23.01.25, 13:11 Ergebnisse: MVTS.sas

## Die Prozedur VARMAX

Anzahl Beobachtungen	169
Anzahl fehlender Paare	0

Einfache beschreibende Statistiken						
Variable Typ N Mittelwert Abweichung Min M						
cpi_logfd	Abhängig	169	0.00146	0.00409	-0.01053	0.01791
pri_num	Abhängig	169	0.00039	0.00803	-0.02062	0.02289
costs_log	Abhängig	169	4.53370	4.24887	0.00000	12.02550

Granger-Kausalität-Wald-Test					
Test	est DF Chi-Quadrat Pr > ChiSq				
1	12	11.34	0.5002		
2	12	5.33	0.9462		
3	24	22.90	0.5259		
4	12	12.85	0.3799		
5	12	24.27	0.0187		

Test 1: Gruppe 1 Variablen:	cpi_logfd
Gruppe 2 Variablen:	costs_log

Test 2: Gruppe 1 Variablen:	cpi_logfd
Gruppe 2 Variablen:	pri_num

Test 3: Gruppe 1 Variablen:	cpi_logfd pri_num
Gruppe 2 Variablen:	costs_log

Test 4: Gruppe 1 Variablen:	pri_num	
Gruppe 2 Variablen:	costs_log	

Test 5: Gruppe 1 Variablen:	pri_num
Gruppe 2 Variablen:	cpi_logfd

	Kleinstes Informationskriterium basierend auf HQC								
Lag	MA0	MA1	MA2	MA3	MA4	MA5	MA6	MA7	MA8
AR 0	-17.71936	-17.66781	-17.64858	-17.56454	-17.43416	-17.33208	-17.27274	-17.20662	-17.23921
AR 1	-18.06146	-18.20615	-18.15374	-18.05183	-17.90945	-17.80102	-17.69726	-17.60731	-17.5787
AR 2	-18.07157	-18.14553	-17.99265	-17.90098	-17.76695	-17.65167	-17.56843	-17.4972	-17.47536
AR 3	-17.90416	-18.02379	-17.86976	-17.80992	-17.67627	-17.58574	-17.47337	-17.38394	-17.33927
AR 4	-17.75233	-17.86855	-17.72599	-17.69191	-17.59833	-17.49781	-17.40124	-17.32301	-17.27808
AR 5	-17.63253	-17.75618	-17.623	-17.62424	-17.52448	-17.47663	-17.3542	-17.24824	-17.18709
AR 6	-17.56905	-17.68265	-17.56372	-17.53452	-17.40625	-17.3335	-17.24901	-17.10696	-17.08182
AR 7	-17.43524	-17.55102	-17.43574	-17.42217	-17.28018	-17.2199	-17.12804	-17.03036	-17.02145
AR 8	-17.40924	-17.64092	-17.49774	-17.37847	-17.2885	-17.18777	-17.13541	-17.03868	-16.94151

## Die Prozedur VARMAX

Modelltyp	VAR(12)
Schätzmethode	Kleinste Quadrateschätzer

Konstantenschätzer				
Variable	Konstant			
cpi_logfd	0.00127			
pri_num	0.00261			
costs_log	5.53115			

