35.836	1284.239
527375	843.8	906.4	-62.6	62.613	3920.347
609616.8	901.8	914.3	-12.5	12.463	155.327
664920.9	912.1	923.6	-11.5	11.549	133.381
738214.4	941.6	934.6	7.0	6.980	48.715
811396.8	964.8	947.2	17.6	17.586	309.256
870300	967	961.5	5.5	5.544	30.735
926500.1	964.1	977.4	-13.3	13.259	175.790
1039974.4	1015.6	994.9	20.7	20.677	427.553
1151399.7	1057.3	1014.1	43.2	43.163	1863.058
1292986	1118.5	1035.0	83.5	83.522	6975.992
1349705	1101.8	1057.4	44.4	44.391	1970.553
1491048	1150.5	1081.4	69.1	69.117	4777.113
1591325.6	1162.4	1106.8	55.6	55.560	3086.896
1629554	1128.5	1133.7	-5.2	5.207	27.115
1702151.1	1119.1	1161.9	-42.8	42.800	1831.824
1843840	1152.4	1191.3	-38.9	38.921	1514.869
1970636.3	1172.3	1221.9	-49.6	49.563	2456.464
2175717.6	1233.4	1253.4	-20.0	20.003	400.116
2369308.6	1281.4	1285.8	-4.4	4.408	19.435

2485243.2	1283.7	1318.9	-35.2	35.234	1241.430
2683935	1325.4	1352.6	-27.2	27.222	741.012
2963669.6	1400.6	1386.7	13.9	13.899	193.172
3111597.4	1408.6	1421.0	-12.4	12.391	153.545
3314304	1438.5	1455.3	-16.8	16.797	282.141
3705463.3	1543.3	1489.4	53.9	53.888	2903.905
3792000	1516.8	1523.1	-6.3	6.318	39.914
4056779.7	1559.7	1556.2	3.5	3.517	12.369
4359118.4	1612.1	1588.4	23.7	23.735	563.345
4611816.2	1641.8	1619.4	22.4	22.392	501.382
4716338.4	1617.4	1649.0	-31.6	31.646	1001.449
5008795	1655.8	1677.0	-21.2	21.197	449.319
5410854.4	1725.4	1703.0	22.4	22.429	503.061
5597702.1	1722.9	1726.7	-3.8	3.763	14.161
104492.8	1801.6	1747.8	53.8	53.843	2899.031
105539.2	1788.8	1765.9	22.9	22.875	523.255
106698	1778.3	1780.8	-2.5	2.526	6.381
84876924.7	62892.6	62892.9223	-0.32229753	1781.1353	7.9943E+04

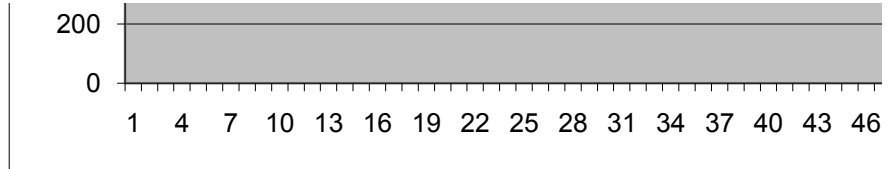


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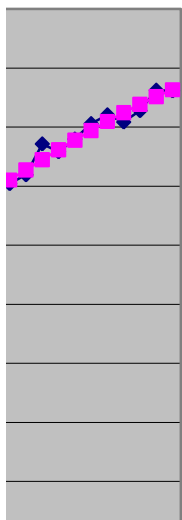
APE	MAPE
0.057	0.058
0.017	0.017
0.035	0.035
0.049	0.047
0.028	0.028
0.035	0.034
0.044	0.043
0.031	0.031
0.020	0.019
0.001	0.001
0.007	0.007
0.019	0.019
0.058	0.060
0.049	0.050
0.039	0.040
0.035	0.036
0.048	0.049
0.049	0.050
0.028	0.028
0.045	0.044
0.091	0.087
0.102	0.097
0.079	0.076
0.041	0.041
0.074	0.072
0.014	0.014
0.013	0.013
0.007	0.007
0.018	0.018
0.006	0.006
0.014	0.014
0.020	0.021
0.041	0.042
0.075	0.078
0.040	0.041
0.060	0.062
0.048	0.049
0.005	0.005
0.038	0.038
0.034	0.033
0.042	0.041
0.016	0.016
0.003	0.003



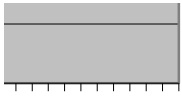
0.027	0.027
0.021	0.020
0.010	0.010
0.009	0.009
0.012	0.012
0.035	0.036
0.004	0.004
0.002	0.002
0.015	0.015
0.014	0.014
0.020	0.019
0.013	0.013
0.013	0.013
0.002	0.002
0.030	0.030
0.013	0.013
0.001	0.001
0.0310	0.0309



em



—◆— skutečnost
—■— vyrovnání



49 52 55

čtvrtletí	pořadí	realinvs	t^2	t^3	t^4	t^*y_t
1986Q1	1	886.2	1	1	1	886.2
1986Q2	2	868.3	4	8	16	1736.6
1986Q3	3	838	9	27	81	2514
1986Q4	4	838.2	16	64	256	3352.8
1987Q1	5	863.4	25	125	625	4317
1987Q2	6	863.9	36	216	1296	5183.4
1987Q3	7	860.5	49	343	2401	6023.5
1987Q4	8	929.3	64	512	4096	7434.4
1988Q1	9	884.6	81	729	6561	7961.4
1988Q2	10	902.5	100	1000	10000	9025
1988Q3	11	907.5	121	1331	14641	9982.5
1988Q4	12	916.7	144	1728	20736	11000.4
1989Q1	13	952.7	169	2197	28561	12385.1
1989Q2	14	941.1	196	2744	38416	13175.4
1989Q3	15	929.3	225	3375	50625	13939.5
1989Q4	16	922.9	256	4096	65536	14766.4
1990Q1	17	934	289	4913	83521	15878
1990Q2	18	933	324	5832	104976	16794
1990Q3	19	912.6	361	6859	130321	17339.4
1990Q4	20	849.6	400	8000	160000	16992
1991Q1	21	815.1	441	9261	194481	17117.1
1991Q2	22	808.8	484	10648	234256	17793.6
1991Q3	23	829.8	529	12167	279841	19085.4
1991Q4	24	864.2	576	13824	331776	20740.8
1992Q1	25	843.8	625	15625	390625	21095
1992Q2	26	901.8	676	17576	456976	23446.8
1992Q3	27	912.1	729	19683	531441	24626.7
1992Q4	28	941.6	784	21952	614656	26364.8
1993Q1	29	964.8	841	24389	707281	27979.2
1993Q2	30	967	900	27000	810000	29010
1993Q3	31	964.1	961	29791	923521	29887.1
1993Q4	32	1015.6	1024	32768	1048576	32499.2
1994Q1	33	1057.3	1089	35937	1185921	34890.9
1994Q2	34	1118.5	1156	39304	1336336	38029
1994Q3	35	1101.8	1225	42875	1500625	38563
1994Q4	36	1150.5	1296	46656	1679616	41418
1995Q1	37	1162.4	1369	50653	1874161	43008.8
1995Q2	38	1128.5	1444	54872	2085136	42883
1995Q3	39	1119.1	1521	59319	2313441	43644.9
1995Q4	40	1152.4	1600	64000	2560000	46096
1996Q1	41	1172.3	1681	68921	2825761	48064.3
1996Q2	42	1233.4	1764	74088	3111696	51802.8
1996Q3	43	1281.4	1849	79507	3418801	55100.2

1996Q4	44	1283.7	1936	85184	3748096	56482.8
1997Q1	45	1325.4	2025	91125	4100625	59643
1997Q2	46	1400.6	2116	97336	4477456	64427.6
1997Q3	47	1408.6	2209	103823	4879681	66204.2
1997Q4	48	1438.5	2304	110592	5308416	69048
1998Q1	49	1543.3	2401	117649	5764801	75621.7
1998Q2	50	1516.8	2500	125000	6250000	75840
1998Q3	51	1559.7	2601	132651	6765201	79544.7
1998Q4	52	1612.1	2704	140608	7311616	83829.2
1999Q1	53	1641.8	2809	148877	7890481	87015.4
1999Q2	54	1617.4	2916	157464	8503056	87339.6
1999Q3	55	1655.8	3025	166375	9150625	91069
1999Q4	56	1725.4	3136	175616	9834496	96622.4
2000Q1	57	1722.9	3249	185193	10556001	98205.3
2000Q2	58	1801.6	3364	195112	11316496	
2000Q3	59	1788.8	3481	205379	12117361	
2000Q4	60	1778.3	3600	216000	12960000	
sumace	1653	62892.6	63365	2732409	125678141	2054726.5

$X'X =$

$adj(X'X) =$

$\det(X'X) =$

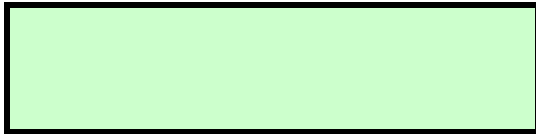
$(X'X)^{-1} =$

$X'y =$

b1	905.551	spočteno GRETlem
b2	-5.89263	spočteno GRETlem
b3	0.194601	spočteno GRETlem
b4	0.00317882	spočteno GRETlem

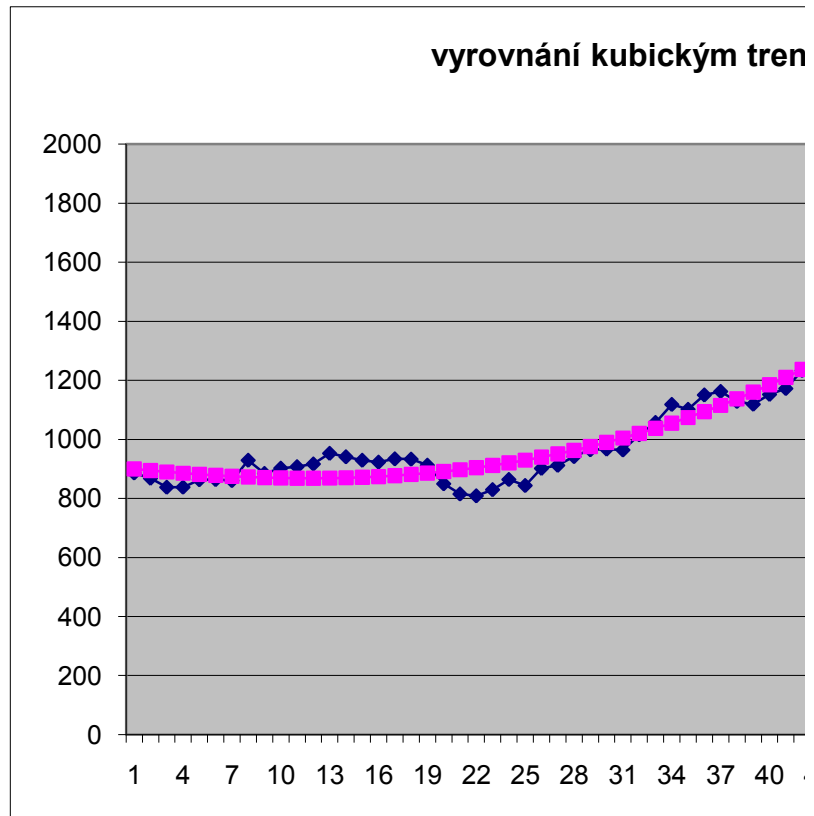
$t^2 \cdot y_t$	skutečnost	vyrovnání	rezidua	abs.rezidua	rezidua ²
886.2	886.2	899.9	-13.656	13.656	186.490
3473.2	868.3	894.6	-26.270	26.270	690.091
7542	838	889.7	-51.710	51.710	2673.960
13411.2	838.2	885.3	-47.098	47.098	2218.178
21585	863.4	881.4	-17.950	17.950	322.211
31100.4	863.9	877.9	-13.987	13.987	195.650
42164.5	860.5	874.9	-14.428	14.428	208.178
59475.2	929.3	872.5	56.808	56.808	3227.151
71652.6	884.6	870.6	14.003	14.003	196.074
90250	902.5	869.3	33.236	33.236	1104.657
109807.5	907.5	868.5	38.990	38.990	1520.236
132004.8	916.7	868.4	48.345	48.345	2337.240
161006.3	952.7	868.8	83.882	83.882	7036.149
184455.6	941.1	869.9	71.181	71.181	5066.783
209092.5	929.3	871.7	57.625	57.625	3320.607
236262.4	922.9	874.1	48.793	48.793	2380.735
269926	934	877.2	56.766	56.766	3222.433
302292	933	881.1	51.927	51.927	2696.386
329448.6	912.6	885.6	26.954	26.954	726.544
339840	849.6	891.0	-41.369	41.369	1711.424
359459.1	815.1	897.1	-81.964	81.964	6718.075
391459.2	808.8	903.9	-95.148	95.148	9053.161
438964.2	829.8	911.6	-81.841	81.841	6697.973
497779.2	864.2	920.2	-55.962	55.962	3131.753
527375	843.8	929.5	-85.730	85.730	7349.622
609616.8	901.8	939.8	-37.964	37.964	1441.253
664920.9	912.1	950.9	-38.783	38.783	1504.108
738214.4	941.6	962.9	-21.306	21.306	453.946
811396.8	964.8	975.9	-11.052	11.052	122.156
870300	967	989.7	-22.741	22.741	517.159
926500.1	964.1	1004.6	-40.491	40.491	1639.542
1039974.4	1015.6	1020.4	-4.822	4.822	23.250
1151399.7	1057.3	1037.3	20.048	20.048	401.924
1292986	1118.5	1055.1	63.399	63.399	4019.474
1349705	1101.8	1074.0	27.813	27.813	773.558
1491048	1150.5	1093.9	56.570	56.570	3200.138
1591325.6	1162.4	1114.9	47.451	47.451	2251.576
1629554	1128.5	1137.1	-8.563	8.563	73.327
1702151.1	1119.1	1160.3	-41.191	41.191	1696.696
1843840	1152.4	1184.7	-32.252	32.252	1040.184
1970636.3	1172.3	1210.2	-37.865	37.865	1433.751
2175717.6	1233.4	1236.8	-3.449	3.449	11.896
2369308.6	1281.4	1264.7	16.676	16.676	278.102

