# Complete Results for Lag Length Selection

# COMPLETE RESULTS FOR LAG LENGTH SELECTION

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This paper presents the detailed results of employing the various lag-length-selection criteria outlined in "Lag Length Selection Criteria: Some Empirical Results for the St. Louis Equation." Tables 1 through 6 are for a maximum lag of 8; tables 7 through 12, a maximum lag of 12; and tables 13 through 18, a maximum lag of 16. Table 19 contains the likelihood ratio test results of all the alternative lag specifications considered.

Table 1
Pagano-Hartley T-Statistics for Lag Length Selection

| Lag | $\dot{M}$ with $L_{\dot{G}} = 8$ | $\dot{G}$ with $L_{\dot{M}} = 8$ |
|---|---|---|
| 0 | 5.10 | 2.36* |
| 1 | 4.06 | 0.95 |
| 2 | 1.84 | -1.89 |
| 3 | -1.16 | 0.81 |
| 4 | 0.42 | -0.14 |
| 5 | -2.48* | -1.33 |
| 6 | -0.41 | 1.44 |
| 7 | -0.25 | -0.18 |
| 8 | 0.81 | -1.91 |

*First significant t-statistic at the 5 percent level.

Table 2

MALLOW'S C STATISTIC

M VARS ARE M1 DATA IS GROWTH RATES -- II/62 TO III/82

LM = # OF LAGS OF M
LE0-LE6 = # OF LAGS OF E

| OBS | LM | LE0 | LE1 | LE2 | LE3 | LE4 | LE5 | LE6 | LE7 | LE8 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 29.7803 | 31.0866 | 29.4874 | 29.6953 | 31.6693 | 32.8433 | 31.8100 | 33.0174 | 31.4439 |
| 2 | 1 | 16.8418 | 18.1228 | 15.2973 | 16.2714 | 18.2647 | 18.4433 | 18.4781 | 20.4633 | 16.9514 |
| 3 | 2 | 12.8337 | 14.0971 | 11.4544 | 12.7150 | 14.7060 | 14.6480 | 15.3549 | 17.2544 | 15.5676 |
| 4 | 3 | 13.2864 | 14.5193 | 11.8879 | 13.1227 | 15.1139 | 15.2582 | 15.7538 | 17.7193 | 16.2146 |
| 5 | 4 | 15.2097 | 16.4976 | 13.8573 | 15.0910 | 17.0819 | 17.2162 | 17.7289 | 19.6874 | 18.0429 |
| 6 | 5 | 10.3327 | 11.4246 | 9.8446 | 11.1945 | 13.1388 | 13.6045 | 13.4087 | 15.3018 | 13.8804 |
| 7 | 6 | 12.3326 | 13.4237 | 11.8570 | 13.1929 | 15.1359 | 15.5688 | 15.3172 | 17.2309 | 15.7082 |
| 8 | 7 | 13.8368 | 14.8412 | 13.3431 | 14.6381 | 16.6202 | 16.9814 | 17.0122 | 18.9629 | 17.6480 |
| 9 | 8 | 15.6897 | 16.7868 | 15.2082 | 16.5473 | 18.5283 | 18.7523 | 18.6893 | 20.6571 | 19.0001 |

Minimum value circled.

Table 3

FINAL PREDICTION ERROR STATISTIC

M VARS ARE M1 DATA IS GROWTH RATES -- II/62 TO III/86

LM = # OF LAGS OF M
LE0-LE8 = # OF LAGS OF E

| OBS | LM | LE0 | LE1 | LE2 | LE3 | LE4 | LE5 | LE6 | LE7 | LE8 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 16.4621 | 16.7586 | 16.5855 | 16.6967 | 17.1071 | 17.3878 | 17.2749 | 17.5608 | 17.3247 |
| 2 | 1 | 14.4869 | 14.7282 | 14.2854 | 14.4643 | 14.8233 | 14.8649 | 14.8737 | 15.2444 | 14.5578 |
| 3 | 2 | 13.8639 | 14.0644 | 13.6375 | 13.8470 | 14.1910 | 14.1659 | 14.2766 | 14.6167 | 14.2521 |
| 4 | 3 | 13.9486 | 14.1635 | 13.7015 | 13.9055 | 14.2520 | 14.2582 | 14.3252 | 14.6806 | 14.3376 |
| 5 | 4 | 14.2820 | 14.5124 | 14.0380 | 14.2477 | 14.6037 | 14.6093 | 14.6825 | 15.0468 | 14.6672 |
| 6 | 5 | 13.4279 | 13.5994 | (13.2701) | 13.4883 | 13.8173 | 13.8611 | 13.7647 | 14.0932 | 13.7195 |
| 7 | 6 | 13.7631 | 13.9396 | 13.6101 | 13.8278 | 14.1661 | 14.2057 | 14.0965 | 14.4390 | 14.0347 |
| 8 | 7 | 14.0159 | 14.1792 | 13.8570 | 14.0670 | 14.4204 | 14.4450 | 14.3921 | 14.7517 | 14.3844 |
| 9 | 8 | 14.3400 | 14.5259 | 14.1805 | 14.4056 | 14.7689 | 14.7656 | 14.6915 | 15.0645 | 14.6086 |

Minimum value circled.

Table 4

GEWEKE-MEESE BAYESIAN ESTIMATION CRITERION

M VARS ARE M1  DATA IS GROWTH RATES -- II/62 TO III/82

LM = # OF LAGS OF M
LE0-LE8 = # OF LAGS OF E

| OBS | LM | LE0 | LE1 | LE2 | LE3 | LE4 | LE5 | LE6 | LE7 | LE8 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 18.3699 | 19.2976 | 19.7804 | 20.5360 | 21.5689 | 22.4792 | 23.0329 | 23.9482 | 24.4013 |
| 2 | 1 | (17.1316) | 18.0298 | 18.2691 | 19.1339 | 20.1425 | 20.8612 | 21.5532 | 22.5670 | 22.6547 |
| 3 | 2 | 17.2151 | 18.1018 | 18.3722 | 19.2531 | 20.2540 | 20.9222 | 21.7137 | 22.7061 | 23.0868 |
| 4 | 3 | 17.9752 | 18.8568 | 19.1205 | 19.9968 | 20.9990 | 21.6975 | 22.4518 | 23.4566 | 23.8613 |
| 5 | 4 | 18.9660 | 19.8593 | 20.1161 | 20.9952 | 22.0022 | 22.6996 | 23.4583 | 24.4670 | 24.8433 |
| 6 | 5 | 18.8712 | 19.7209 | 20.1310 | 21.0187 | 22.0088 | 22.7493 | 23.3719 | 24.3581 | 24.7534 |
| 7 | 6 | 19.8684 | 20.7206 | 21.1260 | 22.0179 | 23.0126 | 23.7487 | 24.3608 | 25.3555 | 25.7282 |
| 8 | 7 | 20.7886 | 21.6279 | 22.0434 | 22.9270 | 23.9321 | 24.6554 | 25.3162 | 26.3220 | 26.7283 |
| 9 | 8 | 21.7696 | 22.6269 | 23.0250 | 23.9193 | 24.9292 | 25.6289 | 26.2721 | 27.2859 | 27.6231 |

Minimum value circled.