Lag         Variable         cpi_logfd         -0.09653         0.00117         -0.00004           pri_num         0.01876         0.27115         0.00002           costs_log         -64.62345         23.55903         0.02616           2 cpi_logfd         0.06368         -0.02285         0.00016           pri_num         0.10740         0.34915         0.00012           costs_log         72.97058         23.17990         -0.07266           3 cpi_logfd         0.06891         -0.00202         0.00003           pri_num         0.14671         0.10945         -0.00009           costs_log         49.71882         -77.15029         -0.04648           4 cpi_logfd         0.06093         0.03091         -0.00003           pri_num         0.00261         -0.04031         -0.00001           costs_log         -36.87800         -84.20262         0.07435           5 cpi_logfd         0.09695         -0.07156         -0.00006           pri_num         -0.01406         0.03634         -0.00006           pri_num         -0.1239         0.00153         -0.12993           6 cpi_logfd         -0.16239         0.014803         -0.00006           pri_num <th colspan="7">AR-Koeffizientenschätzer</th>	AR-Koeffizientenschätzer						
pri_num	Lag	Variable	cpi_logfd	pri_num	costs_log		
costs_log	1	cpi_logfd	-0.09653	0.00117	-0.00004		
2         cpi_logfd         0.06368         -0.02285         0.00016           pri_num         0.10740         0.34915         0.00012           costs_log         72.97058         23.17990         -0.07266           3         cpi_logfd         0.06891         -0.00202         0.00003           pri_num         0.14671         0.10945         -0.00009           costs_log         49.71882         -77.15029         -0.04648           4         cpi_logfd         0.06093         0.03091         -0.00003           pri_num         0.00261         -0.04031         -0.00001           costs_log         -36.87800         -84.20262         0.07435           5         cpi_logfd         0.09695         -0.07156         -0.00006           pri_num         -0.01406         0.03634         -0.00006           costs_log         36.90709         -10.89158         -0.12993           6         cpi_logfd         -0.16239         0.00153         -0.00006           pri_num         -0.23889         0.14803         -0.00010           costs_log         -123.13790         106.15420         0.08831           7         cpi_logfd         0.0764         0.05966		pri_num	0.01876	0.27115	0.00002		
pri_num         0.10740         0.34915         0.00012           costs_log         72.97058         23.17990         -0.07266           3 cpi_logfd         0.06891         -0.00202         0.00009           pri_num         0.14671         0.10945         -0.00009           costs_log         49.71882         -77.15029         -0.04648           4 cpi_logfd         0.06093         0.03091         -0.00003           pri_num         0.00261         -0.04031         -0.00001           costs_log         -36.87800         -84.20262         0.07435           5 cpi_logfd         0.09695         -0.07156         -0.00006           pri_num         -0.01406         0.03634         -0.00006           costs_log         36.90709         -10.89158         -0.12993           6 cpi_logfd         -0.16239         0.00153         -0.00006           pri_num         -0.23889         0.14803         -0.00010           costs_log         -123.13790         106.15420         0.08831           7 cpi_logfd         0.12193         -0.01237         0.00000           pri_num         -0.24687         -0.01587         -0.00020           costs_log         -67.75989         <		costs_log	-64.62345	23.55903	0.02616		
costs_log         72.97058         23.17990         -0.07266           3 cpi_logfd         0.06891         -0.00202         0.00003           pri_num         0.14671         0.10945         -0.00009           costs_log         49.71882         -77.15029         -0.04648           4 cpi_logfd         0.06093         0.03091         -0.00003           pri_num         0.00261         -0.04031         -0.00001           costs_log         -36.87800         -84.20262         0.07435           5 cpi_logfd         0.09695         -0.07156         -0.00006           pri_num         -0.01406         0.03634         -0.00006           costs_log         36.90709         -10.89158         -0.12993           6 cpi_logfd         -0.16239         0.00153         -0.00006           pri_num         -0.23889         0.14803         -0.00010           costs_log         -123.13790         106.15420         0.08831           7 cpi_logfd         0.12193         -0.01237         0.00000           pri_num         -0.24687         -0.01587         -0.00020           costs_log         -67.75989         6.18089         -0.02147           8 cpi_logfd         -0.00764	2	cpi_logfd	0.06368	-0.02285	0.00016		
3 cpi_logfd		pri_num	0.10740	0.34915	0.00012		
pri_num         0.14671         0.10945         -0.00009           costs_log         49.71882         -77.15029         -0.04648           4         cpi_logfd         0.06093         0.03091         -0.00001           pri_num         0.00261         -0.04031         -0.00001           costs_log         -36.87800         -84.20262         0.07435           5         cpi_logfd         0.09695         -0.07156         -0.00006           pri_num         -0.01406         0.03634         -0.00006           costs_log         36.90709         -10.89158         -0.12993           6         cpi_logfd         -0.16239         0.00153         -0.00006           pri_num         -0.23889         0.14803         -0.00010           costs_log         -123.13790         106.15420         0.08831           7         cpi_logfd         0.12193         -0.01237         0.00000           pri_num         -0.24687         -0.01587         -0.0020           costs_log         -67.75989         6.18089         -0.02147           8         cpi_logfd         -0.00764         0.05966         0.00012           pri_num         -0.28399         0.04915         -0.00027 <th></th> <th>costs_log</th> <th>72.97058</th> <th>23.17990</th> <th>-0.07266</th>		costs_log	72.97058	23.17990	-0.07266		
costs_log         49.71882         -77.15029         -0.04648           4         cpi_logfd         0.06093         0.03091         -0.00003           pri_num         0.00261         -0.04031         -0.00001           costs_log         -36.87800         -84.20262         0.07435           5         cpi_logfd         0.09695         -0.07156         -0.00006           pri_num         -0.01406         0.03634         -0.00006           costs_log         36.90709         -10.89158         -0.12993           6         cpi_logfd         -0.16239         0.00153         -0.00006           pri_num         -0.23889         0.14803         -0.00010           costs_log         -123.13790         106.15420         0.08831           7         cpi_logfd         0.12193         -0.01237         0.00000           pri_num         -0.24687         -0.01587         -0.00020           costs_log         -67.75989         6.18089         -0.02147           8         cpi_logfd         -0.00764         0.05966         0.00012           pri_num         -0.28399         0.04915         -0.00027           costs_log         -155.85820         -52.51994         0.0	3	cpi_logfd	0.06891	-0.00202	0.00003		
4         cpi_logfd         0.06093         0.03091         -0.00003           pri_num         0.00261         -0.04031         -0.00001           costs_log         -36.87800         -84.20262         0.07435           5         cpi_logfd         0.09695         -0.07156         -0.00006           pri_num         -0.01406         0.03634         -0.00006           costs_log         36.90709         -10.89158         -0.12993           6         cpi_logfd         -0.16239         0.00153         -0.00006           pri_num         -0.23889         0.14803         -0.00010           costs_log         -123.13790         106.15420         0.08831           7         cpi_logfd         0.12193         -0.01237         0.00000           pri_num         -0.24687         -0.01587         -0.00020           costs_log         -67.75989         6.18089         -0.02147           8         cpi_logfd         -0.00764         0.05966         0.00012           pri_num         -0.28399         0.04915         -0.00027           costs_log         -155.85820         -52.51994         0.03718           9         cpi_logfd         0.00766         -0.01994		pri_num	0.14671	0.10945	-0.00009		