2485243.2	1283.7	1293.8	-10.107	10.107	102.160
2683935	1325.4	1324.1	1.280	1.280	1.639
2963669.6	1400.6	1355.7	44.921	44.921	2017.864
3111597.4	1408.6	1388.5	20.094	20.094	403.784
3314304	1438.5	1422.6	15.882	15.882	252.253
3705463.3	1543.3	1458.0	85.266	85.266	7270.269
3792000	1516.8	1494.8	22.026	22.026	485.123
4056779.7	1559.7	1532.9	26.842	26.842	720.508
4359118.4	1612.1	1572.3	39.797	39.797	1583.812
4611816.2	1641.8	1613.1	28.671	28.671	822.026
4716338.4	1617.4	1655.4	-37.955	37.955	1440.598
5008795	1655.8	1699.0	-43.201	43.201	1866.288
5410854.4	1725.4	1744.1	-18.684	18.684	349.096
5597702.1	1722.9	1790.6	-67.725	67.725	4586.669
104492.8	1801.6	1838.6	-37.042	37.042	1372.121
105539.2	1788.8	1888.2	-99.355	99.355	9871.373
106698	1778.3	1939.2	-160.882	160.882	25882.992
84876924.7	62892.6	62892.618	-0.01835238	2210.5	1.1678E+05



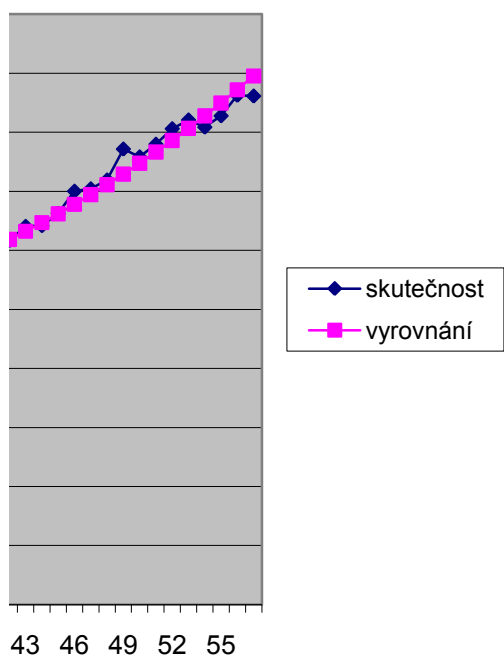
THEILovoU 0.09374

APE	MAPE
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0.030	0.015
0.062	0.030
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0.021	0.010
0.016	0.008
0.017	0.008
0.061	0.032
0.016	0.008
0.037	0.019
0.043	0.022
0.053	0.027
0.088	0.046
0.076	0.039
0.062	0.032
0.053	0.027
0.061	0.031
0.056	0.029
0.030	0.015
0.049	0.024
0.101	0.048
0.118	0.056
0.099	0.047
0.065	0.031
0.102	0.048
0.042	0.021
0.043	0.021
0.023	0.011
0.011	0.006
0.024	0.012
0.042	0.021
0.005	0.002
0.019	0.010
0.057	0.029
0.025	0.013
0.049	0.025
0.041	0.021
0.008	0.004
0.037	0.018
0.028	0.014
0.032	0.016
0.003	0.001
0.013	0.007



0.008	0.004
0.001	0.000
0.032	0.016
0.014	0.007
0.011	0.006
0.055	0.028
0.015	0.007
0.017	0.009
0.025	0.012
0.017	0.009
0.023	0.012
0.026	0.013
0.011	0.005
0.039	0.019
0.021	0.010
0.056	0.027
0.090	0.043
0.038	0.019

idem



čtvrtletí	pořadí	realinvs	t ²	t ³	t ⁴	t*yt
1986Q1	1	886.2	1	1	1	886.2
1986Q2	2	868.3	4	8	16	1736.6
1986Q3	3	838	9	27	81	2514
1986Q4	4	838.2	16	64	256	3352.8
1987Q1	5	863.4	25	125	625	4317
1987Q2	6	863.9	36	216	1296	5183.4
1987Q3	7	860.5	49	343	2401	6023.5
1987Q4	8	929.3	64	512	4096	7434.4
1988Q1	9	884.6	81	729	6561	7961.4
1988Q2	10	902.5	100	1000	10000	9025
1988Q3	11	907.5	121	1331	14641	9982.5
1988Q4	12	916.7	144	1728	20736	11000.4
1989Q1	13	952.7	169	2197	28561	12385.1
1989Q2	14	941.1	196	2744	38416	13175.4
1989Q3	15	929.3	225	3375	50625	13939.5
1989Q4	16	922.9	256	4096	65536	14766.4
1990Q1	17	934	289	4913	83521	15878
1990Q2	18	933	324	5832	104976	16794
1990Q3	19	912.6	361	6859	130321	17339.4
1990Q4	20	849.6	400	8000	160000	16992
1991Q1	21	815.1	441	9261	194481	17117.1
1991Q2	22	808.8	484	10648	234256	17793.6
1991Q3	23	829.8	529	12167	279841	19085.4
1991Q4	24	864.2	576	13824	331776	20740.8
1992Q1	25	843.8	625	15625	390625	21095
1992Q2	26	901.8	676	17576	456976	23446.8
1992Q3	27	912.1	729	19683	531441	24626.7
1992Q4	28	941.6	784	21952	614656	26364.8
1993Q1	29	964.8	841	24389	707281	27979.2
1993Q2	30	967	900	27000	810000	29010
1993Q3	31	964.1	961	29791	923521	29887.1
1993Q4	32	1015.6	1024	32768	1048576	32499.2
1994Q1	33	1057.3	1089	35937	1185921	34890.9
1994Q2	34	1118.5	1156	39304	1336336	38029
1994Q3	35	1101.8	1225	42875	1500625	38563
1994Q4	36	1150.5	1296	46656	1679616	41418
1995Q1	37	1162.4	1369	50653	1874161	43008.8
1995Q2	38	1128.5	1444	54872	2085136	42883
1995Q3	39	1119.1	1521	59319	2313441	43644.9
1995Q4	40	1152.4	1600	64000	2560000	46096
1996Q1	41	1172.3	1681	68921	2825761	48064.3
1996Q2	42	1233.4	1764	74088	3111696	51802.8
1996Q3	43	1281.4	1849	79507	3418801	55100.2
1996Q4	44	1283.7	1936	85184	3748096	56482.8

1997Q1	45	1325.4	2025	91125	4100625	59643
1997Q2	46	1400.6	2116	97336	4477456	64427.6
1997Q3	47	1408.6	2209	103823	4879681	66204.2
1997Q4	48	1438.5	2304	110592	5308416	69048
1998Q1	49	1543.3	2401	117649	5764801	75621.7
1998Q2	50	1516.8	2500	125000	6250000	75840
1998Q3	51	1559.7	2601	132651	6765201	79544.7
1998Q4	52	1612.1	2704	140608	7311616	83829.2
1999Q1	53	1641.8	2809	148877	7890481	87015.4
1999Q2	54	1617.4	2916	157464	8503056	87339.6
1999Q3	55	1655.8	3025	166375	9150625	91069
1999Q4	56	1725.4	3136	175616	9834496	96622.4
2000Q1	57	1722.9	3249	185193	10556001	98205.3
2000Q2	58	1801.6	3364	195112	11316496	
2000Q3	59	1788.8	3481	205379	12117361	
2000Q4	60	1778.3	3600	216000	12960000	
sumace	1653	62892.6	63365	2732409	125678141	2054726.5

$X'X=$	57	1653	63365
	1653	63365	2732409
	63365	2732409	125678141

$adj(X'X)=$

$det(X'X)$ 2.93506E+12

$(X'X)^{-1}$	0.169514696	-0.011790841	0.000170882
	-0.011790841	0.00107273	-1.73778E-05
	0.000170882	-1.73778E-05	2.99617E-07

$X'y=$	62892.6
	2054726.5
	84876924.7

b1	938.1844498
b2	-12.36471026
b3	0.471158406

$t^2 \cdot y_t$	skutečnost	vyrovnání	rezidua	abs.rezidua	rezidua ²
886.2	886.2	926.3	-40.1	40.091	1607.280
3473.2	868.3	915.3	-47.0	47.040	2212.730
7542	838	905.3	-67.3	67.331	4533.429
13411.2	838.2	896.3	-58.1	58.064	3371.445
21585	863.4	888.1	-24.7	24.740	612.061
31100.4	863.9	881.0	-17.1	17.058	290.972
42164.5	860.5	874.7	-14.2	14.218	202.158
59475.2	929.3	869.4	59.9	59.879	3585.506
71652.6	884.6	865.1	19.5	19.534	381.582
90250	902.5	861.7	40.8	40.847	1668.462
109807.5	907.5	859.2	48.3	48.317	2334.551
132004.8	916.7	857.7	59.0	59.045	3486.343
161006.3	952.7	857.1	95.6	95.631	9145.291
184455.6	941.1	857.4	83.7	83.674	7001.413
209092.5	929.3	858.7	70.6	70.576	4980.910
236262.4	922.9	861.0	61.9	61.934	3835.865
269926	934	864.1	69.9	69.851	4879.141
302292	933	868.3	64.7	64.725	4189.327
329448.6	912.6	873.3	39.3	39.257	1541.101
339840	849.6	879.4	-29.8	29.754	885.277
359459.1	815.1	886.3	-71.2	71.206	5070.350
391459.2	808.8	894.2	-85.4	85.401	7293.415
438964.2	829.8	903.0	-73.2	73.239	5363.938
497779.2	864.2	912.8	-48.6	48.619	2363.773
527375	843.8	923.5	-79.7	79.741	6358.579
609616.8	901.8	935.2	-33.4	33.405	1115.898
664920.9	912.1	947.8	-35.7	35.712	1275.329
738214.4	941.6	961.4	-19.8	19.761	390.487
811396.8	964.8	975.9	-11.1	11.052	122.148
870300	967	991.3	-24.3	24.286	589.796
926500.1	964.1	1007.7	-43.6	43.562	1897.618
1039974.4	1015.6	1025.0	-9.4	9.380	87.983
1151399.7	1057.3	1043.2	14.1	14.059	197.669
1292986	1118.5	1062.4	56.1	56.057	3142.340
1349705	1101.8	1082.6	19.2	19.211	369.076
1491048	1150.5	1103.7	46.8	46.824	2192.471
1591325.6	1162.4	1125.7	36.7	36.694	1346.448
1629554	1128.5	1148.7	-20.2	20.178	407.160
1702151.1	1119.1	1172.6	-53.5	53.493	2861.467
1843840	1152.4	1197.4	-45.0	45.049	2029.457
1970636.3	1172.3	1223.2	-50.9	50.949	2595.761
2175717.6	1233.4	1250.0	-16.6	16.590	275.230
2369308.6	1281.4	1277.7	3.7	3.726	13.885
2485243.2	1283.7	1306.3	-22.6	22.600	510.754