Table 5

SCHWARZ BAYESIAN INFORMATION CRITERION

M VARS ARE M1 DATA IS GROWTH RATES -- II/62 TO III/82

LM = # OF LAGS OF M
LE0-LE8 = # OF LAGS OF E

| OBS | LM | LE0 | LE1 | LE2 | LE3 | LE4 | LE5 | LE6 | LE7 | LE8 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2.92635 | 2.98625 | 3.01804 | 3.06704 | 3.13376 | 3.19260 | 3.22878 | 3.28801 | 3.31740 |
| 2 | 1 | 2.84058 | 2.89928 | 2.91106 | 2.96595 | 3.03303 | 3.07852 | 3.12193 | 3.18948 | 3.18644 |
| 3 | 2 | (2.83880) | 2.89689 | 2.90709 | 2.96490 | 3.03213 | 3.07317 | 3.12388 | 3.19047 | 3.20837 |
| 4 | 3 | 2.88720 | 2.94494 | 2.95434 | 3.01181 | 3.07923 | 3.12260 | 3.17033 | 3.23799 | 3.25762 |
| 5 | 4 | 2.95327 | 3.01184 | 3.02129 | 3.07893 | 3.14654 | 3.18997 | 3.23812 | 3.30590 | 3.32373 |
| 6 | 5 | 2.93417 | 2.98955 | 3.00845 | 3.06709 | 3.13423 | 3.18056 | 3.21684 | 3.28381 | 3.30041 |
| 7 | 6 | 3.00151 | 3.05707 | 3.07607 | 3.13499 | 3.20232 | 3.24838 | 3.28404 | 3.35153 | 3.36672 |
| 8 | 7 | 3.06253 | 3.11704 | 3.13710 | 3.19530 | 3.26338 | 3.30846 | 3.34828 | 3.41655 | 3.43502 |
| 9 | 8 | 3.12832 | 3.18424 | 3.20334 | 3.26235 | 3.33064 | 3.37391 | 3.41245 | 3.48122 | 3.49428 |

Minimum value circled.

Table 6

F-STATISTICS

M VARS ARE M1 DATA IS GROWTH RATES -- II/62 TO III/82

LM = # OF LAGS OF M
LE0-LE8 = # OF LAGS OF E

| OBS | LM | LE0 | LE1 | LE2 | LE3 | LE4 | LE5 | LE6 | LE7 | LE8 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2.67377 | 2.80577 | 2.74910 | 2.82272 | 3.05578 | 3.25849 | 3.28100 | 3.55748 | 3.55549 |
| 2 | 1 | 1.85612 | 1.93734 | 1.71518 | 1.77262 | 1.93315 | 1.94433 | 1.94201 | 2.18291 | 1.70734 |
| 3 | 2 | 1.55955 | 1.62286 | 1.37120 | 1.42863 | 1.57060 | 1.51645 | 1.54436 | 1.75062 | 1.42794 |
| 4 | 3 | 1.56049 | 1.62660 | 1.35344 | 1.41227 | 1.56821 | 1.53228 | 1.53625 | 1.78656 | 1.44292 |
| 5 | 4 | 1.68414 | 1.77251 | 1.48573 | 1.56566 | 1.76023 | 1.74517 | 1.78815 | 2.13748 | 1.76072 |
| 6 | 5 | 1.21206 | 1.24246 | 0.98273 | 1.02431 | 1.16269 | 1.10075 | 0.88173 | 1.07544 | 0.29346 |
| 7 | 6 | 1.33326 | 1.38042 | 1.10463 | 1.17042 | 1.35598 | 1.31376 | 1.07929 | 1.41029 | 0.35411 |
| 8 | 7 | 1.42631 | 1.48015 | 1.19187 | 1.27302 | 1.52405 | 1.49536 | 1.33738 | 1.98145 | 0.64805 |
| 9 | 8 | 1.58621 | 1.68382 | 1.36604 | 1.50947 | 1.88208 | 1.91744 | 1.84464 | 3.65707 | |

Table 7
Pagano-Hartley T-Statistics for Lag Length Selection

| Lag | $\dot{M}$ with $L_G^{\cdot} = 12$ | $\dot{G}$ with $L_M^{\cdot} = 12$ |
|---|---|---|
| 0 | 5.45 | 2.67 |
| 1 | 4.33 | 1.13 |
| 2 | 2.36 | -1.89 |
| 3 | -1.73 | 0.96 |
| 4 | 0.09 | 0.17 |
| 5 | -2.05 | -1.21 |
| 6 | -0.01 | 1.37 |
| 7 | -0.61 | 0.44 |
| 8 | 0.88 | -2.38 |
| 9 | 0.10 | -2.22* |
| 10 | -2.70* | -0.58 |
| 11 | -0.13 | 1.18 |
| 12 | 0.17 | 0.64 |

*First significant t-statistic at the 5 percent level.

Table 8

MALLOW'S C STATISTIC

DATA IS GROWTH RATES -- 1962 2 TO 1982 3

LM = # OF LAGS OF M
LE0-LE12 = # OF LAGS OF E

| OBS | LM | LE0 | LE1 | LE2 | LE3 | LE4 | LE5 | LE6 | LE7 | LE8 | LE9 | LE10 | LE11 | LE12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 40.4880 | 41.7371 | 39.7145 | 39.7264 | 41.6963 | 42.7893 | 41.4456 | 42.5851 | 40.6664 | 41.9840 | 43.0891 | 42.8691 | 43.0225 |
| 2 | 1 | 26.0630 | 27.2846 | 23.9057 | 24.7631 | 26.7544 | 26.7494 | 26.5819 | 28.5670 | 24.5240 | 23.0253 | 23.8480 | 25.3675 | 26.2782 |
| 3 | 2 | 21.3681 | 22.5693 | 19.3913 | 20.5705 | 22.5609 | 22.3013 | 22.8784 | 24.7714 | 22.7369 | 20.0959 | 19.3857 | 21.0457 | 22.7003 |
| 4 | 3 | 21.6428 | 22.8114 | 19.6414 | 20.7912 | 22.7819 | 22.7463 | 23.0890 | 25.0538 | 23.2241 | 19.2243 | 19.0426 | 20.1629 | 21.7123 |
| 5 | 4 | 23.5689 | 24.7928 | 21.6146 | 22.7632 | 24.7537 | 24.7077 | 25.0674 | 27.0255 | 25.0525 | 20.8685 | 20.9285 | 22.1075 | 23.7049 |
| 6 | 5 | 18.0834 | 19.0964 | (17.0882) | 18.3613 | 20.3045 | 20.6097 | 20.1956 | 22.0833 | 20.3673 | 18.4788 | 18.8372 | 20.5287 | 21.4865 |
| 7 | 6 | 20.0833 | 21.0953 | 19.0800 | 20.3594 | 22.3011 | 22.5698 | 22.0939 | 24.0039 | 22.1768 | 20.2616 | 20.7934 | 22.4733 | 23.4864 |
| 8 | 7 | 21.5570 | 22.4771 | 20.5564 | 21.7683 | 23.7510 | 23.9394 | 23.7700 | 25.7189 | 24.1155 | 22.0793 | 22.6082 | 24.1340 | 25.1179 |
| 9 | 8 | 23.3812 | 24.4073 | 22.3930 | 23.6569 | 25.6381 | 25.6710 | 25.3955 | 27.3631 | 25.3719 | 22.6139 | 23.3692 | 24.9432 | 26.3519 |
| 10 | 9 | 25.3453 | 26.4054 | 24.2412 | 25.5743 | 27.5556 | 27.6026 | 27.3889 | 29.3528 | 27.1420 | 24.5964 | 25.3678 | 26.9261 | 28.3423 |
| 11 | 10 | 21.1222 | 21.8236 | 20.3277 | 21.3474 | 23.3116 | 23.8766 | 23.9485 | 25.7576 | 22.4681 | 19.2810 | 20.8770 | 21.4893 | 23.0471 |
| 12 | 11 | 23.1058 | 23.8224 | 22.2916 | 23.3431 | 25.3081 | 25.8471 | 25.9478 | 27.7571 | 24.1421 | 21.2471 | 22.8587 | 23.4884 | 25.0304 |
| 13 | 12 | 25.1033 | 25.8208 | 24.2477 | 25.3325 | 27.3022 | 27.8310 | 27.9458 | 29.7561 | 26.0863 | 23.1547 | 24.8167 | 25.4156 | 27.0000 |

Minimum value circled.