pri_num         0.00261         -0.04031         -0.00001           costs_log         -36.87800         -84.20262         0.07435           5         cpi_logfd         0.09695         -0.07156         -0.00006           pri_num         -0.01406         0.03634         -0.00006           costs_log         36.90709         -10.89158         -0.12993           6         cpi_logfd         -0.16239         0.00153         -0.00006           pri_num         -0.23889         0.14803         -0.00010           costs_log         -123.13790         106.15420         0.08831           7         cpi_logfd         0.12193         -0.01237         0.00000           pri_num         -0.24687         -0.01587         -0.00020           costs_log         -67.75989         6.18089         -0.02147           8         cpi_logfd         -0.00764         0.05966         0.00012           pri_num         -0.28399         0.04915         -0.00027           costs_log         -155.85820         -52.51994         0.03718           9         cpi_logfd         0.00766         -0.01994         -0.0001           pri_num         0.13689         -0.09389         0.00009<		costs_log	49.71882	-77.15029	-0.04648		
costs_log         -36.87800         -84.20262         0.07435           5         cpi_logfd         0.09695         -0.07156         -0.00006           pri_num         -0.01406         0.03634         -0.00006           costs_log         36.90709         -10.89158         -0.12993           6         cpi_logfd         -0.16239         0.00153         -0.00006           pri_num         -0.23889         0.14803         -0.00010           costs_log         -123.13790         106.15420         0.08831           7         cpi_logfd         0.12193         -0.01237         0.00000           pri_num         -0.24687         -0.01587         -0.00020           costs_log         -67.75989         6.18089         -0.02147           8         cpi_logfd         -0.00764         0.05966         0.00012           pri_num         -0.28399         0.04915         -0.00027           costs_log         -155.85820         -52.51994         0.03718           9         cpi_logfd         0.00766         -0.01994         -0.00011           pri_num         0.13689         -0.09389         0.00009           costs_log         100.24552         75.05747         0.19	4	cpi_logfd	0.06093	0.03091	-0.00003		
5         cpi_logfd         0.09695         -0.07156         -0.00006           pri_num         -0.01406         0.03634         -0.00006           costs_log         36.90709         -10.89158         -0.12993           6         cpi_logfd         -0.16239         0.00153         -0.00006           pri_num         -0.23889         0.14803         -0.00010           costs_log         -123.13790         106.15420         0.08831           7         cpi_logfd         0.12193         -0.01237         0.00000           pri_num         -0.24687         -0.01587         -0.00020           costs_log         -67.75989         6.18089         -0.02147           8         cpi_logfd         -0.00764         0.05966         0.00012           pri_num         -0.28399         0.04915         -0.00027           costs_log         -155.85820         -52.51994         0.03718           9         cpi_logfd         0.00766         -0.01994         -0.00011           pri_num         0.13689         -0.09389         0.00009           costs_log         10.24552         75.05747         0.19816           10         cpi_logfd         0.07160         0.06081		pri_num	0.00261	-0.04031	-0.00001		
pri_num         -0.01406         0.03634         -0.00006           costs_log         36.90709         -10.89158         -0.12993           6 cpi_logfd         -0.16239         0.00153         -0.00006           pri_num         -0.23889         0.14803         -0.00010           costs_log         -123.13790         106.15420         0.08831           7 cpi_logfd         0.12193         -0.01237         0.00000           pri_num         -0.24687         -0.01587         -0.00020           costs_log         -67.75989         6.18089         -0.02147           8 cpi_logfd         -0.00764         0.05966         0.00012           pri_num         -0.28399         0.04915         -0.00027           costs_log         -155.85820         -52.51994         0.03718           9 cpi_logfd         0.00766         -0.01994         -0.0001           pri_num         0.13689         -0.09389         0.00009           costs_log         100.24552         75.05747         0.19816           10 cpi_logfd         0.07160         0.06081         0.00005           pri_num         0.06948         -0.08472         0.004937           11 cpi_logfd         0.06260		costs_log	-36.87800	-84.20262	0.07435		
costs_log         36.90709         -10.89158         -0.12993           6 cpi_logfd         -0.16239         0.00153         -0.00006           pri_num         -0.23889         0.14803         -0.00010           costs_log         -123.13790         106.15420         0.08831           7 cpi_logfd         0.12193         -0.01237         0.00000           pri_num         -0.24687         -0.01587         -0.00020           costs_log         -67.75989         6.18089         -0.02147           8 cpi_logfd         -0.00764         0.05966         0.00012           pri_num         -0.28399         0.04915         -0.00027           costs_log         -155.85820         -52.51994         0.03718           9 cpi_logfd         0.00766         -0.01994         -0.00011           pri_num         0.13689         -0.09389         0.00009           costs_log         100.24552         75.05747         0.19816           10 cpi_logfd         0.07160         0.06081         0.00005           pri_num         0.06948         -0.08472         0.04937           11 cpi_logfd         0.06260         -0.01007         -0.04937           11 cpi_logfd         0.06260	5	cpi_logfd	0.09695	-0.07156	-0.00006		
6         cpi_logfd         -0.16239         0.00153         -0.00006           pri_num         -0.23889         0.14803         -0.00010           costs_log         -123.13790         106.15420         0.08831           7         cpi_logfd         0.12193         -0.01237         0.00000           pri_num         -0.24687         -0.01587         -0.00020           costs_log         -67.75989         6.18089         -0.02147           8         cpi_logfd         -0.00764         0.05966         0.00012           pri_num         -0.28399         0.04915         -0.00027           costs_log         -155.85820         -52.51994         0.03718           9         cpi_logfd         0.00766         -0.01994         -0.00011           pri_num         0.13689         -0.09389         0.00009           costs_log         100.24552         75.05747         0.19816           10         cpi_logfd         0.07160         0.06081         0.00005           pri_num         0.06948         -0.08472         0.04937           11         cpi_logfd         0.06260         -0.01007         -0.04937           11         cpi_logfd         0.06260         <		pri_num	-0.01406	0.03634	-0.00006		
pri_num         -0.23889         0.14803         -0.00010           costs_log         -123.13790         106.15420         0.08831           7         cpi_logfd         0.12193         -0.01237         0.00000           pri_num         -0.24687         -0.01587         -0.00020           costs_log         -67.75989         6.18089         -0.02147           8         cpi_logfd         -0.00764         0.05966         0.00012           pri_num         -0.28399         0.04915         -0.00027           costs_log         -155.85820         -52.51994         0.03718           9         cpi_logfd         0.00766         -0.01994         -0.00011           pri_num         0.13689         -0.09389         0.00009           costs_log         100.24552         75.05747         0.19816           10         cpi_logfd         0.07160         0.06081         0.00005           pri_num         0.06948         -0.08472         0.04937           11         cpi_logfd         0.06260         -0.01007         -0.04937           11         cpi_logfd         0.06260         -0.01007         -0.00005		costs_log	36.90709	-10.89158	-0.12993		
costs_log         -123.13790         106.15420         0.08831           7         cpi_logfd         0.12193         -0.01237         0.00000           pri_num         -0.24687         -0.01587         -0.00020           costs_log         -67.75989         6.18089         -0.02147           8         cpi_logfd         -0.00764         0.05966         0.00012           pri_num         -0.28399         0.04915         -0.00027           costs_log         -155.85820         -52.51994         0.03718           9         cpi_logfd         0.00766         -0.01994         -0.00011           pri_num         0.13689         -0.09389         0.00009           costs_log         100.24552         75.05747         0.19816           10         cpi_logfd         0.07160         0.06081         0.00005           pri_num         0.06948         -0.08472         0.04937           11         cpi_logfd         0.06260         -0.01007         -0.04937           11         cpi_logfd         0.06260         -0.01007         -0.00005           pri_num         -0.14909         -0.04040         0.00007	6	cpi_logfd	-0.16239	0.00153	-0.00006		