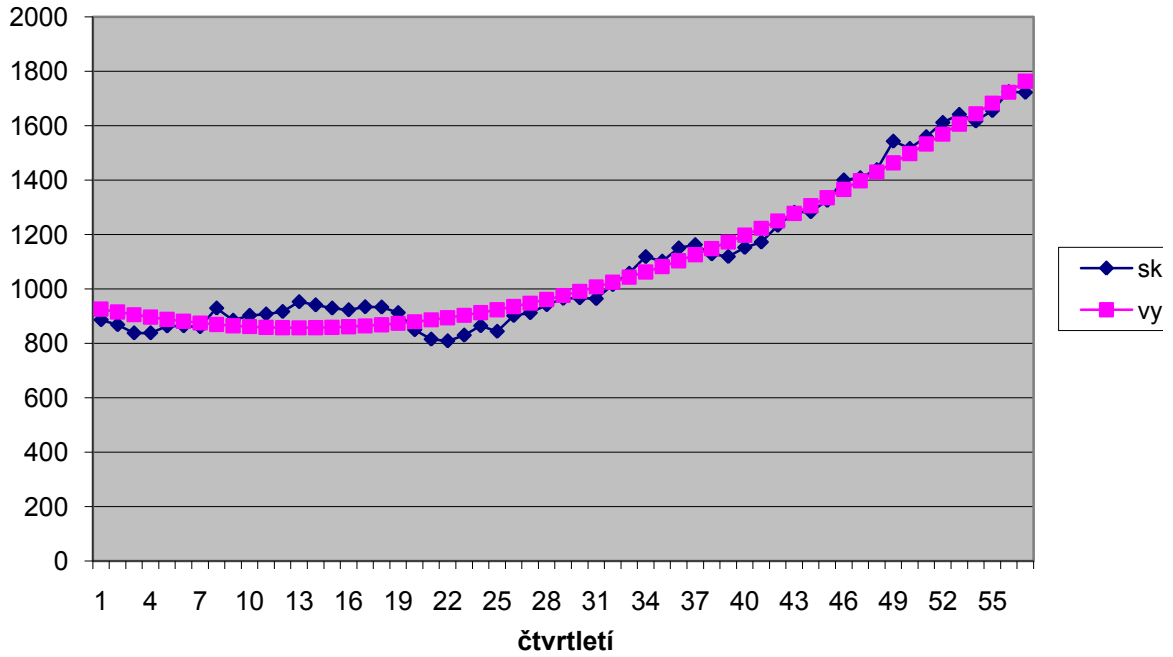
2683935	1325.4	1335.9	-10.5	10.468	109.584
2963669.6	1400.6	1366.4	34.2	34.221	1171.079
3111597.4	1408.6	1397.8	10.8	10.768	115.950
3314304	1438.5	1430.2	8.3	8.273	68.437
3705463.3	1543.3	1463.6	79.7	79.735	6357.673
3792000	1516.8	1497.8	19.0	18.955	359.294
4056779.7	1559.7	1533.1	26.6	26.633	709.304
4359118.4	1612.1	1569.2	42.9	42.868	1837.679
4611816.2	1641.8	1606.3	35.5	35.461	1257.499
4716338.4	1617.4	1644.4	-27.0	26.988	728.353
5008795	1655.8	1683.4	-27.6	27.580	760.632
5410854.4	1725.4	1723.3	2.1	2.087	4.354
5597702.1	1722.9	1764.2	-41.3	41.290	1704.833
104492.8	1801.6	1806.0	-4.4	4.408	19.432
105539.2	1788.8	1848.8	-60.0	59.969	3596.276
106698	1778.3	1892.5	-114.2	114.172	13035.268
84876924.7	62892.6	62892.6	-1.270E-10	2.298E+03	1.238E+05

4.97536E+11	3.461E+10	501548852
34606870788	3.149E+09	51004968
501548852	51004968	879396

THEILovoU	0.09557
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APE	MAPE
0.045	0.022
0.054	0.026
0.080	0.039
0.069	0.033
0.029	0.014
0.020	0.010

vyrovnání kvadratickým trendem



0.037	0.018
0.039	0.019
0.021	0.010
0.011	0.006
0.025	0.012
0.045	0.022
0.009	0.005
0.013	0.007
0.050	0.026
0.017	0.009
0.041	0.021
0.032	0.016
0.018	0.009
0.048	0.023
0.039	0.019
0.043	0.021
0.013	0.007
0.003	0.001
0.018	0.009

0.008	0.004
0.024	0.012
0.008	0.004
0.006	0.003
0.052	0.027
0.012	0.006
0.017	0.009
0.027	0.013
0.022	0.011
0.017	0.008
0.017	0.008
0.001	0.001
0.024	0.012
0.002	0.001
0.034	0.016
0.064	0.031
0.0405	0.0202

utečnost
rovnání

čtvrtletí	pořadí	celk.výdaje	t ²	t*yt
2000Q1	1	5,783	1	5783
2000Q2	2	6,285	4	12570
2000Q3	3	6,417	9	19251
2000Q4	4	6,771	16	27084
2001Q1	5	5,929	25	29645
2001Q2	6	6,506	36	39036
2001Q3	7	6,505	49	45535
2001Q4	8	7,093	64	56744
2002Q1	9	6,156	81	55404
2002Q2	10	6,673	100	66730
2002Q3	11	6,810	121	74910
2002Q4	12	7,205	144	86460
2003Q1	13	6,377	169	82901
2003Q2	14	6,903	196	96642
2003Q3	15	7,050	225	105750
2003Q4	16	7,440	256	119040
2004Q1	17	6,758	289	114886
2004Q2	18	7,132	324	128376
2004Q3	19	7,333	361	139327
2004Q4	20	7,672	400	153440
2005Q1	21	6,881	441	144501
2005Q2	22	7,560	484	166320
2005Q3	23	7,677	529	176571
2005Q4	24	8,041	576	192984
2006Q1	25	7,384	625	184600
2006Q2	26	8,123	676	211198
2006Q3	27	8,285	729	223695
2006Q4	28	8,794	784	246232
2007Q1	29	8,029	841	232841
2007Q2	30	8,685	900	260550
2007Q3	31	8,783	961	272273
2007Q4	32	9,204	1024	294528
2008Q1	33	8,647	1089	285351
2008Q2	34	9,417	1156	320178
2008Q3	35	9,521	1225	333235
2008Q4	36	9,830	1296	353880
2009Q1	37	9,057	1369	335109
2009Q2	38	9,709	1444	368942
2009Q3	39	9,641	1521	375999
2009Q4	40	10,013	1600	400520
2010Q1	41	9,123	1681	374043
2010Q2	42	9,680	1764	406560
2010Q3	43	9,743	1849	418949
2010Q4	44	10,236	1936	450384

skutečnost	vyrovnání
5,783	5808.7
6,285	5905.2
6,417	6001.7
6,771	6098.2
5,929	6194.7
6,506	6291.1
6,505	6387.6
7,093	6484.1
6,156	6580.6
6,673	6677.1
6,810	6773.6
7,205	6870.1
6,377	6966.6
6,903	7063.1
7,050	7159.5
7,440	7256.0
6,758	7352.5
7,132	7449.0
7,333	7545.5
7,672	7642.0
6,881	7738.5
7,560	7835.0
7,677	7931.4
8,041	8027.9
7,384	8124.4
8,123	8220.9
8,285	8317.4
8,794	8413.9
8,029	8510.4
8,685	8606.9
8,783	8703.4
9,204	8799.8
8,647	8896.3
9,417	8992.8
9,521	9089.3
9,830	9185.8
9,057	9282.3
9,709	9378.8
9,641	9475.3
10,013	9571.7
9,123	9668.2
9,680	9764.7
9,743	9861.2
10,236	9957.7

2011Q1	45			0
2011Q2	46			0
2011Q3	47			0
2011Q4	48			0
sumace	990	346861	29370	8488957

	10054.2
	10150.7
	10247.2
	10343.7
346861	356915.191

$X^T X =$	44	990
	990	29370

THEILovoU	0.12890
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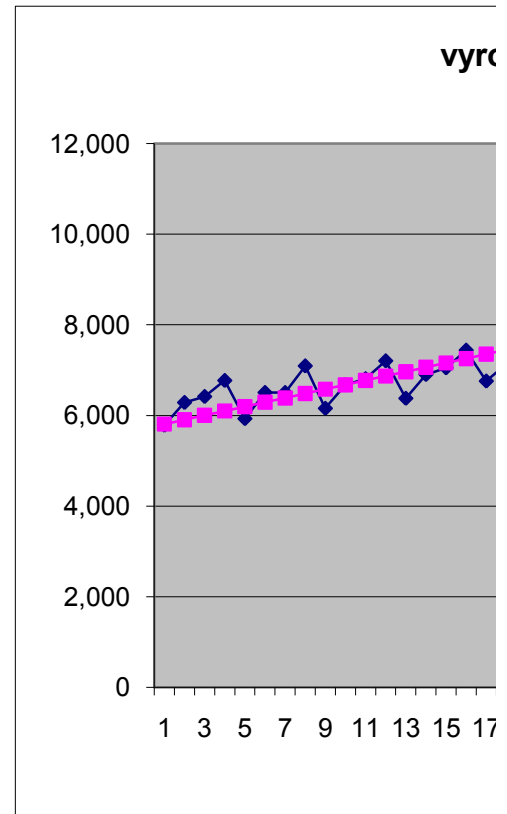
det ($X^T X$)	312180
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$(X^T X)^{-1}$	0.09408	-0.00317
	-0.00317	0.000141

$X^T y =$	346861
	8488957

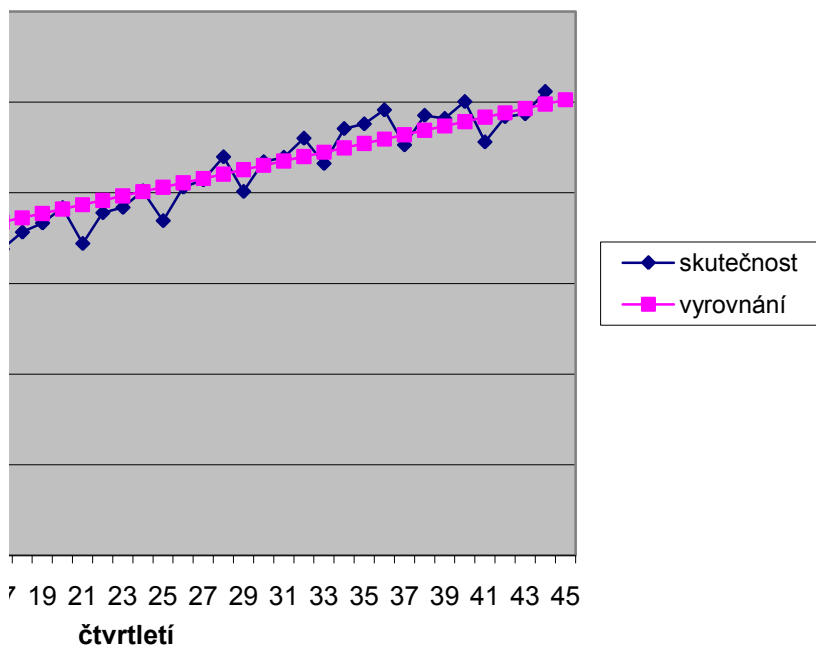
b1	5712.218
b2	96.4883

rezidua	abs.rezidua	rezidua^2	APE	MAPE
-25.7	25.706061	660.801552	0.0044	0.002218
379.8	379.80564	144252.322	0.0604	0.031157
415.3	415.31734	172488.49	0.0647	0.033443
672.8	672.82903	452698.91	0.0994	0.052282
-265.7	265.65927	70574.8462	0.0448	0.021912
214.9	214.85243	46161.5672	0.0330	0.016789
117.4	117.36413	13774.3389	0.0180	0.009103
608.9	608.87583	370729.774	0.0858	0.044846
-424.6	424.61247	180295.753	0.0690	0.033338
-4.1	4.1007752	16.8163572	0.0006	0.000307
36.4	36.410923	1325.75533	0.0053	0.002681
334.9	334.92262	112173.162	0.0465	0.023795
-589.6	589.56568	347587.691	0.0925	0.044184
-160.1	160.05398	25617.2771	0.0232	0.01146
-109.5	109.54228	11999.5118	0.0155	0.007709
184.0	183.96942	33844.7457	0.0247	0.012518
-594.5	594.51889	353452.706	0.0880	0.042133
-317.0	317.00719	100493.557	0.0444	0.021741
-212.5	212.49549	45154.3332	0.0290	0.014282
30.0	30.016209	900.972779	0.0039	0.00196
-857.5	857.47209	735258.39	0.1246	0.058653
-275.0	274.96039	75603.2186	0.0364	0.01786
-254.4	254.4487	64744.139	0.0331	0.016302
13.1	13.063002	170.642024	0.0016	0.000813
-740.4	740.4253	548229.624	0.1003	0.047743
-97.9	97.913601	9587.07329	0.0121	0.005991
-32.4	32.401903	1049.8833	0.0039	0.001952
380.1	380.1098	144483.457	0.0432	0.022089
-481.4	481.37851	231725.266	0.0600	0.029105
78.1	78.133192	6104.79575	0.0090	0.004518
79.6	79.644891	6343.30863	0.0091	0.004555
404.2	404.15659	163342.549	0.0439	0.022448
-249.3	249.33171	62166.3028	0.0288	0.014212
424.2	424.17999	179928.66	0.0450	0.023041
431.7	431.69168	186357.71	0.0453	0.023196
644.2	644.20338	414997.998	0.0655	0.033877
-225.3	225.28492	50753.2947	0.0249	0.012284
330.2	330.22678	109049.726	0.0340	0.0173
165.7	165.73848	27469.243	0.0172	0.00867
441.3	441.25018	194701.718	0.0441	0.02253
-545.2	545.23813	297284.613	0.0598	0.029016
-84.7	84.726427	7178.56744	0.0088	0.004357
-118.2	118.21473	13974.7221	0.0121	0.00603
278.3	278.29697	77449.2033	0.0272	0.013781