Table 9

FINAL PREDICTION ERROR STATISTIC

DATA IS GROWTH RATES -- 1962 2 TO 1982 3

LM = # OF LAGS OF M
LE0-LE12 = # OF LAGS OF E

| OBS | LM | LE0 | LE1 | LE2 | LE3 | LE4 | LE5 | LE6 | LE7 | LE8 | LE9 | LE10 | LE11 | LE12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 16.4469 | 16.7451 | 16.5634 | 16.6721 | 17.0817 | 17.3623 | 17.2488 | 17.5362 | 17.3029 | 17.6186 | 17.9024 | 17.9456 | 18.0524 |
| 2 | 1 | 14.4773 | 14.7205 | 14.2683 | 14.4449 | 14.8032 | 14.8448 | 14.8529 | 15.2232 | 14.5419 | 14.2775 | 14.4218 | 14.6983 | 14.8625 |
| 3 | 2 | 13.8432 | 14.0652 | 13.6084 | 13.8163 | 14.1596 | 14.1352 | 14.2455 | 14.5855 | 14.2254 | 13.7267 | 13.5618 | 13.8430 | 14.1304 |
| 4 | 3 | 13.9244 | 14.1410 | 13.6680 | 13.8701 | 14.2157 | 14.2228 | 14.2890 | 14.6440 | 14.3063 | 13.5312 | 13.4527 | 13.6232 | 13.8835 |
| 5 | 4 | 14.2589 | 14.4901 | 14.0048 | 14.2126 | 14.5678 | 14.5743 | 14.6464 | 15.0105 | 14.6384 | 13.8085 | 13.7763 | 13.9645 | 14.2433 |
| 6 | 5 | 13.4193 | 13.5929 | 13.2610 | 13.4690 | 13.7983 | 13.8410 | 13.7452 | 14.0743 | 13.7108 | 13.2867 | 13.2940 | 13.5752 | 13.7057 |
| 7 | 6 | 13.7543 | 13.9329 | 13.5926 | 13.8080 | 14.1466 | 14.1850 | 14.0764 | 14.4194 | 14.0257 | 13.5860 | 13.6308 | 13.9187 | 14.0669 |
| 8 | 7 | 14.0103 | 14.1765 | 13.8427 | 14.0504 | 14.4039 | 14.4270 | 14.3738 | 14.7337 | 14.3762 | 13.9014 | 13.9478 | 14.2104 | 14.3564 |
| 9 | 8 | 14.3319 | 14.5213 | 14.1632 | 14.3864 | 14.7497 | 14.7442 | 14.6690 | 15.0421 | 14.5940 | 13.9491 | 14.0409 | 14.3166 | 14.5612 |
| 10 | 9 | 14.6866 | 14.8882 | 14.4947 | 14.7376 | 15.1114 | 15.1102 | 15.0474 | 15.4315 | 14.9266 | 14.3129 | 14.4132 | 14.6953 | 14.9510 |
| 11 | 10 | 13.9336 | 14.0468 | 13.7408 | 13.9018 | 14.2526 | 14.3272 | 14.2946 | 14.6277 | 13.8413 | 13.0288 | 13.2826 | 13.3075 | 13.5598 |
| 12 | 11 | 14.2843 | 14.4047 | 14.0858 | 14.2588 | 14.6207 | 14.6940 | 14.6688 | 15.0132 | 14.1344 | 13.3691 | 13.6360 | 13.6685 | 13.9267 |
| 13 | 12 | 14.6481 | 14.7734 | 14.4396 | 14.6258 | 15.0001 | 15.0754 | 15.0550 | 15.4114 | 14.4992 | 13.7069 | 13.9957 | 14.0242 | 14.3033 |

Minimum value circled.

Table 10

GEWEKE-MEESE BAYESIAN ESTIMATION CRITERION

DATA IS GROWTH RATES -- 1962 2 TO 1982 3

LM = # OF LAGS OF M
LE0-LE12 = # OF LAGS OF E

| OBS | LM | LE0 | LE1 | LE2 | LE3 | LE4 | LE5 | LE6 | LE7 | LE8 | LE9 | LE10 | LE11 | LE12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 18.4528 | 19.4148 | 19.9221 | 20.7082 | 21.7732 | 22.7161 | 23.3021 | 24.2515 | 24.7399 | 25.7151 | 26.6604 | 27.3985 | 28.1928 |
| 2 | 1 | 17.2525 | 18.1851 | 18.4683 | 19.3438 | 20.3845 | 21.1358 | 21.8598 | 22.9062 | 23.0311 | 23.5315 | 24.3886 | 25.3574 | 26.2302 |
| 3 | 2 | 17.3583 | 18.2791 | 18.5731 | 19.4853 | 20.5185 | 21.2201 | 22.0440 | 23.0692 | 23.4865 | 23.7949 | 24.3967 | 25.3771 | 26.3603 |
| 4 | 3 | 18.1479 | 19.0637 | 19.3502 | 20.2576 | 21.2919 | 22.0240 | 22.8105 | 23.8479 | 24.2899 | 24.3708 | 25.0506 | 25.9403 | 26.9030 |
| 5 | 4 | 19.1724 | 20.0992 | 20.3790 | 21.2891 | 22.3282 | 23.0594 | 23.8500 | 24.8914 | 25.3068 | 25.3483 | 26.0670 | 26.9694 | 27.9445 |
| 6 | 5 | 19.1236 | 20.0078 | 20.4410 | 21.3595 | 22.3825 | 23.1548 | 23.8106 | 24.8300 | 25.2665 | 25.6615 | 26.4196 | 27.4020 | 28.2611 |
| 7 | 6 | 20.1532 | 21.0399 | 21.4684 | 22.3910 | 23.4186 | 24.1863 | 24.8317 | 25.8594 | 26.2736 | 26.6590 | 27.4473 | 28.4323 | 29.3038 |
| 8 | 7 | 21.1089 | 21.9832 | 22.4212 | 23.3355 | 24.3732 | 25.1281 | 25.8213 | 26.8600 | 27.3070 | 27.6669 | 28.4557 | 29.4181 | 30.2865 |
| 9 | 8 | 22.1203 | 23.0132 | 23.4329 | 24.3583 | 25.4009 | 26.1312 | 26.8065 | 27.8530 | 28.2292 | 28.4567 | 29.2831 | 30.2552 | 31.2008 |
| 10 | 9 | 23.1574 | 24.0586 | 24.4508 | 25.3906 | 26.4385 | 27.1718 | 27.8574 | 28.9092 | 29.2426 | 29.4996 | 30.3313 | 31.3055 | 32.2572 |
| 11 | 10 | 23.2347 | 24.0682 | 24.5480 | 25.4263 | 26.4615 | 27.2668 | 27.9861 | 29.0023 | 29.1242 | 29.2397 | 30.2023 | 30.9858 | 31.9451 |
| 12 | 11 | 24.2711 | 25.1093 | 25.5803 | 26.4667 | 27.5075 | 28.3104 | 29.0353 | 30.0572 | 30.1115 | 30.2698 | 31.2399 | 32.0284 | 32.9896 |
| 13 | 12 | 25.3150 | 26.1556 | 26.6165 | 27.5116 | 28.5589 | 29.3622 | 30.0904 | 31.1183 | 31.1524 | 31.2948 | 32.2792 | 33.0636 | 34.0381 |

Minimum value circled.