7         cpi_logfd         0.12193         -0.01237         0.00000           pri_num         -0.24687         -0.01587         -0.00020           costs_log         -67.75989         6.18089         -0.02147           8         cpi_logfd         -0.00764         0.05966         0.00012           pri_num         -0.28399         0.04915         -0.00027           costs_log         -155.85820         -52.51994         0.03718           9         cpi_logfd         0.00766         -0.01994         -0.00011           pri_num         0.13689         -0.09389         0.00009           costs_log         100.24552         75.05747         0.19816           10         cpi_logfd         0.07160         0.06081         0.00005           pri_num         0.06948         -0.08472         0.00009           costs_log         -126.95463         16.65571         -0.04937           11         cpi_logfd         0.06260         -0.01007         -0.00005           pri_num         -0.14909         -0.04040         0.00007		pri_num	-0.23889	0.14803	-0.00010		
pri_num         -0.24687         -0.01587         -0.00020           costs_log         -67.75989         6.18089         -0.02147           8 cpi_logfd         -0.00764         0.05966         0.00012           pri_num         -0.28399         0.04915         -0.00027           costs_log         -155.85820         -52.51994         0.03718           9 cpi_logfd         0.00766         -0.01994         -0.00011           pri_num         0.13689         -0.09389         0.00009           costs_log         100.24552         75.05747         0.19816           10 cpi_logfd         0.07160         0.06081         0.00005           pri_num         0.06948         -0.08472         0.00009           costs_log         -126.95463         16.65571         -0.04937           11 cpi_logfd         0.06260         -0.01007         -0.00005           pri_num         -0.14909         -0.04040         0.00007		costs_log	-123.13790	106.15420	0.08831		
costs_log         -67.75989         6.18089         -0.02147           8 cpi_logfd         -0.00764         0.05966         0.00012           pri_num         -0.28399         0.04915         -0.00027           costs_log         -155.85820         -52.51994         0.03718           9 cpi_logfd         0.00766         -0.01994         -0.00011           pri_num         0.13689         -0.09389         0.00009           costs_log         100.24552         75.05747         0.19816           10 cpi_logfd         0.07160         0.06081         0.00005           pri_num         0.06948         -0.08472         0.00009           costs_log         -126.95463         16.65571         -0.04937           11 cpi_logfd         0.06260         -0.01007         -0.00005           pri_num         -0.14909         -0.04040         0.00007	7	cpi_logfd	0.12193	-0.01237	0.00000		
8         cpi_logfd         -0.00764         0.05966         0.00012           pri_num         -0.28399         0.04915         -0.00027           costs_log         -155.85820         -52.51994         0.03718           9         cpi_logfd         0.00766         -0.01994         -0.00011           pri_num         0.13689         -0.09389         0.00009           costs_log         100.24552         75.05747         0.19816           10         cpi_logfd         0.07160         0.06081         0.00005           pri_num         0.06948         -0.08472         0.00009           costs_log         -126.95463         16.65571         -0.04937           11         cpi_logfd         0.06260         -0.01007         -0.00005           pri_num         -0.14909         -0.04040         0.00007		pri_num	-0.24687	-0.01587	-0.00020		
pri_num         -0.28399         0.04915         -0.00027           costs_log         -155.85820         -52.51994         0.03718           9 cpi_logfd         0.00766         -0.01994         -0.00011           pri_num         0.13689         -0.09389         0.00009           costs_log         100.24552         75.05747         0.19816           10 cpi_logfd         0.07160         0.06081         0.00005           pri_num         0.06948         -0.08472         0.00009           costs_log         -126.95463         16.65571         -0.04937           11 cpi_logfd         0.06260         -0.01007         -0.00005           pri_num         -0.14909         -0.04040         0.00007		costs_log	-67.75989	6.18089	-0.02147		
costs_log         -155.85820         -52.51994         0.03718           9 cpi_logfd         0.00766         -0.01994         -0.00011           pri_num         0.13689         -0.09389         0.00009           costs_log         100.24552         75.05747         0.19816           10 cpi_logfd         0.07160         0.06081         0.00005           pri_num         0.06948         -0.08472         0.00009           costs_log         -126.95463         16.65571         -0.04937           11 cpi_logfd         0.06260         -0.01007         -0.00005           pri_num         -0.14909         -0.04040         0.00007	8	cpi_logfd	-0.00764	0.05966	0.00012		
9         cpi_logfd         0.00766         -0.01994         -0.00011           pri_num         0.13689         -0.09389         0.00009           costs_log         100.24552         75.05747         0.19816           10         cpi_logfd         0.07160         0.06081         0.00005           pri_num         0.06948         -0.08472         0.00009           costs_log         -126.95463         16.65571         -0.04937           11         cpi_logfd         0.06260         -0.01007         -0.00005           pri_num         -0.14909         -0.04040         0.00007		pri_num	-0.28399	0.04915	-0.00027		
pri_num         0.13689         -0.09389         0.00009           costs_log         100.24552         75.05747         0.19816           10         cpi_logfd         0.07160         0.06081         0.00005           pri_num         0.06948         -0.08472         0.00009           costs_log         -126.95463         16.65571         -0.04937           11         cpi_logfd         0.06260         -0.01007         -0.00005           pri_num         -0.14909         -0.04040         0.00007		costs_log	-155.85820	-52.51994	0.03718		
costs_log         100.24552         75.05747         0.19816           10         cpi_logfd         0.07160         0.06081         0.00005           pri_num         0.06948         -0.08472         0.00009           costs_log         -126.95463         16.65571         -0.04937           11         cpi_logfd         0.06260         -0.01007         -0.00005           pri_num         -0.14909         -0.04040         0.00007	9	cpi_logfd	0.00766	-0.01994	-0.00011		
10         cpi_logfd         0.07160         0.06081         0.00005           pri_num         0.06948         -0.08472         0.00009           costs_log         -126.95463         16.65571         -0.04937           11         cpi_logfd         0.06260         -0.01007         -0.00005           pri_num         -0.14909         -0.04040         0.00007		pri_num	0.13689	-0.09389	0.00009		
pri_num         0.06948         -0.08472         0.00009           costs_log         -126.95463         16.65571         -0.04937           11         cpi_logfd         0.06260         -0.01007         -0.00005           pri_num         -0.14909         -0.04040         0.00007		costs_log	100.24552	75.05747	0.19816		
costs_log         -126.95463         16.65571         -0.04937           11         cpi_logfd         0.06260         -0.01007         -0.00005           pri_num         -0.14909         -0.04040         0.00007	10	cpi_logfd	0.07160	0.06081	0.00005		
11 cpi_logfd		pri_num	0.06948	-0.08472	0.00009		
pri_num -0.14909 -0.04040 0.00007		costs_log	-126.95463	16.65571	-0.04937		
	11	cpi_logfd	0.06260	-0.01007	-0.00005		
		pri_num	-0.14909	-0.04040	0.00007		
costs_log   -39.55052   -108.35129   -0.12740		costs_log	-39.55052	-108.35129	-0.12740		
<b>12 cpi_logfd</b> -0.05923 -0.03773 0.00001	12	cpi_logfd	-0.05923	-0.03773	0.00001		
pri_num         -0.27105         0.08531         0.00004		pri_num	-0.27105	0.08531	0.00004		
costs_log         49.90896         -0.89297         -0.07340		costs_log	49.90896	-0.89297	-0.07340		