-10054.2	10054.191	101086763		1
-10150.7	10150.68	103036297		1
-10247.2	10247.168	105004451		1
-10343.7	10343.656	106991224		1
-10054.2	23384.3	1.0718E+08	0.0306	0.0328

vyrovnání lineárním trendem



čtvrtletí	pořadí	ln(pořadí)	realinvs	ln ² t	t*y _t	skutečnost
1986Q1	1	0	886.2	0	0	886.200
1986Q2	2	0.693147	868.3	0.480453014	601.8597	868.300
1986Q3	3	1.098612	838	1.206948961	920.6371	838.000
1986Q4	4	1.386294	838.2	1.921812056	1161.992	838.200
1987Q1	5	1.609438	863.4	2.590290394	1389.589	863.400
1987Q2	6	1.791759	863.9	3.210401996	1547.901	863.900
1987Q3	7	1.94591	860.5	3.786566308	1674.456	860.500
1987Q4	8	2.079442	929.3	4.324077125	1932.425	929.300
1988Q1	9	2.197225	884.6	4.827795843	1943.665	884.600
1988Q2	10	2.302585	902.5	5.30189811	2078.083	902.500
1988Q3	11	2.397895	907.5	5.749901739	2176.09	907.500
1988Q4	12	2.484907	916.7	6.174761058	2277.914	916.700
1989Q1	13	2.564949	952.7	6.578965206	2443.627	952.700
1989Q2	14	2.639057	941.1	6.964623589	2483.617	941.100
1989Q3	15	2.70805	929.3	7.333535892	2516.591	929.300
1989Q4	16	2.772589	922.9	7.687248223	2558.822	922.900
1990Q1	17	2.833213	934	8.027097853	2646.221	934.000
1990Q2	18	2.890372	933	8.354248899	2696.717	933.000
1990Q3	19	2.944439	912.6	8.669720902	2687.095	912.600
1990Q4	20	2.995732	849.6	8.974411855	2545.174	849.600
1991Q1	21	3.044522	815.1	9.269116874	2481.59	815.100
1991Q2	22	3.091042	808.8	9.554543448	2500.035	808.800
1991Q3	23	3.135494	829.8	9.831323978	2601.833	829.800
1991Q4	24	3.178054	864.2	10.10002615	2746.474	864.200
1992Q1	25	3.218876	843.8	10.36116158	2716.087	843.800
1992Q2	26	3.258097	901.8	10.61519305	2938.151	901.800
1992Q3	27	3.295837	912.1	10.86254065	3006.133	912.100
1992Q4	28	3.332205	941.6	11.1035869	3137.604	941.600
1993Q1	29	3.367296	964.8	11.33868121	3248.767	964.800
1993Q2	30	3.401197	967	11.56814363	3288.958	967.000
1993Q3	31	3.433987	964.1	11.79226812	3310.707	964.100
1993Q4	32	3.465736	1015.6	12.01132535	3519.801	1015.600
1994Q1	33	3.496508	1057.3	12.22556513	3696.857	1057.300
1994Q2	34	3.526361	1118.5	12.43521855	3944.234	1118.500
1994Q3	35	3.555348	1101.8	12.64049984	3917.282	1101.800
1994Q4	36	3.583519	1150.5	12.84160798	4122.839	1150.500
1995Q1	37	3.610918	1162.4	13.03872817	4197.331	1162.400
1995Q2	38	3.637586	1128.5	13.23203307	4105.016	1128.500
1995Q3	39	3.663562	1119.1	13.42168393	4099.892	1119.100
1995Q4	40	3.688879	1152.4	13.60783163	4251.065	1152.400
1996Q1	41	3.713572	1172.3	13.79061749	4353.421	1172.300
1996Q2	42	3.73767	1233.4	13.97017418	4610.042	1233.400
1996Q3	43	3.7612	1281.4	14.14662631	4819.602	1281.400

1996Q4	44	3.78419	1283.7	14.32009119	4857.764	1283.700
1997Q1	45	3.806662	1325.4	14.49067931	5045.35	1325.400
1997Q2	46	3.828641	1400.6	14.65849494	5362.395	1400.600
1997Q3	47	3.850148	1408.6	14.82363655	5423.318	1408.600
1997Q4	48	3.871201	1438.5	14.98619727	5568.723	1438.500
1998Q1	49	3.89182	1543.3	15.14626523	6006.246	1543.300
1998Q2	50	3.912023	1516.8	15.30392399	5933.756	1516.800
1998Q3	51	3.931826	1559.7	15.45925281	6132.468	1559.700
1998Q4	52	3.951244	1612.1	15.61232692	6369.8	1612.100
1999Q1	53	3.970292	1641.8	15.76321788	6518.425	1641.800
1999Q2	54	3.988984	1617.4	15.91199372	6451.783	1617.400
1999Q3	55	4.007333	1655.8	16.05871926	6635.342	1655.800
1999Q4	56	4.025352	1725.4	16.20345623	6945.342	1725.400
2000Q1	57	4.043051	1722.9	16.34626355	6965.773	1722.900
2000Q2	58	4.060443	1801.6	16.48719744	7315.294	1801.600
2000Q3	59	4.077537	1788.8	16.62631161	7293.899	1788.800
2000Q4	60	4.094345	1778.3	16.76365739	7280.973	1778.300
sumace	1653	176.3958	62892.6	591.0077751	204112.7	62892.6

$$X^T X = \begin{bmatrix} 57 & 176.3958484 \\ 176.3958484 & 591.0077751 \end{bmatrix}$$

THEILOvoU

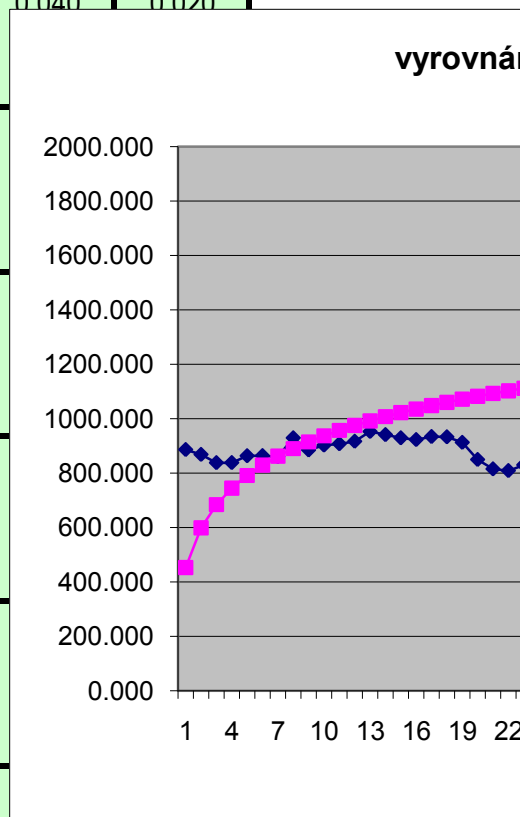
$$\det(X^T X) = 2571.947845$$

$$(X^T X)^{-1} = \begin{bmatrix} 0.22978995 & -0.06858454 \\ -0.06858454 & 0.02216219 \end{bmatrix}$$

$$X^T y = \begin{bmatrix} 62893 \\ 204113 \end{bmatrix}$$

$$\begin{bmatrix} b1 \\ b2 \end{bmatrix} = \begin{bmatrix} 453.114 \\ 210.125 \end{bmatrix}$$

vyrovnání	rezidua	abs.rezidua	rezidua^2	APE	MAPE
453.114	433.086	433.086	187563.494	0.489	0.323
598.761	269.539	269.539	72651.141	0.310	0.184
683.959	154.041	154.041	23728.498	0.184	0.101
744.409	93.791	93.791	8796.845	0.112	0.059
791.296	72.104	72.104	5198.923	0.084	0.044
829.607	34.293	34.293	1176.031	0.040	0.020
861.998	-1.498	1.498	2.243		
890.056	39.244	39.244	1540.111		
914.805	-30.205	30.205	912.334		
936.944	-34.444	34.444	1186.369		
956.971	-49.471	49.471	2447.351		
975.254	-58.554	58.554	3428.564		
992.073	-39.373	39.373	1550.224		
1007.645	-66.545	66.545	4428.209		
1022.142	-92.842	92.842	8619.616		
1035.703	-112.803	112.803	12724.520		
1048.442	-114.442	114.442	13096.911		
1060.452	-127.452	127.452	16244.044		
1071.813	-159.213	159.213	25348.772		
1082.591	-232.991	232.991	54284.787		
1092.843	-277.743	277.743	77141.158		
1102.618	-293.818	293.818	86328.999		
1111.958	-282.158	282.158	79613.350		
1120.901	-256.701	256.701	65895.505		
1129.479	-285.679	285.679	81612.436		
1137.720	-235.920	235.920	55658.312	0.202	0.110
1145.650	-233.550	233.550	54545.747	0.256	0.113
1153.292	-211.692	211.692	44813.522	0.225	0.101
1160.666	-195.866	195.866	38363.331	0.203	0.092
1167.789	-200.789	200.789	40316.280	0.208	0.094
1174.679	-210.579	210.579	44343.553	0.218	0.098
1181.350	-165.750	165.750	27473.153	0.163	0.075
1187.816	-130.516	130.516	17034.466	0.123	0.058
1194.089	-75.589	75.589	5713.696	0.068	0.033
1200.180	-98.380	98.380	9678.622	0.089	0.043
1206.099	-55.599	55.599	3091.291	0.048	0.024
1211.857	-49.457	49.457	2445.953	0.043	0.021
1217.460	-88.960	88.960	7913.923	0.079	0.038
1222.918	-103.818	103.818	10778.244	0.093	0.044
1228.238	-75.838	75.838	5751.435	0.066	0.032
1233.427	-61.127	61.127	3736.478	0.052	0.025
1238.490	-5.090	5.090	25.910	0.004	0.002
1243.435	37.965	37.965	1441.374	0.030	0.015

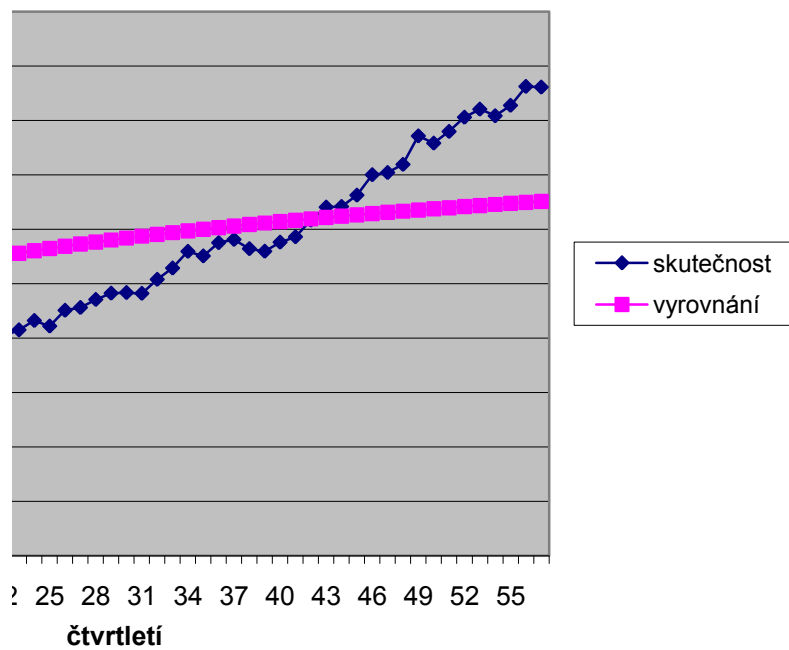


0.202	0.110
0.256	0.113
0.225	0.101
0.203	0.092
0.208	0.094
0.218	0.098
0.163	0.075
0.123	0.058
0.068	0.033
0.089	0.043
0.048	0.024
0.043	0.021
0.079	0.038
0.093	0.044
0.066	0.032
0.052	0.025
0.004	0.002
0.030	0.015