Table 11

SCHWARZ BAYESIAN INFORMATION CRITERION

DATA IS GROWTH RATES -- 1962 2 TO 1982 3

LM = # OF LAGS OF M
LE0-LE12 = # OF LAGS OF E

| OBS | LM | LE0 | LE1 | LE2 | LE3 | LE4 | LE5 | LE6 | LE7 | LE8 | LE9 | LE10 | LE11 | LE12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2.92543 | 2.98544 | 3.01671 | 3.06556 | 3.13227 | 3.19114 | 3.22726 | 3.28660 | 3.31614 | 3.37726 | 3.43640 | 3.48208 | 3.53139 |
| 2 | 1 | 2.83992 | 2.89875 | 2.90986 | 2.96461 | 3.03168 | 3.07717 | 3.12053 | 3.18809 | 3.18534 | 3.21015 | 3.26348 | 3.32585 | 3.38044 |
| 3 | 2 | (2.83731) | 2.89553 | 2.90496 | 2.96268 | 3.02992 | 3.07100 | 3.12170 | 3.18834 | 3.20650 | 3.21408 | 3.24538 | 3.30938 | 3.37351 |
| 4 | 3 | 2.88547 | 2.94334 | 2.95189 | 3.00926 | 3.07668 | 3.12011 | 3.16780 | 3.23550 | 3.25543 | 3.24311 | 3.28078 | 3.33697 | 3.39958 |
| 5 | 4 | 2.95165 | 3.01030 | 3.01892 | 3.07646 | 3.14408 | 3.18757 | 3.23566 | 3.30349 | 3.32177 | 3.30688 | 3.34813 | 3.40540 | 3.46896 |
| 6 | 5 | 2.93353 | 2.98907 | 3.00717 | 3.06566 | 3.13286 | 3.17911 | 3.21543 | 3.28247 | 3.29979 | 3.31195 | 3.35619 | 3.42091 | 3.47437 |
| 7 | 6 | 3.00088 | 3.05659 | 3.07479 | 3.13356 | 3.20095 | 3.24692 | 3.28261 | 3.35017 | 3.36608 | 3.37792 | 3.42500 | 3.48979 | 3.54437 |
| 8 | 7 | 3.06213 | 3.11685 | 3.13607 | 3.19412 | 3.26223 | 3.30721 | 3.34701 | 3.41532 | 3.43445 | 3.44465 | 3.49188 | 3.55452 | 3.60881 |
| 9 | 8 | 3.12775 | 3.18393 | 3.20212 | 3.26102 | 3.32934 | 3.37245 | 3.41093 | 3.47973 | 3.49328 | 3.49197 | 3.54252 | 3.60604 | 3.66715 |
| 10 | 9 | 3.19525 | 3.25203 | 3.26852 | 3.32851 | 3.39705 | 3.44055 | 3.48008 | 3.54908 | 3.55970 | 3.56170 | 3.61277 | 3.67632 | 3.73783 |
| 11 | 10 | 3.18577 | 3.23713 | 3.25849 | 3.31362 | 3.38212 | 3.43104 | 3.47255 | 3.53947 | 3.52820 | 3.51178 | 3.57525 | 3.62138 | 3.68451 |
| 12 | 11 | 3.25390 | 3.30567 | 3.32676 | 3.38256 | 3.45132 | 3.50011 | 3.54228 | 3.60947 | 3.59323 | 3.58173 | 3.64576 | 3.69250 | 3.75565 |
| 13 | 12 | 3.32242 | 3.37443 | 3.39517 | 3.45166 | 3.52073 | 3.56962 | 3.61225 | 3.67972 | 3.66288 | 3.65095 | 3.71615 | 3.76263 | 3.82686 |

Minimum value circled.

Table 12

F-STATISTICS

DATA IS GROWTH RATES -- 1962 2 TO 1982 3

LM = # OF LAGS OF M
LE0-LE12 = # OF LAGS OF E

| OBS | LM | LE0 | LE1 | LE2 | LE3 | LE4 | LE5 | LE6 | LE7 | LE8 | LE9 | LE10 | LE11 | LE12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2.56200 | 2.64074 | 2.57793 | 2.60602 | 2.73482 | 2.83101 | 2.80254 | 2.91677 | 2.85415 | 2.99894 | 3.14922 | 3.22070 | 3.33521 |
| 2 | 1 | 1.95926 | 2.01294 | 1.85265 | 1.88815 | 1.98708 | 1.98608 | 1.97540 | 2.09794 | 1.83493 | 1.71610 | 1.75754 | 1.86396 | 1.93438 |
| 3 | 2 | 1.74400 | 1.78901 | 1.61957 | 1.66160 | 1.75338 | 1.72361 | 1.74240 | 1.85143 | 1.69549 | 1.46892 | 1.36547 | 1.45870 | 1.57003 |
| 4 | 3 | 1.74489 | 1.79057 | 1.61271 | 1.65507 | 1.75188 | 1.73415 | 1.73926 | 1.86099 | 1.70955 | 1.35202 | 1.27660 | 1.31629 | 1.41248 |
| 5 | 4 | 1.82845 | 1.88383 | 1.70081 | 1.75078 | 1.85961 | 1.84718 | 1.86196 | 2.00196 | 1.83771 | 1.44259 | 1.39285 | 1.45639 | 1.58812 |
| 6 | 5 | 1.53070 | 1.56091 | 1.41695 | 1.46008 | 1.55363 | 1.54355 | 1.47659 | 1.59028 | 1.39703 | 1.14788 | 1.09302 | 1.19109 | 1.21236 |
| 7 | 6 | 1.61574 | 1.65267 | 1.50500 | 1.55729 | 1.66437 | 1.65921 | 1.59116 | 1.72763 | 1.51768 | 1.25129 | 1.22418 | 1.35333 | 1.41441 |
| 8 | 7 | 1.67982 | 1.71732 | 1.57042 | 1.62631 | 1.75008 | 1.74495 | 1.70637 | 1.87189 | 1.67950 | 1.38492 | 1.37259 | 1.52234 | 1.62358 |
| 9 | 8 | 1.77383 | 1.82715 | 1.67093 | 1.74284 | 1.88651 | 1.87918 | 1.83955 | 2.04034 | 1.79648 | 1.37342 | 1.39486 | 1.58864 | 1.83797 |
| 10 | 9 | 1.88969 | 1.95753 | 1.78778 | 1.88119 | 2.05051 | 2.06026 | 2.04321 | 2.29410 | 2.02029 | 1.59940 | 1.67356 | 1.98153 | 2.44744 |
| 11 | 10 | 1.58016 | 1.60181 | 1.44397 | 1.48613 | 1.63116 | 1.65296 | 1.61856 | 1.82251 | 1.24469 | 0.45619 | 0.46925 | 0.16311 | 0.02355 |
| 12 | 11 | 1.70045 | 1.73520 | 1.57196 | 1.63431 | 1.81201 | 1.85588 | 1.84968 | 2.12618 | 1.42842 | 0.56177 | 0.61958 | 0.24420 | 0.03043 |
| 13 | 12 | 1.84194 | 1.89280 | 1.72477 | 1.81473 | 2.03778 | 2.11872 | 2.15763 | 2.55123 | 1.77158 | 0.71822 | 0.90833 | 0.41564 | |