Schematische Darstellung der Parameterschätzer													
Variable/Lag	С	AR1	AR2	AR3	AR4	AR5	AR6	AR7	AR8	AR9	AR10	AR11	AR12
cpi_logfd													
pri_num		.+.	.+.										
costs_log	+									+			
	+ ist > 2*Std.fehler, - ist < -2*Std.fehler, . ist zwischen, * ist N/A												

		Modellpara	meterschätz	zwerte		
Gleichung	Parameter	Schätzung	Standard Fehler	t-Wert	Pr >  t	Variable
cpi_logfd	CONST1	0.00127	0.00165	0.77	0.4413	1
	AR1_1_1	-0.09653	0.09119	-1.06	0.2919	cpi_logfd(t-1)
	AR1_1_2	0.00117	0.06548	0.02	0.9857	pri_num(t-1)
	AR1_1_3	-0.00004	0.00009	-0.49	0.6248	costs_log(t-1)
	AR2_1_1	0.06368	0.09173	0.69	0.4889	cpi_logfd(t-2)
	AR2_1_2	-0.02285	0.06689	-0.34	0.7332	pri_num(t-2)
	AR2_1_3	0.00016	0.00009	1.82	0.0713	costs_log(t-2)
	AR3_1_1	0.06891	0.09062	0.76	0.4485	cpi_logfd(t-3)
	AR3_1_2	-0.00202	0.07022	-0.03	0.9771	pri_num(t-3)
	AR3_1_3	0.00003	0.00009	0.38	0.7074	costs_log(t-3)
	AR4_1_1	0.06093	0.09022	0.68	0.5008	cpi_logfd(t-4)
	AR4_1_2	0.03091	0.06681	0.46	0.6445	pri_num(t-4)
	AR4_1_3	-0.00003	0.00009	-0.33	0.7436	costs_log(t-4)
	AR5_1_1	0.09695	0.08803	1.10	0.2729	cpi_logfd(t-5)
	AR5_1_2	-0.07156	0.06537	-1.09	0.2758	pri_num(t-5)
	AR5_1_3	-0.00006	0.00008	-0.67	0.5024	costs_log(t-5)
	AR6_1_1	-0.16239	0.08830	-1.84	0.0684	cpi_logfd(t-6)
	AR6_1_2	0.00153	0.06407	0.02	0.9810	pri_num(t-6)
	AR6_1_3	-0.00006	0.00009	-0.69	0.4899	costs_log(t-6)
	AR7_1_1	0.12193	0.09044	1.35	0.1802	cpi_logfd(t-7)
	AR7_1_2	-0.01237	0.06445	-0.19	0.8481	pri_num(t-7)
	AR7_1_3	0.00000	0.00009	0.04	0.9666	costs_log(t-7)
	AR8_1_1	-0.00764	0.09189	-0.08	0.9339	cpi_logfd(t-8)
	AR8 1 2	0.05966	0.06316	0.94	0.3468	pri_num(t-8)
	AR8_1_3	0.00012	0.00009	1.35	0.1783	costs log(t-8)
	AR9_1_1	0.00766	0.09485	0.08	0.9358	cpi logfd(t-9)
	AR9_1_2	-0.01994	0.06361	-0.31	0.7545	pri_num(t-9)
	AR9_1_3	-0.00011	0.00009	-1.31	0.1914	costs_log(t-9)
	AR10 1 1	0.07160	0.09414	0.76	0.4484	cpi_logfd(t-10)
	AR10_1_2	0.06081	0.06409	0.95	0.3446	pri_num(t-10)
	AR10 1 3	0.00005	0.00009	0.60	0.5523	costs log(t-10)
	AR11_1_1	0.06260	0.09356	0.67	0.5047	cpi_logfd(t-11)
	AR11_1_2	-0.01007	0.06218	-0.16	0.8716	pri_num(t-11)
	AR11 1 3	-0.00005	0.00009	-0.62	0.5351	costs log(t-11)
	AR12_1_1	-0.05923	0.09279	-0.64	0.5245	cpi_logfd(t-12)
	AR12_1_2	-0.03773	0.05858	-0.64	0.5207	pri_num(t-12)
	AR12 1 3	0.00001	0.00009	0.12	0.9016	costs_log(t-12)
pri_num	CONST2	0.00261	0.00223	1.17	0.2452	1
h	AR1_2_1	0.01876	0.12355	0.15	0.8795	cpi_logfd(t-1)
	AR1_2_2	0.27115	0.08872	3.06	0.0028	pri_num(t-1)
	AR1_2_3	0.00002	0.00012	0.19	0.8494	costs log(t-1)
	AR2_2_1	0.10740	0.12429	0.86	0.3892	cpi_logfd(t-2)
	AR2_2_2	0.34915	0.09063	3.85	0.0002	pri_num(t-2)
	AR2_2_3	0.00012	0.00012	0.99	0.3241	costs_log(t-2)
	AR3 2 1	0.14671	0.12277	1.19	0.2344	cpi_logfd(t-3)
	AR3_2_2	0.10945	0.09515	1.15	0.2523	pri_num(t-3)
	AR3 2 3	-0.00009	0.00012	-0.71	0.4780	costs_log(t-3)
	AR4 2 1	0.00261	0.12223	0.02	0.4760	cpi_logfd(t-4)
	AR4_2_1 AR4_2_2	-0.04031	0.12223	-0.45	0.6569	pri_num(t-4)
	AR4_2_2 AR4_2_3	-0.04031	0.09052	-0.45	0.0309	costs_log(t-4)
	AR4_2_3 AR5_2_1	-0.01406	0.00012	-0.11	0.9164	costs_log(t-4)
	AN9_4_1	-0.01400	0.11921	-0.12	0.8004	opi_logiu(t-5)