1248.265	35.435	35.435	1255.623	0.028	0.014
1252.987	72.413	72.413	5243.595	0.055	0.028
1257.606	142.994	142.994	20447.389	0.102	0.054
1262.125	146.475	146.475	21455.038	0.104	0.055
1266.548	171.952	171.952	29567.334	0.120	0.064
1270.881	272.419	272.419	74212.071	0.177	0.097
1275.126	241.674	241.674	58406.245	0.159	0.087
1279.287	280.413	280.413	78631.351	0.180	0.099
1283.367	328.733	328.733	108065.125	0.204	0.114
1287.370	354.430	354.430	125620.703	0.216	0.121
1291.298	326.102	326.102	106342.798	0.202	0.112
1295.153	360.647	360.647	130066.136	0.218	0.122
1298.939	426.461	426.461	181868.727	0.247	0.141
1302.658	420.242	420.242	176602.988	0.244	0.139
1306.313	495.287	495.287	245309.361	0.275	0.159
1309.905	478.895	478.895	229340.602	0.268	0.155
1313.436	464.864	464.864	216098.167	0.261	0.150
62892.6	-1.098E-10	9.4289E+03	2.3264E+06	0.1519	0.0757

0.19360

ní logaritmickým trendem



<i>čtvrtletí</i>	<i>pořadí</i>	<i>realinvs</i>
1993Q1	1	886.2
1993Q2	2	868.3
1993Q3	3	838
1993Q4	4	838.2
1994Q1	5	863.4
1994Q2	6	863.9
1994Q3	7	860.5
1994Q4	8	929.3
1995Q1	9	884.6
1995Q2	10	902.5
1995Q3	11	907.5
1995Q4	12	916.7
1996Q1	13	952.7
1996Q2	14	941.1
1996Q3	15	929.3
1996Q4	16	922.9
1997Q1	17	934
1997Q2	18	933
1997Q3	19	912.6
1997Q4	20	849.6
1998Q1	21	815.1
1998Q2	22	808.8
1998Q3	23	829.8
1998Q4	24	864.2
1999Q1	25	843.8
1999Q2	26	901.8
1999Q3	27	912.1
1999Q4	28	941.6
2000Q1	29	964.8
2000Q2	30	967
2000Q3	31	964.1
2000Q4	32	1015.6
2001Q1	33	1057.3
2001Q2	34	1118.5
2001Q3	35	1101.8
2001Q4	36	1150.5
2002Q1	37	1162.4
2002Q2	38	1128.5
2002Q3	39	1119.1
2002Q4	40	1152.4
2003Q1	41	1172.3
2003Q2	42	1233.4
2003Q3	43	1281.4

2003Q4	44	1283.7
2004Q1	45	1325.4
2004Q2	46	1400.6
2004Q3	47	1408.6
2004Q4	48	1438.5
2005Q1	49	1543.3
2005Q2	50	1516.8
2005Q3	51	1559.7
2005Q4	52	1612.1
2006Q1	53	1641.8
2006Q2	54	1617.4
2006Q3	55	1655.8
2006Q4	56	1725.4
2007Q1	57	1722.9
2007Q2	58	1801.6
2007Q3	59	1788.8
2007Q4	60	1778.3



trendová funkce			SE	SAE	SSE	MAE
1	<i>lineární trend</i>					
2	<i>kvadratický trend</i>					
3	<i>kubický trend</i>					
5	<i>bikvadratický trend</i>					
6	<i>mocninný trend</i>					
7	<i>logaritmický trend</i>					
8	<i>exponenciální trend</i>					
9	<i>modifik.expon.trend</i>					
9	<i>logistický trend</i>					
10	<i>Gompertzův trend</i>					

MSE	RMSE	MAPE	AMAPE	THEIL' U	

čtvrtletí	pořadí	rec.hodnota	čtvrtletí	pořadí	rec.hodnota	čtvrtletí	pořadí
1986Q1	1	0.001128	1990Q4	20	0.001177	1995Q3	39
1986Q2	2	0.001152	1991Q1	21	0.001227	1995Q4	40
1986Q3	3	0.001193	1991Q2	22	0.001236	1996Q1	41
1986Q4	4	0.001193	1991Q3	23	0.001205	1996Q2	42
1987Q1	5	0.001158	1991Q4	24	0.001157	1996Q3	43
1987Q2	6	0.001158	1992Q1	25	0.001185	1996Q4	44
1987Q3	7	0.001162	1992Q2	26	0.001109	1997Q1	45
1987Q4	8	0.001076	1992Q3	27	0.001096	1997Q2	46
1988Q1	9	0.001130	1992Q4	28	0.001062	1997Q3	47
1988Q2	10	0.001108	1993Q1	29	0.001036	1997Q4	48
1988Q3	11	0.001102	1993Q2	30	0.001034	1998Q1	49
1988Q4	12	0.001091	1993Q3	31	0.001037	1998Q2	50
1989Q1	13	0.001050	1993Q4	32	0.000985	1998Q3	51
1998Q2	14	0.001063	1994Q1	33	0.000946	1998Q4	52
1989Q3	15	0.001076	1994Q2	34	0.000894	1999Q1	53
1989Q4	16	0.001084	1994Q3	35	0.000908	1999Q2	54
1990Q1	17	0.001071	1994Q4	36	0.000869	1999Q3	55
1990Q2	18	0.001072	1995Q1	37	0.000860	1999Q4	56
1990Q3	19	0.001096	1995Q2	38	0.000886	2000Q1	57
		0.021162			0.019910		

parametr	b=	5.188557837	1.0905210
parametr	a=	0.004731363	-0.0000059
parametr	c=	-0.000298741	0.0011295

rec.hodnota
0.000894
0.000868
0.000853
0.000811
0.000780
0.000779
0.000754
0.000714
0.000710
0.000695
0.000648
0.000659
0.000641
0.000620
0.000609
0.000618
0.000604
0.000580
0.000580
0.013418

hodnota	hodnota	hodnota	realinvs
886.2	849.6	1119.1	886.2
868.3	815.1	1152.4	868.3
838	808.8	1172.3	838
838.2	829.8	1233.4	838.2
863.4	864.2	1281.4	863.4
863.9	843.8	1283.7	863.9
860.5	901.8	1325.4	860.5
929.3	912.1	1400.6	929.3
884.6	941.6	1408.6	884.6
902.5	964.8	1438.5	902.5
907.5	967	1543.3	907.5
916.7	964.1	1516.8	916.7
952.7	1015.6	1559.7	952.7
941.1	1057.3	1612.1	941.1
929.3	1118.5	1641.8	929.3
922.9	1101.8	1617.4	922.9
934	1150.5	1655.8	934
933	1162.4	1725.4	933
912.6	1128.5	1722.9	912.6
17084.7	18397.3	27410.6	849.6
			815.1
			808.8
			829.8
			864.2
			843.8
			901.8
			912.1
			941.6
			964.8
			967
			964.1
			1015.6
			1057.3
			1118.5
			1101.8
			1150.5
			1162.4
			1128.5
			1119.1
			1152.4
			1172.3
			1233.4
			1281.4

1283.7

1325.4

1400.6

1408.6

1438.5

1543.3

1516.8

1559.7

1612.1

1641.8

1617.4

1655.8

1725.4

1722.9

1801.6

1788.8

1778.3

čtvrtletí	pořadí	hodnota	t^2	$xt*yt$
1986Q1	1	6.7869	1	6.7869
1986Q2	2	6.7665	4	13.5331
1986Q3	3	6.7310	9	20.1931
1986Q4	4	6.7313	16	26.9250
1987Q1	5	6.7609	25	33.8044
1987Q2	6	6.7615	36	40.5687
1987Q3	7	6.7575	49	47.3026
1987Q4	8	6.8344	64	54.6755
1988Q1	9	6.7851	81	61.0662
1988Q2	10	6.8052	100	68.0517
1988Q3	11	6.8107	121	74.9176
1988Q4	12	6.8208	144	81.8494
1989Q1	13	6.8593	169	89.1709
1989Q2	14	6.8470	196	95.8587
1989Q3	15	6.8344	225	102.5165
1989Q4	16	6.8275	256	109.2403
1990Q1	17	6.8395	289	116.2711
1990Q2	18	6.8384	324	123.0913
1990Q3	19	6.8163	361	129.5097
1990Q4	20	6.7448	400	134.8953
1991Q1	21	6.7033	441	140.7695
1991Q2	22	6.6956	484	147.3021
1991Q3	23	6.7212	529	154.5872
1991Q4	24	6.7618	576	162.2833
1992Q1	25	6.7379	625	168.4479
1992Q2	26	6.8044	676	176.9142
1992Q3	27	6.8157	729	184.0252
1992Q4	28	6.8476	784	191.7323
1993Q1	29	6.8719	841	199.2857
1993Q2	30	6.8742	900	206.2260
1993Q3	31	6.8712	961	213.0070
1993Q4	32	6.9232	1024	221.5435
1994Q1	33	6.9635	1089	229.7946
1994Q2	34	7.0197	1156	238.6713
1994Q3	35	7.0047	1225	245.1645
1994Q4	36	7.0480	1296	253.7263
1995Q1	37	7.0582	1369	261.1550
1995Q2	38	7.0286	1444	267.0885
1995Q3	39	7.0203	1521	273.7909
1995Q4	40	7.0496	1600	281.9841
1996Q1	41	7.0667	1681	289.7356
1996Q2	42	7.1175	1764	298.9363
1996Q3	43	7.1557	1849	307.6955

skutečnost	vyrovnání	rezidua
886.2	750.2	136.0
868.3	759.8	108.5
838	769.6	68.4
838.2	779.5	58.7
863.4	789.5	73.9
863.9	799.6	64.3
860.5	809.9	50.6
929.3	820.3	109.0
884.6	830.9	53.7
902.5	841.6	60.9
907.5	852.4	55.1
916.7	863.3	53.4
952.7	874.4	78.3
941.1	885.7	55.4
929.3	897.1	32.2
922.9	908.6	14.3
934	920.3	13.7
933	932.1	0.9
912.6	944.1	-31.5
849.6	956.3	-106.7
815.1	968.5	-153.4
808.8	981.0	-172.2
829.8	993.6	-163.8
864.2	1006.4	-142.2
843.8	1019.3	-175.5
901.8	1032.4	-130.6
912.1	1045.7	-133.6
941.6	1059.1	-117.5
964.8	1072.8	-108.0
967	1086.6	-119.6
964.1	1100.5	-136.4
1015.6	1114.7	-99.1
1057.3	1129.0	-71.7
1118.5	1143.5	-25.0
1101.8	1158.2	-56.4
1150.5	1173.1	-22.6
1162.4	1188.2	-25.8
1128.5	1203.5	-75.0
1119.1	1219.0	-99.9
1152.4	1234.6	-82.2
1172.3	1250.5	-78.2
1233.4	1266.6	-33.2
1281.4	1282.9	-1.5

1996Q4	44	7.1575	1936	314.9301
1997Q1	45	7.1895	2025	323.5261
1997Q2	46	7.2447	2116	333.2542
1997Q3	47	7.2504	2209	340.7665
1997Q4	48	7.2714	2304	349.0251
1998Q1	49	7.3417	2401	359.7422
1998Q2	50	7.3244	2500	366.2179
1998Q3	51	7.3522	2601	374.9647
1998Q4	52	7.3853	2704	384.0352
1999Q1	53	7.4035	2809	392.3881
1999Q2	54	7.3886	2916	398.9831
1999Q3	55	7.4120	3025	407.6622
1999Q4	56	7.4532	3136	417.3800
2000Q1	57	7.4518	3249	424.7506
2000Q2	58	7.4964	3364	434.7930
2000Q3	59	7.4893	3481	441.8687
2000Q4	60	7.4834	3600	449.0048
sumace	1653	397.7458	63365	11731.72