Table 13
Pagano-Hartley T-Statistics for Lag Length Selection

| Lag | $\dot{M}$ with $L_G^{\cdot} = 16$ | $\dot{G}$ with $L_M^{\cdot} = 16$ |
|---|---|---|
| 0 | 4.85 | 2.70 |
| 1 | 4.51 | 1.05 |
| 2 | 2.50 | -1.82 |
| 3 | -2.19 | 0.96 |
| 4 | 0.30 | 0.22 |
| 5 | -1.98 | -0.88 |
| 6 | -0.42 | 1.33 |
| 7 | -0.42 | 0.58 |
| 8 | 0.76 | -2.31 |
| 9 | -0.47 | -2.22* |
| 10 | -2.60* | -0.31 |
| 11 | 0.09 | 0.93 |
| 12 | -0.12 | 0.99 |
| 13 | -0.57 | 1.16 |
| 14 | 0.41 | 1.01 |
| 15 | -0.84 | -1.23 |
| 16 | 0.19 | 1.28 |

*First significant t-statistic at the 5 percent level.

Table 14

MALLOW'S C STATISTIC

M VARS ARE M1 DATA IS GROWTH RATES -- II/62 TO III/82

LM = # OF LAGS OF M
LE0-LE16 = # OF LAGS OF E

| OBS | LM | LE0 | LE1 | LE2 | LE3 | LE4 | LE5 | LE6 | LE7 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 38.5180 | 39.7669 | 37.8704 | 37.9303 | 39.9022 | 41.0080 | 39.7240 | 40.8660 |
| 2 | 1 | 24.3455 | 25.5671 | 22.3430 | 23.2324 | 25.2251 | 25.2532 | 25.1258 | 27.1097 |
| 3 | 2 | 19.8411 | 21.0437 | 18.0175 | 19.2170 | 21.2073 | 20.9793 | 21.5794 | 23.4705 |
| 4 | 3 | 20.1660 | 21.3355 | 18.3215 | 19.4931 | 21.4836 | 21.4747 | 21.8459 | 23.8087 |
| 5 | 4 | 22.0829 | 23.3120 | 20.2885 | 21.4588 | 23.4490 | 23.4292 | 23.8190 | 25.7741 |
| 6 | 5 | 16.6379 | 17.6548 | 15.7791 | 17.0753 | 19.0150 | 19.3539 | 18.9767 | 20.8610 |
| 7 | 6 | 18.6378 | 19.6539 | 17.7709 | 19.0736 | 21.0119 | 21.3153 | 20.8777 | 22.7843 |
| 8 | 7 | 20.1010 | 21.0232 | 19.2361 | 20.4729 | 22.4536 | 22.6794 | 22.5475 | 24.4941 |
| 9 | 8 | 21.9418 | 22.9643 | 21.0902 | 22.3747 | 24.3541 | 24.4314 | 24.1979 | 26.1631 |
| 10 | 9 | 23.8922 | 24.9584 | 22.9136 | 24.2726 | 26.2518 | 26.3463 | 26.1958 | 28.1585 |
| 11 | 10 | 19.6876 | 20.3911 | 19.0075 | 20.0610 | 22.0295 | 22.6433 | 22.7751 | 24.5863 |
| 12 | 11 | 21.6703 | 22.3903 | 20.9712 | 22.0563 | 24.0257 | 24.6135 | 24.7746 | 26.5857 |
| 13 | 12 | 23.6661 | 24.3871 | 22.9352 | 24.0491 | 26.0220 | 26.6012 | 26.7736 | 28.5836 |
| 14 | 13 | 25.5978 | 26.2931 | 24.8718 | 25.8655 | 27.8268 | 28.5111 | 28.5816 | 30.3901 |
| 15 | 14 | 27.5902 | 28.2890 | 26.8543 | 27.8547 | 29.8224 | 30.4923 | 30.5812 | 32.3860 |
| 16 | 15 | 27.6637 | 28.4649 | 27.1431 | 28.0825 | 30.0409 | 31.2566 | 31.0923 | 32.7510 |
| 17 | 16 | 28.9796 | 29.8767 | 28.5556 | 29.6262 | 31.5798 | 32.8094 | 33.0302 | 34.6901 |

| OBS | LE8 | LE9 | LE10 | LE11 | LE12 | LE13 | LE14 | LE15 | LE16 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 38.9973 | 40.3116 | 41.4206 | 41.2567 | 41.4701 | 43.3186 | 45.0507 | 46.3351 | 47.4749 |
| 2 | 23.1425 | 21.6708 | 22.4983 | 24.0353 | 24.9867 | 26.4480 | 28.1780 | 29.2679 | 29.2223 |
| 3 | 21.4792 | 18.8826 | 18.2099 | 19.8828 | 21.5528 | 23.2413 | 25.1141 | 24.8344 | 24.9758 |
| 4 | 22.0145 | 18.0817 | 17.9263 | 19.0772 | 20.6470 | 21.9334 | 23.9078 | 23.2328 | 22.1647 |
| 5 | 23.8285 | 19.7096 | 19.8014 | 21.0129 | 22.6352 | 23.9327 | 25.9047 | 25.1945 | 24.0730 |
| 6 | 19.1570 | 17.3258 | 17.7108 | 19.4224 | 20.4194 | 20.8669 | 22.8551 | 23.3727 | 22.1672 |
| 7 | 20.9706 | 19.1131 | 19.6681 | 21.3688 | 22.4193 | 22.8173 | 24.7925 | 25.3575 | 23.9931 |
| 8 | 22.9055 | 20.9260 | 21.4778 | 23.0281 | 24.0502 | 24.6756 | 26.6180 | 27.3183 | 25.8150 |
| 9 | 24.2040 | 21.5220 | 22.2951 | 23.8906 | 25.3202 | 26.0503 | 27.9258 | 28.2169 | 27.2342 |
| 10 | 26.0075 | 23.5114 | 24.2907 | 25.8655 | 27.3040 | 28.0386 | 29.9039 | 30.1264 | 29.0136 |
| 11 | 21.3574 | 18.2362 | 19.8336 | 20.4769 | 22.0511 | 21.9573 | 23.0714 | 23.5283 | 24.2488 |
| 12 | 23.0300 | 20.2011 | 21.8144 | 22.4762 | 24.0363 | 23.9572 | 25.0534 | 25.4890 | 26.2403 |
| 13 | 24.9670 | 22.1187 | 23.7790 | 24.4130 | 26.0116 | 25.9508 | 27.0533 | 27.4560 | 28.2257 |
| 14 | 26.9613 | 23.9616 | 25.7066 | 26.4116 | 28.0112 | 27.9370 | 28.9536 | 29.3462 | 29.9023 |
| 15 | 28.9601 | 25.8620 | 27.6460 | 28.4106 | 30.0019 | 29.8914 | 30.9324 | 31.2025 | 31.7353 |
| 16 | 29.6454 | 26.6969 | 28.6086 | 29.6493 | 30.8445 | 31.2522 | 32.3546 | 32.8265 | 33.0360 |
| 17 | 31.3728 | 28.4343 | 30.3390 | 31.4828 | 32.5119 | 33.1747 | 34.1522 | 34.6376 | 34.9999 |

Minimum value circled.