		Modellpara	meterschätz	zwerte		
Gleichung	Parameter	Schätzung	Standard Fehler	t-Wert	Pr >  t	Variable
	AR5_2_2	0.03634	0.08857	0.41	0.6823	pri_num(t-5)
	AR5_2_3	-0.00006	0.00011	-0.51	0.6090	costs_log(t-5)
	AR6_2_1	-0.23889	0.11963	-2.00	0.0481	cpi_logfd(t-6)
	AR6_2_2	0.14803	0.08681	1.71	0.0907	pri_num(t-6)
	AR6_2_3	-0.00010	0.00012	-0.83	0.4079	costs_log(t-6)
	AR7_2_1	-0.24687	0.12254	-2.01	0.0462	cpi_logfd(t-7)
	AR7_2_2	-0.01587	0.08732	-0.18	0.8561	pri_num(t-7)
	AR7_2_3	-0.00020	0.00012	-1.73	0.0858	costs_log(t-7)
	AR8_2_1	-0.28399	0.12450	-2.28	0.0243	cpi_logfd(t-8)
	AR8_2_2	0.04915	0.08557	0.57	0.5668	pri_num(t-8)
	AR8_2_3	-0.00027	0.00012	-2.32	0.0218	costs_log(t-8)
	AR9_2_1	0.13689	0.12851	1.07	0.2889	cpi_logfd(t-9)
	AR9_2_2	-0.09389	0.08619	-1.09	0.2782	pri_num(t-9)
	AR9 2 3	0.00009	0.00012	0.75	0.4519	costs log(t-9)
	AR10_2_1	0.06948	0.12755	0.54	0.5870	cpi_logfd(t-10)
	AR10_2_2	-0.08472	0.08683	-0.98	0.3312	pri_num(t-10)
	AR10 2 3	0.00009	0.00012	0.71	0.4821	costs_log(t-10)
	AR11_2_1	-0.14909	0.12676	-1.18	0.2419	cpi_logfd(t-11)
	AR11_2_2	-0.04040	0.08424	-0.48	0.6324	pri_num(t-11)
	AR11_2_3	0.00007	0.00012	0.57	0.5718	costs_log(t-11)
	AR12_2_1	-0.27105	0.12572	-2.16	0.0331	cpi_logfd(t-12)
	AR12_2_2	0.08531	0.07937	1.07	0.2846	pri_num(t-12)
	AR12_2_3	0.00004	0.00012	0.36	0.7158	costs_log(t-12)
costs_log	CONST3	5.53115	1.68083	3.29	0.0013	1
00010_109	AR1_3_1	-64.62345	93.09266	-0.69	0.4889	cpi_logfd(t-1)
	AR1_3_2	23.55903	66.85363	0.35	0.7252	pri_num(t-1)
	AR1 3 3	0.02616	0.09022	0.29	0.7724	costs_log(t-1)
	AR2_3_1	72.97058	93.64868	0.78	0.4374	cpi_logfd(t-2)
	AR2_3_2	23.17990	68.29208	0.34	0.7349	pri_num(t-2)
	AR2 3 3	-0.07266	0.08899	-0.82	0.4159	costs_log(t-2)
	AR3 3 1	49.71882	92.50933	0.54	0.5920	cpi_logfd(t-3)
	AR3_3_2	-77.15029	71.69255	-1.08	0.2840	pri_num(t-3)
	AR3_3_3	-0.04648	0.09022	-0.52	0.6074	costs_log(t-3)
	AR4 3 1	-36.87800	92.10163	-0.40	0.6896	cpi_logfd(t-4)
	AR4_3_1	-84.20262	68.20780	-1.23	0.0090	pri_num(t-4)
	AR4_3_2 AR4_3_3	0.07435	0.08976	0.83	0.4091	costs log(t-4)
	AR5 3 1	36.90709	89.86785	0.41	0.6820	cpi_logfd(t-5)
	AR5 3 2	-10.89158	66.73968	-0.16	0.8706	pri num(t-5)
	AR5_3_3	-0.12993	0.08631	-1.51	0.1349	costs_log(t-5)
	AR6_3_1	-123.13790	90.14449	-1.37	0.1349	cpi_logfd(t-6)
	AR6 3 2	106.15420	65.40985	1.62	0.1743	pri num(t-6)
	AR6_3_2 AR6_3_3	0.08831	0.08713	1.02	0.1072	costs log(t-6)
	AR7_3_1	-67.75989	92.33490	-0.73	0.3129	costs_log(t-6)
	AR7_3_1 AR7_3_2	6.18089	65.79853	0.09	0.4043	pri_num(t-7)
	AR7_3_2 AR7_3_3	-0.02147	0.08769	-0.24	0.9253	costs_log(t-7)
	AR7_3_3 AR8_3_1	-155.85820	93.80966	-1.66	0.0070	cpi_logfd(t-8)
	AR8_3_2	-52.51994	64.47776	-0.81	0.4169	pri_num(t-8)
	AR8_3_3	0.03718	0.08780	0.42	0.6727	costs_log(t-8)
	AR9_3_1	100.24552	96.83397	1.04	0.3026	cpi_logfd(t-9)
	AR9_3_2	75.05747	64.94267	1.16	0.2501	pri_num(t-9)
	AR9_3_3	0.19816	0.08893	2.23	0.0277	costs_log(t-9)