1283.7	1299.4	-15.7
1325.4	1316.1	9.3
1400.6	1333.0	67.6
1408.6	1350.1	58.5
1438.5	1367.5	71.0
1543.3	1385.1	158.2
1516.8	1402.9	113.9
1559.7	1420.9	138.8
1612.1	1439.2	172.9
1641.8	1457.7	184.1
1617.4	1476.4	141.0
1655.8	1495.4	160.4
1725.4	1514.6	210.8
1722.9	1534.1	188.8
1801.6	1553.8	247.8
1788.8	1573.8	215.0
1778.3	1594.0	184.3
62892.6	62507.19	385.413156

$X^T X =$	57	1653
	1653	63365

THEILovoU	0.14316
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$\det(X^T X)$	879396
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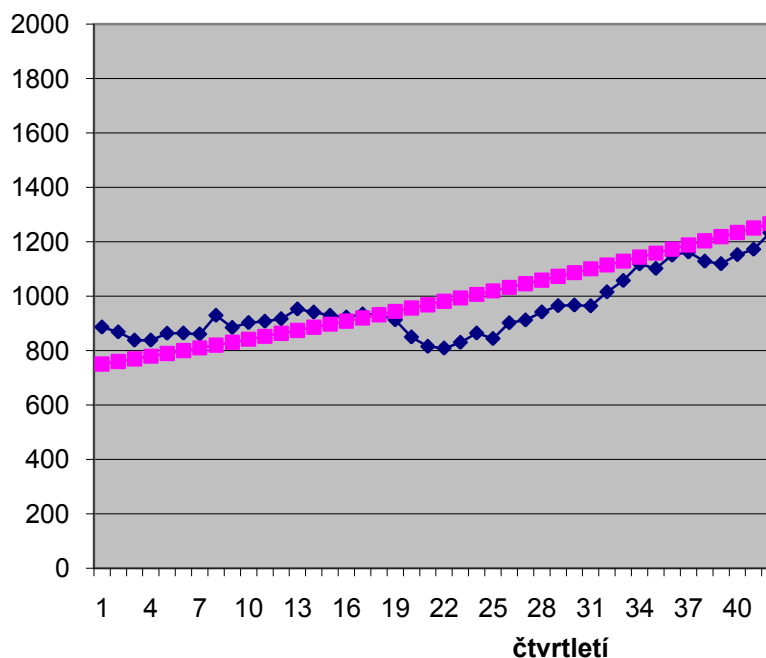
$(X^T X)^{-1}$	0.072055	-0.0018797
	-0.00188	6.482E-05

$X^T y =$	397.7458
	11731.72

b1	6.607519
b2	0.012775

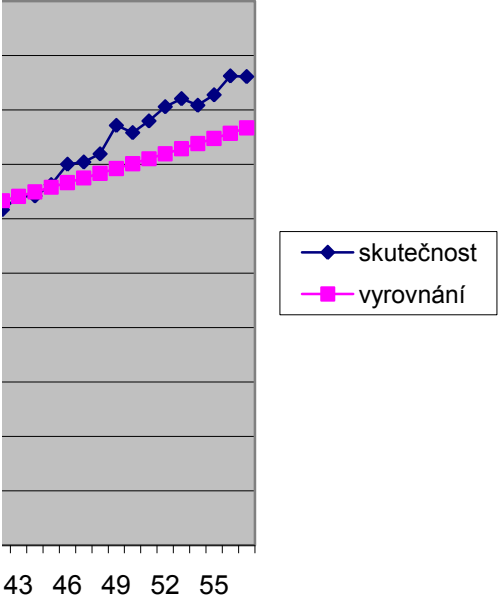
<i>abs.rezidua</i>	<i>rezidua^2</i>	<i>APE</i>	<i>AMAPE</i>
136.03	18505.327	0.1535	0.083132
108.49	11769.9503	0.1249	0.066635
68.42	4681.36659	0.0816	0.042561
58.73	3448.74608	0.0701	0.036303
73.90	5461.84922	0.0856	0.044712
64.25	4128.54759		
50.57	2557.59995		
108.96	11872.1683		
53.71	2885.01741		
60.93	3712.42		
55.11	3037.06328		
53.35	2846.26186		
78.25	6123.10606		
55.41	3069.98816		
32.22	1038.13617		
14.29	204.100085		
13.70	187.808112		
0.87	0.76049506		
31.51	993.025674		
106.65	11374.386		
153.45	23545.4563		
172.20	29652.1096		
163.81	26833.9041		
142.19	20216.6965		
175.52	30808.8615		
130.63	17064.1951	0.1449	0.067536
133.60	17850.0156	0.1465	0.068242
117.55	13817.6667	0.1248	0.058752
107.97	11656.668	0.1119	0.052988
119.56	14294.2609	0.1236	0.05822
136.43	18612.7351	0.1415	0.066079
99.08	9816.44978	0.0976	0.046509
71.71	5142.24079	0.0678	0.032799
25.03	626.255574	0.0224	0.011063
56.43	3184.05224	0.0512	0.024968
22.62	511.607507	0.0197	0.009734
25.80	665.719257	0.0222	0.010977
74.98	5621.73783	0.0664	0.032152
99.85	9970.29708	0.0892	0.042707
82.22	6760.6939	0.0713	0.034446
78.20	6114.7706	0.0667	0.032276
33.17	1100.55706	0.0269	0.01327
1.46	2.12868505	0.0011	0.000569

vyrovnání exponenciálním t



15.65	245.007831	0.0122	0.00606
9.34	87.2634256	0.0070	0.003536
67.62	4572.58863	0.0483	0.024737
58.48	3420.23788	0.0415	0.021199
71.02	5044.45634	0.0494	0.025312
158.24	25040.7504	0.1025	0.054038
113.94	12981.1856	0.0751	0.039023
138.80	19264.9858	0.0890	0.046567
172.93	29904.7241	0.1073	0.056675
184.13	33902.5334	0.1121	0.059406
140.99	19876.7954	0.0872	0.04557
160.40	25729.0632	0.0969	0.050902
210.78	44426.7272	0.1222	0.065054
188.80	35646.5593	0.1096	0.057968
247.78	61394.468	0.1375	0.073844
215.00	46225.6826	0.1202	0.063939
184.27	33954.4207	0.1036	0.054641
5.1399E+03	6.3191E+05	0.0843	0.0417

rendem



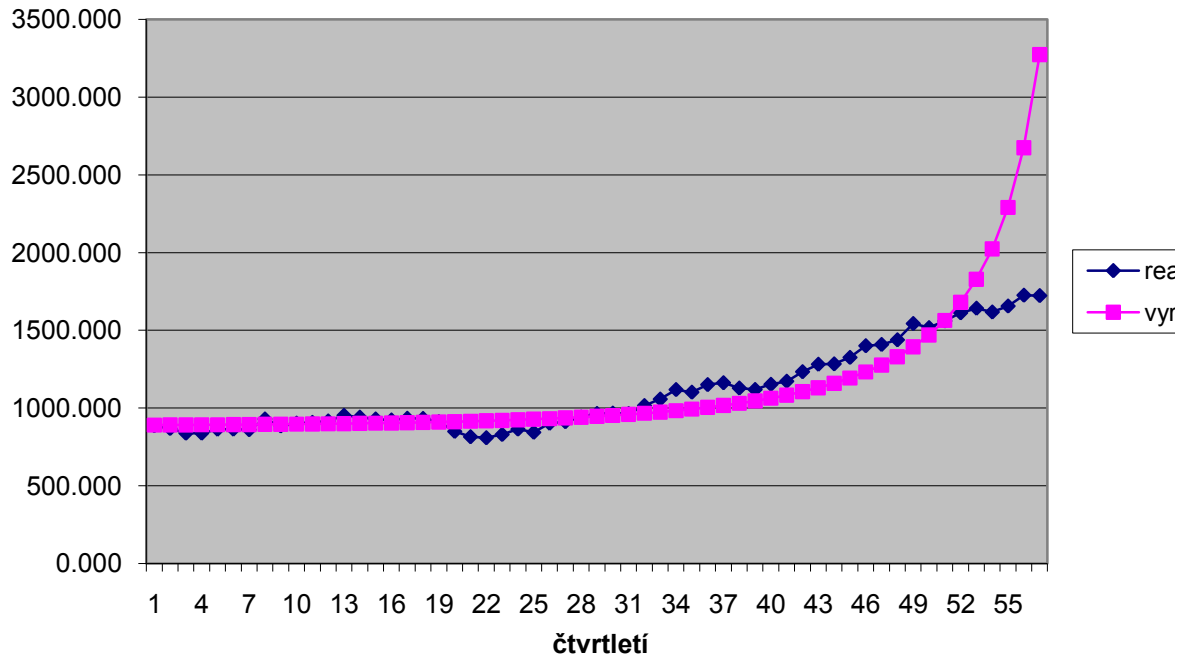
čtvrtletí	pořadí	realinvs	vyrovnání	rezidua	abs.rezidua	rezidua^2
1986Q1	1	886.200	890.420	-4.220	4.220	17.81
1986Q2	2	868.300	890.882	-22.582	22.582	509.93
1986Q3	3	838.000	891.386	-53.386	53.386	2850.07
1986Q4	4	838.200	891.937	-53.737	53.737	2887.64
1987Q1	5	863.400	892.538	-29.138	29.138	849.03
1987Q2	6	863.900	893.195	-29.295	29.295	858.18
1987Q3	7	860.500	893.912	-33.412	33.412	1116.36
1987Q4	8	929.300	894.695	34.605	34.605	1197.48
1988Q1	9	884.600	895.551	-10.951	10.951	119.93
1988Q2	10	902.500	896.487	6.013	6.013	36.16
1988Q3	11	907.500	897.509	9.991	9.991	99.82
1988Q4	12	916.700	898.626	18.074	18.074	326.66
1989Q1	13	952.700	899.848	52.852	52.852	2793.35
1989Q2	14	941.100	901.184	39.916	39.916	1593.30
1989Q3	15	929.300	902.645	26.655	26.655	710.47
1989Q4	16	922.900	904.245	18.655	18.655	348.02
1990Q1	17	934.000	905.995	28.005	28.005	784.27
1990Q2	18	933.000	907.912	25.088	25.088	629.42
1990Q3	19	912.600	910.011	2.589	2.589	6.70
1990Q4	20	849.600	912.312	-62.712	62.712	3932.77
1991Q1	21	815.100	914.834	-99.734	99.734	9946.86
1991Q2	22	808.800	917.600	-108.800	108.800	11837.52
1991Q3	23	829.800	920.636	-90.836	90.836	8251.23
1991Q4	24	864.200	923.970	-59.770	59.770	3572.45
1992Q1	25	843.800	927.633	-83.833	83.833	7027.99
1992Q2	26	901.800	931.661	-29.861	29.861	891.69
1992Q3	27	912.100	936.094	-23.994	23.994	575.70
1992Q4	28	941.600	940.976	0.624	0.624	0.39
1993Q1	29	964.800	946.359	18.441	18.441	340.09
1993Q2	30	967.000	952.299	14.701	14.701	216.12
1993Q3	31	964.100	958.863	5.237	5.237	27.43
1993Q4	32	1015.600	966.125	49.475	49.475	2447.82
1994Q1	33	1057.300	974.170	83.130	83.130	6910.57
1994Q2	34	1118.500	983.098	135.402	135.402	18333.65
1994Q3	35	1101.800	993.023	108.777	108.777	11832.48
1994Q4	36	1150.500	1004.077	146.423	146.423	21439.75
1995Q1	37	1162.400	1016.415	145.985	145.985	21311.51
1995Q2	38	1128.500	1030.221	98.279	98.279	9658.73
1995Q3	39	1119.100	1045.711	73.389	73.389	5386.00
1995Q4	40	1152.400	1063.142	89.258	89.258	7966.99
1996Q1	41	1172.300	1082.826	89.474	89.474	8005.60
1996Q2	42	1233.400	1105.140	128.260	128.260	16450.69
1996Q3	43	1281.400	1130.546	150.854	150.854	22757.01