Table 15

FINAL PREDICTION ERROR STATISTIC

M VARS ARE M1 DATA IS GROWTH RATES -- II/62 TO III/82

LM = # OF LAGS OF M
LE0-LE12 = # OF LAGS OF E

| OBS | LM | LE0 | LE1 | LE2 | LE3 | LE4 | LE5 | LE6 | LE7 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 16.4621 | 16.7586 | 16.5855 | 16.6967 | 17.1071 | 17.3878 | 17.2749 | 17.5608 |
| 2 | 1 | 14.4869 | 14.7282 | 14.2854 | 14.4643 | 14.8233 | 14.8649 | 14.8737 | 15.2444 |
| 3 | 2 | 13.8639 | 14.0844 | 13.6375 | 13.8470 | 14.1910 | 14.1659 | 14.2766 | 14.6167 |
| 4 | 3 | 13.9486 | 14.1635 | 13.7015 | 13.9055 | 14.2520 | 14.2582 | 14.3252 | 14.6806 |
| 5 | 4 | 14.2820 | 14.5124 | 14.0380 | 14.2477 | 14.6037 | 14.6093 | 14.6825 | 15.0468 |
| 6 | 5 | 13.4279 | 13.5994 | (13.2781) | 13.4883 | 13.8173 | 13.8611 | 13.7647 | 14.0932 |
| 7 | 6 | 13.7631 | 13.9396 | 13.6101 | 13.8278 | 14.1661 | 14.2057 | 14.0965 | 14.4390 |
| 8 | 7 | 14.0159 | 14.1792 | 13.8570 | 14.0670 | 14.4204 | 14.4450 | 14.3921 | 14.7517 |
| 9 | 8 | 14.3400 | 14.5259 | 14.1805 | 14.4056 | 14.7689 | 14.7658 | 14.6915 | 15.0645 |
| 10 | 9 | 14.6923 | 14.8921 | 14.5072 | 14.7531 | 15.1269 | 15.1286 | 15.0713 | 15.4556 |
| 11 | 10 | 13.9225 | 14.0314 | 13.7347 | 13.8988 | 14.2502 | 14.3297 | 14.3026 | 14.6356 |
| 12 | 11 | 14.2727 | 14.3890 | 14.0794 | 14.2557 | 14.6183 | 14.6963 | 14.6770 | 15.0213 |
| 13 | 12 | 14.6358 | 14.7570 | 14.4345 | 14.6232 | 14.9980 | 15.0785 | 15.0637 | 15.4194 |
| 14 | 13 | 14.9972 | 15.1178 | 14.7949 | 14.9645 | 15.3479 | 15.4556 | 15.4190 | 15.7855 |
| 15 | 14 | 15.3818 | 15.5083 | 15.1763 | 15.3540 | 15.7514 | 15.8614 | 15.8310 | 16.2096 |
| 16 | 15 | 15.3777 | 15.5213 | 15.1976 | 15.3589 | 15.7569 | 15.9916 | 15.8937 | 16.2395 |
| 17 | 16 | 15.6315 | 15.7985 | 15.4657 | 15.6609 | 16.0684 | 16.3130 | 16.3096 | 16.6683 |

| OBS | LE8 | LE9 | LE10 | LE11 | LE12 | LE13 | LE14 | LE15 | LE16 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 17.3247 | 17.6382 | 17.9202 | 17.9670 | 18.0796 | 18.5127 | 18.9348 | 19.2755 | 19.5930 |
| 2 | 14.5578 | 14.2873 | 14.4289 | 14.7072 | 14.8760 | 15.1493 | 15.4851 | 15.6932 | 15.6546 |
| 3 | 14.2521 | 13.7469 | 13.5804 | 13.8634 | 14.1532 | 14.4545 | 14.8036 | 14.6902 | 14.6581 |
| 4 | 14.3376 | 13.5556 | 13.4753 | 13.6495 | 13.9130 | 14.1223 | 14.4865 | 14.2649 | 13.9329 |
| 5 | 14.6672 | 13.8291 | 13.7968 | 13.9893 | 14.2726 | 14.4920 | 14.8677 | 14.6346 | 14.2835 |
| 6 | 13.7195 | 13.2931 | 13.3000 | 13.5845 | 13.7198 | 13.7312 | 14.0928 | 14.1170 | 13.7145 |
| 7 | 14.0347 | 13.5927 | 13.6371 | 13.9284 | 14.0814 | 14.0841 | 14.4546 | 14.4935 | 14.0431 |
| 8 | 14.3844 | 13.9065 | 13.9524 | 14.2187 | 14.3696 | 14.4268 | 14.8012 | 14.8770 | 14.3815 |
| 9 | 14.6086 | 13.9621 | 14.0533 | 14.3326 | 14.5801 | 14.6626 | 15.0294 | 15.0004 | 14.6248 |
| 10 | 14.9480 | 14.3277 | 14.4253 | 14.7097 | 14.9687 | 15.0577 | 15.4351 | 15.3906 | 14.9723 |
| 11 | 13.8418 | (13.0232) | 13.2755 | 13.3017 | 13.5560 | 13.3875 | 13.5226 | 13.4794 | 13.5006 |
| 12 | 14.1333 | 13.3629 | 13.6283 | 13.6626 | 13.9232 | 13.7571 | 13.8945 | 13.8476 | 13.8817 |
| 13 | 14.4961 | 13.7026 | 13.9894 | 14.0203 | 14.3011 | 14.1387 | 14.2853 | 14.2315 | 14.2759 |
| 14 | 14.8851 | 14.0352 | 14.3536 | 14.4070 | 14.6994 | 14.5326 | 14.6625 | 14.6077 | 14.5918 |
| 15 | 15.2888 | 14.3936 | 14.7339 | 14.8081 | 15.1104 | 14.9324 | 15.0772 | 14.9879 | 14.9679 |
| 16 | 15.3685 | 14.4826 | 14.8621 | 15.0117 | 15.2066 | 15.1719 | 15.3388 | 15.3100 | 15.1868 |
| 17 | 15.7206 | 14.8146 | 15.2047 | 15.3903 | 15.5448 | 15.5886 | 15.7257 | 15.7039 | 15.6316 |

Minimum value circled.