23.01.25, 13:11 Ergebnisse: MVTS.sas

		Modellpara	meterschätz	zwerte		
Gleichung	Parameter	Schätzung	Standard Fehler	t-Wert	Pr >  t	Variable
	AR10_3_1	-126.95463	96.11068	-1.32	0.1890	cpi_logfd(t-10)
	AR10_3_2	16.65571	65.42897	0.25	0.7995	pri_num(t-10)
	AR10_3_3	-0.04937	0.09090	-0.54	0.5881	costs_log(t-10)
	AR11_3_1	-39.55052	95.51569	-0.41	0.6796	cpi_logfd(t-11)
	AR11_3_2	-108.35129	63.47610	-1.71	0.0904	pri_num(t-11)
	AR11_3_3	-0.12740	0.08961	-1.42	0.1577	costs_log(t-11)
	AR12_3_1	49.90896	94.73289	0.53	0.5993	cpi_logfd(t-12)
	AR12_3_2	-0.89297	59.80243	-0.01	0.9881	pri_num(t-12)
	AR12_3_3	-0.07340	0.08888	-0.83	0.4105	costs_log(t-12)

Kovarianzen der Innovationen										
Variable cpi_logfd pri_num costs_log										
cpi_logfd	0.00002	-0.00000	0.00031							
pri_num	-0.00000	0.00003	-0.00142							
costs_log	0.00031	-0.00142	17.47227							

Log-Likelihood	1282.825
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Informati	Informationskriterien					
AICC	-1623.65					
HQC	-2186.42					
AIC	-2331.65					
SBC	-1974.07					
FPEC	1.682E-8					

	Kreuzko	ovarianzen d	ler Residue	n
Lag	Variable	cpi_logfd	pri_num	costs_log
0	cpi_logfd	0.00001	-0.00000	0.00023
	pri_num	-0.00000	0.00002	-0.00109
	costs_log	0.00023	-0.00109	13.35460
1	cpi_logfd	-0.00000	-0.00000	0.00020
	pri_num	-0.00000	-0.00000	-0.00001
	costs_log	-0.00008	0.00012	-0.33323
2	cpi_logfd	0.00000	0.00000	-0.00000
	pri_num	0.00000	0.00000	-0.00014
	costs_log	0.00005	-0.00085	0.09484
3	cpi_logfd	-0.00000	0.00000	-0.00055
	pri_num	0.00000	0.00000	0.00093
	costs_log	-0.00031	-0.00077	0.97025
4	cpi_logfd	0.00000	0.00000	-0.00085
	pri_num	-0.00000	-0.00000	-0.00043
	costs_log	0.00040	-0.00016	0.12223
5	cpi_logfd	-0.00000	0.00000	-0.00028
	pri_num	-0.00000	-0.00000	-0.00093
	costs_log	0.00016	0.00085	0.23364
6	cpi_logfd	0.00000	0.00000	0.00034
	pri_num	0.00000	-0.00000	0.00109
	costs_log	0.00012	-0.00070	-0.07068
7	cpi_logfd	-0.00000	-0.00000	-0.00042
	pri_num	0.00000	-0.00000	0.00126

	Kreuzko	ovarianzen d	ler Residue	n
Lag	Variable	cpi_logfd	pri_num	costs_log
	costs_log	0.00042	-0.00006	-0.56606
8	cpi_logfd	0.00000	-0.00000	-0.00057
	pri_num	0.00000	0.00000	0.00023
	costs_log	0.00069	0.00129	-0.91221
9	cpi_logfd	-0.00000	0.00000	-0.00020
	pri_num	-0.00000	0.00000	0.00033
	costs_log	0.00019	-0.00186	0.15122
10	cpi_logfd	-0.00000	-0.00000	-0.00047
	pri_num	0.00000	0.00000	0.00035
	costs_log	0.00031	0.00025	1.14597
11	cpi_logfd	-0.00000	-0.00000	-0.00012
	pri_num	0.00000	0.00000	0.00025
	costs_log	0.00073	0.00019	-0.43598
12	cpi_logfd	-0.00000	-0.00000	0.00038
	pri_num	-0.00000	0.00000	-0.00107
	costs_log	-0.00048	-0.00141	-0.37459
13	cpi_logfd	-0.00000	-0.00000	-0.00016
	pri_num	-0.00000	-0.00000	0.00314
	costs_log	-0.00063	0.00051	0.37715

	Kreuzko	rrelationen	der Residue	en en
Lag	Variable	cpi_logfd	pri_num	costs_log
0	cpi_logfd	1.00000	-0.08365	0.01783
	pri_num	-0.08365	1.00000	-0.06140
	costs_log	0.01783	-0.06140	1.00000
1	cpi_logfd	-0.00155	-0.01796	0.01542
	pri_num	-0.03010	-0.01839	-0.00036
	costs_log	-0.00579	0.00658	-0.02495
2	cpi_logfd	0.01102	0.00228	-0.00035
	pri_num	0.03810	0.00810	-0.00776
	costs_log	0.00394	-0.04811	0.00710
3	cpi_logfd	-0.00804	0.00384	-0.04201
	pri_num	0.02362	0.03755	0.05257
	costs_log	-0.02390	-0.04356	0.07265
4	cpi_logfd	0.00060	0.02249	-0.06520
	pri_num	-0.01223	-0.06468	-0.02444
	costs_log	0.03080	-0.00901	0.00915
5	cpi_logfd	-0.00842	0.00380	-0.02119
	pri_num	-0.02124	-0.03758	-0.05230
	costs_log	0.01205	0.04784	0.01750
6	cpi_logfd	0.02730	0.03681	0.02563
	pri_num	0.02444	-0.05441	0.06167
	costs_log	0.00939	-0.03939	-0.00529
7	cpi_logfd	-0.05749	-0.02280	-0.03246
	pri_num	0.01109	-0.05835	0.07097
	costs_log	0.03241	-0.00328	-0.04239
8	cpi_logfd	0.01901	-0.03980	-0.04330
	pri_num	0.02363	0.00763	0.01309
	costs_log	0.05237	0.07291	-0.06831
9	cpi_logfd	-0.03835	0.05075	-0.01556
	pri_num	-0.05047	0.01020	0.01834
	costs_log	0.01418	-0.10518	0.01132

	Kreuzko	rrelationen	der Residue	en
Lag	Variable	cpi_logfd	pri_num	costs_log
10	cpi_logfd	-0.01620	-0.05017	-0.03611
	pri_num	0.03227	0.01781	0.01983
	costs_log	0.02360	0.01421	0.08581
11	cpi_logfd	-0.03218	-0.00431	-0.00926
	pri_num	0.05662	0.01593	0.01388
	costs_log	0.05611	0.01091	-0.03265
12	cpi_logfd	-0.01093	-0.00866	0.02877
	pri_num	-0.08461	0.13765	-0.06032
	costs_log	-0.03654	-0.07981	-0.02805
13	cpi_logfd	-0.01748	-0.17375	-0.01244
	pri_num	-0.01533	-0.05232	0.17699
	costs_log	-0.04795	0.02877	0.02824