1996Q4	44	1283.700	1159.617	124.083	124.083	15396.53
1997Q1	45	1325.400	1193.074	132.326	132.326	17510.23
1997Q2	46	1400.600	1231.831	168.769	168.769	28483.02
1997Q3	47	1408.600	1277.072	131.528	131.528	17299.62
1997Q4	48	1438.500	1330.354	108.146	108.146	11695.48
1998Q1	49	1543.300	1393.770	149.530	149.530	22359.36
1998Q2	50	1516.800	1470.194	46.606	46.606	2172.08
1998Q3	51	1559.700	1563.699	-3.999	3.999	15.99
1998Q4	52	1612.100	1680.235	-68.135	68.135	4642.31
1999Q1	53	1641.800	1828.870	-187.070	187.070	34995.36
1999Q2	54	1617.400	2024.137	-406.737	406.737	165435.06
1999Q3	55	1655.800	2290.872	-635.072	635.072	403316.47
1999Q4	56	1725.400	2675.333	-949.933	949.933	902371.89
2000Q1	57	1722.900	3274.638	-1551.738	1551.738	2407891.20
2000Q2	58	1801.600	4333.190	-2531.590	2531.590	6408950.26
2000Q3	59	1788.800	6692.387	-4903.587	4903.587	24045163.77
2000Q4	60	1778.300	16472.832	-14694.532	14694.532	#####
		62892.6	65030.40228	-2137.80228	7.0601E+03	4.2504E+06

parametr	b=	beta	1.0905210	5.1885578	THEILovoU	0.16612
parametr	a=	alfa	-0.0000059	0.0047314		
parametr	c=	gama	0.0011295	-0.0002987		

APE	AMAPE
0.005	0.002
0.026	0.013
0.064	0.031
0.064	0.031
0.034	0.017
0.034	0.017

vyrovnání logistickým trendem



0.026	0.013
0.001	0.000
0.019	0.010
0.015	0.008
0.005	0.003
0.049	0.025
0.079	0.041
0.121	0.064
0.099	0.052
0.127	0.068
0.126	0.067
0.087	0.046
0.066	0.034
0.077	0.040
0.076	0.040
0.104	0.055
0.118	0.063

0.097	0.051
0.100	0.053
0.120	0.064
0.093	0.049
0.075	0.039
0.097	0.051
0.031	0.016
0.003	0.001
0.042	0.021
0.114	0.054
0.251	0.112
0.384	0.161
0.551	0.216
0.901	0.311
1.405	0.413
2.741	0.578
8.263	0.805
0.0922	0.0422

aliny
rovnání

čtvrtletí	pořadí	realinvs	vyrovnání	rezidua	abs.rezidua	rezidua^2	APE
1986Q1	1	886.2	891.5	-5.3	5.29	27.9762279	0.0060
1986Q2	2	868.3	891.9	-23.6	23.62	558.075979	0.0272
1986Q3	3	838	892.4	-54.4	54.40	2959.83507	0.0649
1986Q4	4	838.2	892.9	-54.7	54.74	2996.07425	0.0653
1987Q1	5	863.4	893.5	-30.1	30.13	907.529452	0.0349
1987Q2	6	863.9	894.2	-30.3	30.28	916.690302	0.0350
1987Q3	7	860.5	894.9	-34.4	34.40	1183.22975	
1987Q4	8	929.3	895.7	33.6	33.60	1129.20926	
1988Q1	9	884.6	896.6	-12.0	11.98	143.512279	
1988Q2	10	902.5	897.6	4.9	4.94	24.4302004	2500
1988Q3	11	907.5	898.6	8.9	8.86	78.5120973	
1988Q4	12	916.7	899.8	16.9	16.86	284.369008	
1989Q1	13	952.7	901.2	51.5	51.54	2656.16388	2000
1989Q2	14	941.1	902.6	38.5	38.47	1480.03997	
1989Q3	15	929.3	904.3	25.0	25.05	627.405191	1500
1989Q4	16	922.9	906.0	16.9	16.85	283.976056	
1990Q1	17	934	908.0	26.0	25.96	674.097788	
1990Q2	18	933	910.2	22.8	22.76	518.15453	1000
1990Q3	19	912.6	912.7	-0.1	0.07	0.00521466	
1990Q4	20	849.6	915.4	-65.8	65.77	4325.34184	
1991Q1	21	815.1	918.4	-103.3	103.25	10660.5801	500
1991Q2	22	808.8	921.7	-112.9	112.85	12735.3871	
1991Q3	23	829.8	925.3	-95.5	95.50	9121.12223	0
1991Q4	24	864.2	929.3	-65.1	65.15	4244.24469	
1992Q1	25	843.8	933.8	-90.0	90.02	8104.08454	
1992Q2	26	901.8	938.8	-37.0	36.98	1367.15681	
1992Q3	27	912.1	944.3	-32.2	32.16	1034.00966	0.0353
1992Q4	28	941.6	950.3	-8.7	8.72	76.0716856	0.0093
1993Q1	29	964.8	957.0	7.8	7.76	60.2924984	0.0080
1993Q2	30	967	964.5	2.5	2.54	6.42666341	0.0026
1993Q3	31	964.1	972.7	-8.6	8.59	73.7466556	0.0089
1993Q4	32	1015.6	981.8	33.8	33.81	1143.26334	0.0333
1994Q1	33	1057.3	991.9	65.4	65.44	4282.48823	0.0619
1994Q2	34	1118.5	1003.0	115.5	115.49	13338.9557	0.1033
1994Q3	35	1101.8	1015.3	86.5	86.46	7475.06934	0.0785
1994Q4	36	1150.5	1029.0	121.5	121.51	14763.714	0.1056
1995Q1	37	1162.4	1044.1	118.3	118.30	13994.0648	0.1018
1995Q2	38	1128.5	1060.8	67.7	67.67	4579.83032	0.0600
1995Q3	39	1119.1	1079.3	39.8	39.77	1581.47146	0.0355
1995Q4	40	1152.4	1099.8	52.6	52.59	2765.27384	0.0456
1996Q1	41	1172.3	1122.5	49.8	49.82	2481.84374	0.0425
1996Q2	42	1233.4	1147.6	85.8	85.83	7366.98352	0.0696
1996Q3	43	1281.4	1175.3	106.1	106.07	11250.1584	0.0828

1996Q4	44	1283.7	1206.1	77.6	77.64	6027.85356	0.0605
1997Q1	45	1325.4	1240.1	85.3	85.33	7281.6117	0.0644
1997Q2	46	1400.6	1277.7	122.9	122.90	15103.4504	0.0877
1997Q3	47	1408.6	1319.4	89.2	89.24	7964.33375	0.0634
1997Q4	48	1438.5	1365.5	73.0	73.04	5335.53384	0.0508
1998Q1	49	1543.3	1416.5	126.8	126.83	16084.9688	0.0822
1998Q2	50	1516.8	1472.9	43.9	43.86	1923.99999	0.0289
1998Q3	51	1559.7	1535.4	24.3	24.27	589.242405	0.0156
1998Q4	52	1612.1	1604.6	7.5	7.52	56.4914903	0.0047
1999Q1	53	1641.8	1681.1	-39.3	39.32	1546.30119	0.0240
1999Q2	54	1617.4	1765.8	-148.4	148.43	22031.691	0.0918
1999Q3	55	1655.8	1859.6	-203.8	203.78	41525.834	0.1231
1999Q4	56	1725.4	1963.3	-237.9	237.93	56611.7505	0.1379
2000Q1	57	1722.9	2078.2	-355.3	355.26	126208.693	0.2062
2000Q2	58	1801.6	2205.2	-403.6	403.64	162925.103	0.2240
2000Q3	59	1788.8	2345.9	-557.1	557.08	310342.247	0.3114
2000Q4	60	1778.3	2501.5	-723.2	723.24	523072.827	0.4067
sumace		62892.6	62892.61978	-0.020	3.6972E+03	4.6257E+05	0.0554

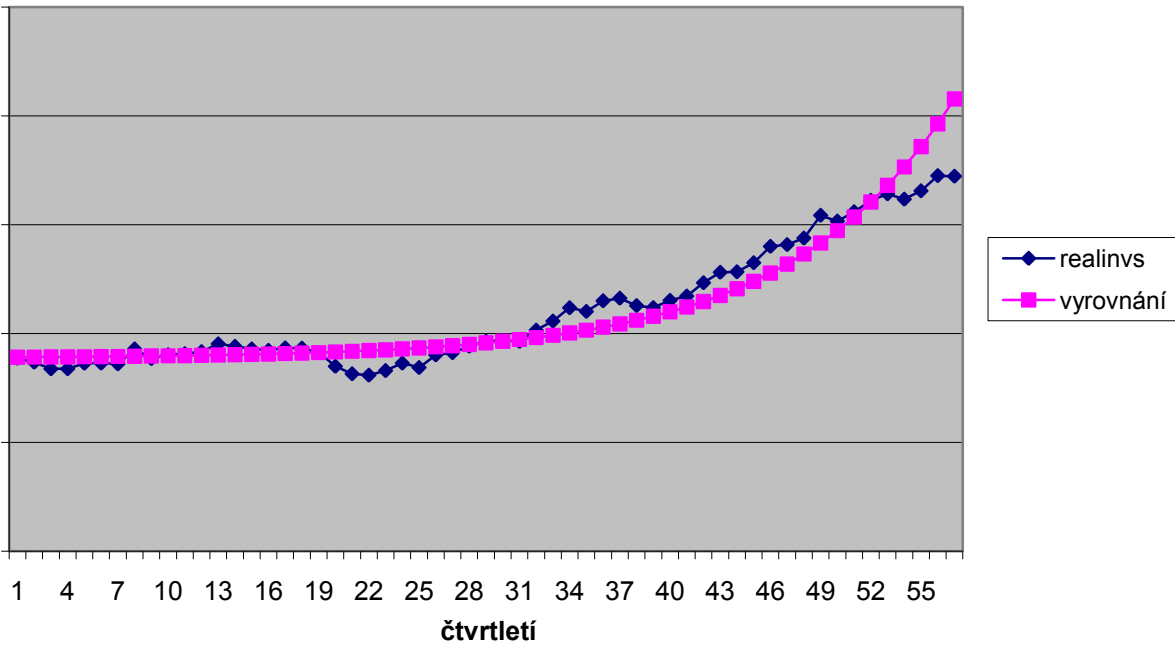
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parametr	a =	alfa	3.6775757
parametr	c =	gama	887.4191924

THEILovoU	0.12123
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AMAPE

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0.031619
0.017147
0.017222

vyrovnání modif.expon. trendem



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0.016928
0.031935
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0.040837
0.05575
0.053613
0.030911
0.018089
0.023349
0.021709
0.036049
0.043174

0.031183
0.033262
0.045886
0.032714
0.026051
0.04285
0.014671
0.007843
0.002337
0.011834
0.043872
0.057968
0.064502
0.093463
0.100738
0.134734
0.168987
0.0274

čtvrtletí	pořadí	hodnota	čtvrtletí	pořadí	hodnota	čtvrtletí	pořadí
1986Q1	1	886.2	1990Q4	20	849.6	1995Q3	39
1986Q2	2	868.3	1991Q1	21	815.1	1995Q4	40
1986Q3	3	838	1991Q2	22	808.8	1996Q1	41
1986Q4	4	838.2	1991Q3	23	829.8	1996Q2	42
1987Q1	5	863.4	1991Q4	24	864.2	1996Q3	43
1987Q2	6	863.9	1992Q1	25	843.8	1996Q4	44
1987Q3	7	860.5	1992Q2	26	901.8	1997Q1	45
1987Q4	8	929.3	1992Q3	27	912.1	1997Q2	46
1988Q1	9	884.6	1992Q4	28	941.6	1997Q3	47
1988Q2	10	902.5	1993Q1	29	964.8	1997Q4	48
1988Q3	11	907.5	1993Q2	30	967	1998Q1	49
1988Q4	12	916.7	1993Q3	31	964.1	1998Q2	50
1989Q1	13	952.7	1993Q4	32	1015.6	1998Q3	51
1998Q2	14	941.1	1994Q1	33	1057.3	1998Q4	52
1989Q3	15	929.3	1994Q2	34	1118.5	1999Q1	53
1989Q4	16	922.9	1994Q3	35	1101.8	1999Q2	54
1990Q1	17	934	1994Q4	36	1150.5	1999Q3	55
1990Q2	18	933	1995Q1	37	1162.4	1999Q4	56
1990Q3	19	912.6	1995Q2	38	1128.5	2000Q1	57
		17084.7			18397.3		

parametr	b=	6.86675301	1.10672
parametr	a=	0.00280175	3.67758
parametr	c=	223.735344	887.41919

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1233.4
1281.4
1283.7
1325.4
1400.6
1408.6
1438.5
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1516.8
1559.7
1612.1
1641.8
1617.4
1655.8
1725.4
1722.9
27410.6

hodnota	hodnota	hodnota
886.2	849.6	1119.1
868.3	815.1	1152.4
838	808.8	1172.3
838.2	829.8	1233.4
863.4	864.2	1281.4
863.9	843.8	1283.7
860.5	901.8	1325.4
929.3	912.1	1400.6
884.6	941.6	1408.6
902.5	964.8	1438.5
907.5	967	1543.3
916.7	964.1	1516.8
952.7	1015.6	1559.7
941.1	1057.3	1612.1
929.3	1118.5	1641.8
922.9	1101.8	1617.4
934	1150.5	1655.8
933	1162.4	1725.4
912.6	1128.5	1722.9