Table 16

GEWEKE-MEESE BAYESIAN ESTIMATION CRITERION

M VARS ARE M1 DATA IS GROWTH RATES -- II/62 TO III/82

LM = # OF LAGS OF M
LE0-LE16 = # OF LAGS OF E

| OBS | LM | LE0 | LE1 | LE2 | LE3 | LE4 | LE5 | LE6 | LE7 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 18.9626 | 20.0879 | 20.7682 | 21.7214 | 22.9520 | 24.0597 | 24.8111 | 25.9239 |
| 2 | 1 | (17.9219) | 19.0177 | 19.4745 | 20.5169 | 21.7231 | 22.6394 | 23.5289 | 24.7403 |
| 3 | 2 | 18.2030 | 19.2872 | 19.7552 | 20.8336 | 22.0322 | 22.8980 | 23.8870 | 25.0770 |
| 4 | 3 | 19.1607 | 20.2399 | 20.7011 | 21.7750 | 22.9747 | 23.8708 | 24.8227 | 26.0251 |
| 5 | 4 | 20.3490 | 21.4399 | 21.8943 | 22.9710 | 24.1755 | 25.0705 | 26.0267 | 27.2331 |
| 6 | 5 | 20.4518 | 21.4991 | 22.1067 | 23.1920 | 24.3797 | 25.3178 | 26.1379 | 27.3217 |
| 7 | 6 | 21.6466 | 22.6963 | 23.2993 | 24.3888 | 25.5810 | 26.5147 | 27.3244 | 28.5166 |
| 8 | 7 | 22.7644 | 23.8012 | 24.4143 | 25.4955 | 26.6981 | 27.6190 | 28.4773 | 29.6808 |
| 9 | 8 | 23.9429 | 24.9977 | 25.5935 | 26.6854 | 27.8929 | 28.7901 | 29.6309 | 30.8422 |
| 10 | 9 | 25.1430 | 26.2076 | 26.7722 | 27.8795 | 29.0922 | 29.9930 | 30.8478 | 32.0647 |
| 11 | 10 | 25.3708 | 26.3658 | 27.0186 | 28.0646 | 29.2654 | 30.2397 | 31.1285 | 32.3097 |
| 12 | 11 | 26.5719 | 27.5717 | 28.2157 | 29.2699 | 30.4764 | 31.4482 | 32.3429 | 33.5296 |
| 13 | 12 | 27.7804 | 28.7827 | 29.4180 | 30.4804 | 31.6932 | 32.6657 | 33.5634 | 34.7557 |
| 14 | 13 | 28.9837 | 29.9840 | 30.6212 | 31.6660 | 32.8823 | 33.8754 | 34.7554 | 35.9531 |
| 15 | 14 | 30.2026 | 31.2062 | 31.8379 | 32.8872 | 34.1109 | 35.1043 | 35.9885 | 37.1920 |
| 16 | 15 | 31.0991 | 32.1180 | 32.7615 | 33.7985 | 35.0218 | 36.1140 | 36.9477 | 38.1249 |
| 17 | 16 | 32.2075 | 33.2445 | 33.8834 | 34.9461 | 36.1740 | 37.2720 | 38.1786 | 39.3625 |

| OBS | LE8 | LE9 | LE10 | LE11 | LE12 | LE13 | LE14 | LE15 | LE16 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 26.5746 | 27.7127 | 28.8214 | 29.7275 | 30.6916 | 31.9252 | 33.1455 | 34.2953 | 35.4238 |
| 2 | 25.0256 | 25.6857 | 26.7053 | 27.8407 | 28.8822 | 30.0101 | 31.1872 | 32.2576 | 33.1289 |
| 3 | 25.6552 | 26.1228 | 26.8882 | 28.0350 | 29.1851 | 30.3421 | 31.5353 | 32.3535 | 33.2405 |
| 4 | 26.6273 | 26.8672 | 27.7103 | 28.7678 | 29.8980 | 30.9822 | 32.1898 | 32.9275 | 33.5837 |
| 5 | 27.8069 | 28.0063 | 28.8899 | 29.9606 | 31.1042 | 32.1942 | 33.4073 | 34.1369 | 34.7801 |
| 6 | 27.9146 | 28.4726 | 29.3954 | 30.5455 | 31.5734 | 32.5026 | 33.7098 | 34.6500 | 35.2618 |
| 7 | 29.0869 | 29.6354 | 30.5883 | 31.7411 | 32.7813 | 33.7029 | 34.9137 | 35.8644 | 36.4417 |
| 8 | 30.2846 | 30.8070 | 31.7604 | 32.8907 | 33.9280 | 34.8920 | 36.1025 | 37.0808 | 37.6262 |
| 9 | 31.3770 | 31.7682 | 32.7590 | 33.8988 | 35.0117 | 35.9953 | 37.1975 | 38.0961 | 38.7362 |
| 10 | 32.5608 | 32.9775 | 33.9719 | 35.1129 | 36.2321 | 37.2192 | 38.4261 | 39.3123 | 39.9224 |
| 11 | 32.5906 | 32.8664 | 33.9929 | 34.9425 | 36.0684 | 36.8715 | 37.9070 | 38.8096 | 39.7619 |
| 12 | 33.7417 | 34.0611 | 35.1952 | 36.1501 | 37.2782 | 38.0835 | 39.1190 | 40.0182 | 40.9790 |
| 13 | 34.9461 | 35.2527 | 36.4005 | 37.3519 | 38.4927 | 39.3010 | 40.3415 | 41.2352 | 42.2024 |
| 14 | 36.1674 | 36.4356 | 37.6050 | 38.5724 | 39.7190 | 40.5242 | 41.5507 | 42.4431 | 43.3659 |
| 15 | 37.3963 | 37.6354 | 38.8183 | 39.8001 | 40.9511 | 41.7483 | 42.7838 | 43.6508 | 44.5699 |
| 16 | 38.3756 | 38.6292 | 39.8402 | 40.8782 | 41.9491 | 42.8525 | 43.9032 | 44.8139 | 45.6599 |
| 17 | 39.5606 | 39.8049 | 41.0207 | 42.0835 | 43.1231 | 44.0829 | 45.1103 | 46.0254 | 46.9071 |

Minimum value circled.

Table 17

SCHWARZ BAYESIAN INFORMATION CRITERION

M VARS ARE M1 DATA IS GROWTH RATES -- II/62 TO III/82

LM = # OF LAGS OF M
LE0-LE16 = # OF LAGS OF E

| OBS | LM | LE0 | LE1 | LE2 | LE3 | LE4 | LE5 | LE6 | LE7 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2.92635 | 2.98625 | 3.01804 | 3.06704 | 3.13376 | 3.19260 | 3.22878 | 3.28801 |
| 2 | 1 | 2.84058 | 2.89928 | 2.91106 | 2.96595 | 3.03303 | 3.07852 | 3.12193 | 3.18948 |
| 3 | 2 | 2.83880 | 2.89689 | 2.90709 | 2.96490 | 3.03213 | 3.07317 | 3.12388 | 3.19047 |
| 4 | 3 | 2.88720 | 2.94494 | 2.95434 | 3.01181 | 3.07923 | 3.12260 | 3.17033 | 3.23799 |
| 5 | 4 | 2.95327 | 3.01184 | 3.02129 | 3.07893 | 3.14654 | 3.18997 | 3.23812 | 3.30590 |
| 6 | 5 | 2.93417 | 2.98955 | 3.00845 | 3.06709 | 3.13423 | 3.18056 | 3.21684 | 3.28381 |
| 7 | 6 | 3.00151 | 3.05707 | 3.07607 | 3.13499 | 3.20232 | 3.24838 | 3.28404 | 3.35153 |
| 8 | 7 | 3.06253 | 3.11704 | 3.13710 | 3.19530 | 3.26338 | 3.30846 | 3.34828 | 3.41655 |
| 9 | 8 | 3.12832 | 3.18424 | 3.20334 | 3.26235 | 3.33064 | 3.37391 | 3.41245 | 3.48122 |
| 10 | 9 | 3.19564 | 3.25230 | 3.26938 | 3.32957 | 3.39808 | 3.44178 | 3.48167 | 3.55064 |
| 11 | 10 | 3.18498 | 3.23604 | 3.25804 | 3.31340 | 3.38196 | 3.43121 | 3.47311 | 3.54002 |
| 12 | 11 | 3.25309 | 3.30458 | 3.32631 | 3.38234 | 3.45115 | 3.50027 | 3.54284 | 3.61001 |
| 13 | 12 | 3.32159 | 3.37332 | 3.39481 | 3.45148 | 3.52059 | 3.56983 | 3.61283 | 3.68025 |
| 14 | 13 | 3.38946 | 3.44106 | 3.46316 | 3.51835 | 3.58754 | 3.63851 | 3.68022 | 3.74788 |
| 15 | 14 | 3.45837 | 3.51025 | 3.53240 | 3.58793 | 3.65747 | 3.70851 | 3.75076 | 3.81866 |
| 16 | 15 | 3.50180 | 3.55488 | 3.57770 | 3.63224 | 3.70190 | 3.76085 | 3.79898 | 3.86485 |
| 17 | 16 | 3.56196 | 3.61647 | 3.63916 | 3.69578 | 3.76564 | 3.82501 | 3.86915 | 3.93535 |