		Schem	atisch	e Dars	tellung	der K	reuzko	rrelatio	nen de	er Resi	duen			
Variable/Lag	0	1	2	3	4	5	6	7	8	9	10	11	12	13
cpi_logfd	+													
pri_num	.+.													+
costs_log	+													
		+	ist > 2	Std.fe	hler, -	ist < -2	± 2*Std.fe	hler, .	ist zw	ischen				

Portmanteau-Test für Kreuzkorrelationen der Residuen							
Bis zu Lag DF Chi-Quadrat Pr > ChiSq							
13	9	39.60	<.0001				

Univariates Modell ANOVA-Diagnose							
Variable R-Quadrat Standard Abweichung F-Wert Pr > I							
cpi_logfd	0.1928	0.00409	0.80	0.7820			
pri_num	0.6408	0.00555	5.95	<.0001			
costs_log	0.2379	4.17998	1.04	0.4221			

Univariates Modell Weißes-Rauschen-Diagnose								
	Durbin	Norma	ARCH					
Variable	Watson	Chi-Quadrat	Pr > ChiSq	F-Wert	Pr > F			
cpi_logfd	2.00111	68.70	<.0001	0.31	0.5815			
pri_num	2.03651	1.35	0.5097	0.03	0.8730			
costs_log	2.03043	6.62	0.0365	0.03	0.8731			

	Univariates Modell AR-Diagnosen								
	Al	₹1	1 AR2		AR3		AR4		
Variable	F-Wert	Pr > F	F-Wert	Pr > F	F-Wert	Pr > F	F-Wert	Pr > F	
cpi_logfd	0.00	0.9846	0.01	0.9906	0.01	0.9987	0.01	0.9998	
pri_num	0.05	0.8197	0.03	0.9701	0.09	0.9632	0.22	0.9265	
costs_log	0.10	0.7543	0.11	0.8983	0.33	0.8007	0.26	0.9057	

Orthogonalisierte Impuls-Response							
Lag	Variable Response\Impuls cpi_logfd pri_num costs_log						
0	cpi_logfd	0.00409	0.00000	0.00000			
	pri_num	-0.00046	0.00553	0.00000			
	costs_log	0.07452	-0.25130	4.17176			

Orthogonalisierte Impuls-Response							
	Variable						
Lag	Response\Impuls	cpi_logfd	pri_num	costs_log			
1	cpi_logfd	-0.00040	0.00002	-0.00018			
	pri_num	-0.00005	0.00149	0.00010			
	costs_log	-0.27358	0.12366	0.10913			
2	cpi_logfd	0.00033	-0.00017	0.00067			
	pri_num	0.00026	0.00231	0.00051			
	costs_log	0.30011	0.18369	-0.28634			
3	cpi_logfd	0.00017	-0.00002	0.00009			
	pri_num	0.00054	0.00179	-0.00018			
	costs_log	0.21800	-0.31763	-0.25184			
4	cpi_logfd	0.00023	0.00016	-0.00014			
	pri_num	0.00030	0.00122	0.00009			
	costs_log	-0.09415	-0.54130	0.35395			
5	cpi_logfd	0.00046	-0.00043	-0.00024			
	pri_num	0.00029	0.00127	-0.00013			
	costs_log	0.12619	-0.27284	-0.48689			
6	cpi_logfd	-0.00071	-0.00010	-0.00012			
	pri_num	-0.00077	0.00173	-0.00040			
	costs_log	-0.56857	0.36442	0.25359			
7	cpi_logfd	0.00075	-0.00032	0.00000			
	pri_num	-0.00093	0.00122	-0.00103			
	costs_log	-0.29055	-0.00883	-0.00781			
8	cpi_logfd	-0.00032	0.00026	0.00040			
	pri_num	-0.00170	0.00175	-0.00158			
	costs_log	-0.74644	-0.19164	0.13294			
9	cpi_logfd	0.00006	-0.00008	-0.00045			
	pri_num	-0.00024	0.00080	-0.00061			
	costs_log	0.52399	0.29686	0.62593			
10	cpi_logfd	0.00021	0.00026	0.00030			
	pri_num	-0.00070	0.00065	-0.00044			
	costs_log	-0.53665	0.12321	-0.07573			
11	cpi_logfd	0.00027	0.00002	-0.00013			
	pri_num	-0.00111	0.00070	-0.00004			
	costs_log	0.13336	-0.57006	-0.43644			
12	cpi_logfd	0.00003	-0.00015	0.00023			
	pri_num	-0.00174	0.00104	-0.00006			
	costs_log	0.33992	-0.13329	-0.23958			
13	cpi_logfd	0.00009	-0.00004	-0.00006			
	pri_num	-0.00092	0.00078	-0.00020			
	costs_log	-0.11910	-0.03957	0.09415			
	9						

Prognosen								
Variable	Beob	Zeit	Prognose	Standard Fehler	95% Konfidenzgrenze			
cpi_logfd	170	FEB2019	0.00051	0.00409	-0.00751	0.00853		
	171	MAR2019	0.00003	0.00412	-0.00804	0.00810		
	172	APR2019	0.00304	0.00419	-0.00517	0.01125		
	173	MAY2019	0.00266	0.00419	-0.00556	0.01088		
	174	JUN2019	0.00185	0.00421	-0.00640	0.01009		
	175	JUL2019	0.00191	0.00426	-0.00644	0.01025		
pri_num	170	FEB2019	-0.00029	0.00555	-0.01116	0.01059		
	171	MAR2019	0.00253	0.00575	-0.00873	0.01380		

	Prognosen							
Variable	Beob	Zeit	Prognose	Standard Fehler	95% Konfidenzgrenzer			
	172	APR2019	0.00307	0.00622	-0.00912	0.01526		
	173	MAY2019	0.00155	0.00650	-0.01119	0.01428		
	174	JUN2019	0.00440	0.00662	-0.00857	0.01737		
	175	JUL2019	0.00193	0.00675	-0.01129	0.01515		
costs_log	170	FEB2019	4.06016	4.17998	-4.13246	12.25278		
	171	MAR2019	5.65081	4.19217	-2.56570	13.86732		
	172	APR2019	4.72937	4.21665	-3.53511	12.99385		
	173	MAY2019	3.33620	4.24169	-4.97736	11.64977		
	174	JUN2019	7.26311	4.29175	-1.14857	15.67478		
	175	JUL2019	4.36856	4.32973	-4.11754	12.85467		





