čtvrtletí	pořadí	realinvs	vyrovnaní	rezidua	abs.rezidua	rezidua ²
1986Q1	1	886.200	890.869	-4.669	4.669	21.801
1986Q2	2	868.300	891.327	-23.027	23.027	530.221
1986Q3	3	838.000	891.829	-53.829	53.829	2897.550
1986Q4	4	838.200	892.381	-54.181	54.181	2935.550
1987Q1	5	863.400	892.987	-29.587	29.587	875.383
1987Q2	6	863.900	893.653	-29.753	29.753	885.228
1987Q3	7	860.500	894.384	-33.884	33.884	1148.150
1987Q4	8	929.300	895.188	34.112	34.112	1163.617
1988Q1	9	884.600	896.071	-11.471	11.471	131.593
1988Q2	10	902.500	897.042	5.458	5.458	29.790
1988Q3	11	907.500	898.109	9.391	9.391	88.197
1988Q4	12	916.700	899.281	17.419	17.419	303.417
1989Q1	13	952.700	900.570	52.130	52.130	2717.538
1989Q2	14	941.100	901.987	39.113	39.113	1529.828
1989Q3	15	929.300	903.545	25.755	25.755	663.315
1989Q4	16	922.900	905.259	17.641	17.641	311.217
1990Q1	17	934.000	907.144	26.856	26.856	721.271
1990Q2	18	933.000	909.217	23.783	23.783	565.624
1990Q3	19	912.600	911.499	1.101	1.101	1.212
1990Q4	20	849.600	914.011	-64.411	64.411	4148.724
1991Q1	21	815.100	916.776	-101.676	101.676	10337.946
1991Q2	22	808.800	919.821	-111.021	111.021	12325.615
1991Q3	23	829.800	923.175	-93.375	93.375	8718.939
1991Q4	24	864.200	926.872	-62.672	62.672	3927.756
1992Q1	25	843.800	930.947	-87.147	87.147	7594.570
1992Q2	26	901.800	935.441	-33.641	33.641	1131.712
1992Q3	27	912.100	940.399	-28.299	28.299	800.856
1992Q4	28	941.600	945.873	-4.273	4.273	18.258
1993Q1	29	964.800	951.918	12.882	12.882	165.935
1993Q2	30	967.000	958.599	8.401	8.401	70.569
1993Q3	31	964.100	965.988	-1.888	1.888	3.563
1993Q4	32	1015.600	974.164	41.436	41.436	1716.945
1994Q1	33	1057.300	983.219	74.081	74.081	5487.943
1994Q2	34	1118.500	993.257	125.243	125.243	15685.789
1994Q3	35	1101.800	1004.394	97.406	97.406	9487.874
1994Q4	36	1150.500	1016.764	133.736	133.736	17885.247
1995Q1	37	1162.400	1030.519	131.881	131.881	17392.543
1995Q2	38	1128.500	1045.833	82.667	82.667	6833.766
1995Q3	39	1119.100	1062.907	56.193	56.193	3157.641
1995Q4	40	1152.400	1081.971	70.429	70.429	4960.199
1996Q1	41	1172.300	1103.293	69.007	69.007	4761.901
1996Q2	42	1233.400	1127.185	106.215	106.215	11281.724
1996Q3	43	1281.400	1154.008	127.392	127.392	16228.807
1996Q4	44	1283.700	1184.189	99.511	99.511	9902.448

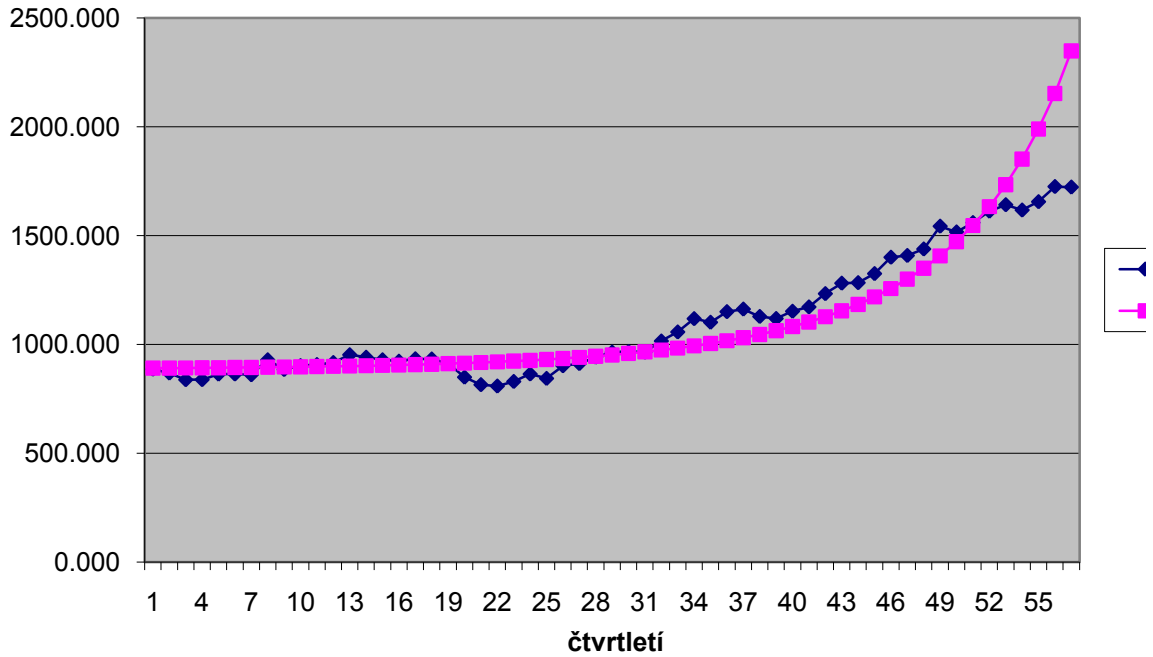
1997Q1	45	1325.400	1218.231	107.169	107.169	11485.222
1997Q2	46	1400.600	1256.729	143.871	143.871	20698.838
1997Q3	47	1408.600	1300.394	108.206	108.206	11708.588
1997Q4	48	1438.500	1350.077	88.423	88.423	7818.698
1998Q1	49	1543.300	1406.806	136.494	136.494	18630.748
1998Q2	50	1516.800	1471.829	44.971	44.971	2022.347
1998Q3	51	1559.700	1546.677	13.023	13.023	169.599
1998Q4	52	1612.100	1633.233	-21.133	21.133	446.585
1999Q1	53	1641.800	1733.839	-92.039	92.039	8471.097
1999Q2	54	1617.400	1851.431	-234.031	234.031	54770.617
1999Q3	55	1655.800	1989.725	-333.925	333.925	111505.721
1999Q4	56	1725.400	2153.463	-428.063	428.063	183237.610
2000Q1	57	1722.900	2348.766	-625.866	625.866	391707.890
2000Q2	58	1801.600	2583.619	-782.019	782.019	611553.130
2000Q3	59	1788.800	2868.560	-1079.760	1079.760	1165881.055
2000Q4	60	1778.300	3217.673	-1439.373	1439.373	2071793.222
sumace			63325.1	-432.5	4695.3	1.014221E+06

parametr	b=	beta	1.09778
parametr	a=	alfa	0.00478
parametr	c=	gama	6.78695

THEILovoU	0.27230
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APE	AMAPE
0.005	0.003
0.027	0.013
0.064	0.031
0.065	0.031
0.034	0.017
0.034	0.017

vyrovnání Gompertzovým trendem



0.037	0.018
0.031	0.015
0.005	0.002
0.013	0.007
0.009	0.004
0.002	0.001
0.041	0.021
0.070	0.036
0.112	0.059
0.088	0.046
0.116	0.062
0.113	0.060
0.073	0.038
0.050	0.026
0.061	0.032
0.059	0.030
0.086	0.045
0.099	0.052
0.078	0.040

0.081	0.042
0.103	0.054
0.077	0.040
0.061	0.032
0.088	0.046
0.030	0.015
0.008	0.004
0.013	0.007
0.056	0.027
0.145	0.067
0.202	0.092
0.248	0.110
0.363	0.154
0.434	0.178
0.604	0.232
0.809	0.288
0.0666	0.0326

— realinvs
— vyrovnání

čtvrtletí	pořadí	loghodnota	čtvrtletí	pořadí	loghodnota	čtvrtletí	pořadí	loghodnota
1986Q1	1	6.786943	1990Q4	20	6.744766	1995Q3	39	7.02028
1986Q2	2	6.766537	1991Q1	21	6.703311	1995Q4	40	7.049602
1986Q3	3	6.731018	1991Q2	22	6.695552	1996Q1	41	7.066723
1986Q4	4	6.731257	1991Q3	23	6.721185	1996Q2	42	7.11753
1987Q1	5	6.760878	1991Q4	24	6.761804	1996Q3	43	7.155709
1987Q2	6	6.761457	1992Q1	25	6.737915	1996Q4	44	7.157502
1987Q3	7	6.757514	1992Q2	26	6.804393	1997Q1	45	7.18947
1987Q4	8	6.834432	1992Q3	27	6.81575	1997Q2	46	7.244656
1988Q1	9	6.785136	1992Q4	28	6.847581	1997Q3	47	7.250352
1988Q2	10	6.805169	1993Q1	29	6.871921	1997Q4	48	7.271356
1988Q3	11	6.810694	1993Q2	30	6.874198	1998Q1	49	7.341678
1988Q4	12	6.82078	1993Q3	31	6.871195	1998Q2	50	7.324358
1989Q1	13	6.8593	1993Q4	32	6.923235	1998Q3	51	7.352249
1998Q2	14	6.847049	1994Q1	33	6.963474	1998Q4	52	7.385293
1989Q3	15	6.834432	1994Q2	34	7.019744	1999Q1	53	7.403548
1989Q4	16	6.827521	1994Q3	35	7.0047	1999Q2	54	7.388575
1990Q1	17	6.839476	1994Q4	36	7.047952	1999Q3	55	7.41204
1990Q2	18	6.838405	1995Q1	37	7.058242	1999Q4	56	7.453214
1990Q3	19	6.816298	1995Q2	38	7.028645	2000Q1	57	7.451764
		129.2143			130.4956			138.0359

parametr	b=	5.885063	1.09777
parametr	a=	0.003732	0.00478
parametr	c=	0.262283	6.78695

hodnota	hodnota	hodnota
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838	808.8	1172.3
838.2	829.8	1233.4
863.4	864.2	1281.4
863.9	843.8	1283.7
860.5	901.8	1325.4
929.3	912.1	1400.6
884.6	941.6	1408.6
902.5	964.8	1438.5
907.5	967	1543.3
916.7	964.1	1516.8
952.7	1015.6	1559.7
941.1	1057.3	1612.1
929.3	1118.5	1641.8
922.9	1101.8	1617.4
934	1150.5	1655.8
933	1162.4	1725.4
912.6	1128.5	1722.9

čtvrtletí	pořadí	hodnota	čtvrtletí	pořadí	hodnota	čtvrtletí	pořadí
1993Q1	1	179342.9	1997Q4	20	473921.5	2002Q3	39
1993Q2	2	179879.6	1998Q1	21	493387.1	2002Q4	40
1993Q3	3	184157.9	1998Q2	22	512073.8	2003Q1	41
1993Q4	4	204782.7	1998Q3	23	527451.8	2003Q2	42
1994Q1	5	215145.3	1998Q4	24	549745.5	2003Q3	43
1994Q2	6	220120.4	1999Q1	25	559644.4	2003Q4	44
1994Q3	7	224857.6	1999Q2	26	554565.3	2004Q1	45
1994Q4	8	244498.9	1999Q3	27	542409.4	2004Q2	46
1995Q1	9	257013.4	1999Q4	28	536933.7	2004Q3	47
1995Q2	10	268251.6	2000Q1	29	548175	2004Q4	48
1995Q3	11	280707.7	2000Q2	30	543395.4	2005Q1	49
1995Q4	12	306236.9	2000Q3	31	547678.9	2005Q2	50
1996Q1	13	320848.6	2000Q4	32	549152.9	2005Q3	51
1996Q2	14	329595.1	2001Q1	33	568758.9	2005Q4	52
1996Q3	15	336112.3	2001Q2	34	583195.2	2006Q1	53
1996Q4	16	365625.2	2001Q3	35	589675.9	2006Q2	54
1997Q1	17	414840.1	2001Q4	36	595970.9	2006Q3	55
1997Q2	18	441183	2002Q1	37	596536.5	2006Q4	56
1997Q3	19	443649.1	2002Q2	38	594155.3	2007Q1	57
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