| OBS | LE8 | LE9 | LE10 | LE11 | LE12 | LE13 | LE14 | LE15 | LE16 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.31740 | 3.37837 | 3.43740 | 3.48328 | 3.53290 | 3.60005 | 3.66619 | 3.72771 | 3.78784 |
| 2 | 3.18644 | 3.21084 | 3.26397 | 3.32645 | 3.38135 | 3.44314 | 3.50876 | 3.56590 | 3.60732 |
| 3 | 3.20837 | 3.21555 | 3.24675 | 3.31085 | 3.37513 | 3.43988 | 3.50754 | 3.54373 | 3.58553 |
| 4 | 3.25762 | 3.24492 | 3.28246 | 3.33889 | 3.40170 | 3.46042 | 3.52977 | 3.55834 | 3.57887 |
| 5 | 3.32373 | 3.30837 | 3.34963 | 3.40717 | 3.47101 | 3.53015 | 3.59973 | 3.62800 | 3.64790 |
| 6 | 3.30041 | 3.31243 | 3.35664 | 3.42159 | 3.47539 | 3.52021 | 3.59028 | 3.63617 | 3.65150 |
| 7 | 3.36672 | 3.37841 | 3.42546 | 3.49049 | 3.54539 | 3.58966 | 3.65980 | 3.70675 | 3.71953 |
| 8 | 3.43502 | 3.44502 | 3.49221 | 3.55510 | 3.60973 | 3.65788 | 3.72776 | 3.77722 | 3.78779 |
| 9 | 3.49428 | 3.49290 | 3.54340 | 3.60716 | 3.66845 | 3.71835 | 3.78741 | 3.82992 | 3.84908 |
| 10 | 3.56114 | 3.56274 | 3.61360 | 3.67730 | 3.73901 | 3.78929 | 3.85848 | 3.90012 | 3.91717 |
| 11 | 3.52823 | 3.51135 | 3.57471 | 3.62095 | 3.68423 | 3.71616 | 3.77073 | 3.81214 | 3.85840 |
| 12 | 3.59315 | 3.58127 | 3.64520 | 3.69207 | 3.75540 | 3.78792 | 3.84246 | 3.88377 | 3.93101 |
| 13 | 3.66267 | 3.65064 | 3.71570 | 3.76235 | 3.82670 | 3.85989 | 3.91489 | 3.95590 | 4.00386 |
| 14 | 3.73341 | 3.71897 | 3.78584 | 3.83408 | 3.89878 | 3.93206 | 3.98573 | 4.02683 | 4.07068 |
| 15 | 3.80452 | 3.76863 | 3.85651 | 3.90615 | 3.97104 | 4.00397 | 4.05847 | 4.09746 | 4.14113 |
| 16 | 3.85416 | 3.83931 | 3.90978 | 3.96449 | 4.02217 | 4.06473 | 4.12060 | 4.16373 | 4.20073 |
| 17 | 3.92134 | 3.90659 | 3.97727 | 4.03417 | 4.08901 | 4.13676 | 4.19052 | 4.23421 | 4.27476 |

Minimum value circled.

Table 18

F-STATISTICS

M VARS ARE M1 DATA IS GROWTH RATES -- II/62 TO III/82

LM = # OF LAGS OF M
LE0-LE16 = # OF LAGS OF E

| OBS | LM | LE0 | LE1 | LE2 | LE3 | LE4 | LE5 | LE6 | LE7 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2.10994 | 2.15377 | 2.09568 | 2.10104 | 2.17508 | 2.22252 | 2.18169 | 2.23464 |
| 2 | 1 | 1.65631 | 1.68557 | 1.56355 | 1.57973 | 1.63797 | 1.62512 | 1.60503 | 1.67124 |
| 3 | 2 | 1.49470 | 1.51875 | 1.39348 | 1.41544 | 1.46951 | 1.43917 | 1.44081 | 1.49872 |
| 4 | 3 | 1.48848 | 1.51198 | 1.38228 | 1.40358 | 1.45935 | 1.43644 | 1.42808 | 1.49130 |
| 5 | 4 | 1.53868 | 1.56711 | 1.43417 | 1.45835 | 1.51871 | 1.49692 | 1.49177 | 1.56067 |
| 6 | 5 | 1.31992 | 1.33288 | 1.23116 | 1.25314 | 1.30500 | 1.28882 | 1.23699 | 1.29305 |
| 7 | 6 | 1.37068 | 1.38615 | 1.28212 | 1.30755 | 1.36418 | 1.34835 | 1.29388 | 1.35707 |
| 8 | 7 | 1.40404 | 1.41763 | 1.31461 | 1.33968 | 1.40255 | 1.38397 | 1.34460 | 1.41634 |
| 9 | 8 | 1.45591 | 1.47671 | 1.36773 | 1.39879 | 1.46770 | 1.44376 | 1.39989 | 1.48018 |
| 10 | 9 | 1.51705 | 1.54356 | 1.42446 | 1.46363 | 1.53957 | 1.51924 | 1.48210 | 1.57241 |
| 11 | 10 | 1.30398 | 1.30434 | 1.20037 | 1.21374 | 1.27942 | 1.27314 | 1.23594 | 1.30575 |
| 12 | 11 | 1.36525 | 1.36951 | 1.26164 | 1.28091 | 1.35445 | 1.35084 | 1.31830 | 1.39898 |
| 13 | 12 | 1.43330 | 1.44142 | 1.32973 | 1.35583 | 1.43887 | 1.44008 | 1.41240 | 1.50643 |
| 14 | 13 | 1.50515 | 1.51628 | 1.40422 | 1.42909 | 1.52179 | 1.53651 | 1.50628 | 1.61584 |
| 15 | 14 | 1.58835 | 1.60524 | 1.49090 | 1.52365 | 1.63017 | 1.65326 | 1.63176 | 1.76236 |
| 16 | 15 | 1.56845 | 1.59155 | 1.47621 | 1.50589 | 1.61853 | 1.68805 | 1.64475 | 1.77510 |
| 17 | 16 | 1.62373 | 1.65845 | 1.53969 | 1.58663 | 1.71498 | 1.80086 | 1.80302 | 1.96556 |

| OBS | LE8 | LE9 | LE10 | LE11 | LE12 | LE13 | LE14 | LE15 | LE16 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.16655 | 2.23094 | 2.29185 | 2.29794 | 2.32350 | 2.43782 | 2.55837 | 2.66677 | 2.77968 |
| 2 | 1.48446 | 1.39413 | 1.40468 | 1.45177 | 1.47299 | 1.52489 | 1.59871 | 1.64174 | 1.61482 |
| 3 | 1.38542 | 1.23251 | 1.16049 | 1.20436 | 1.25293 | 1.30831 | 1.38213 | 1.32229 | 1.28399 |
| 4 | 1.38164 | 1.15409 | 1.10138 | 1.11540 | 1.15571 | 1.18334 | 1.26052 | 1.15949 | 1.01267 |
| 5 | 1.44143 | 1.19524 | 1.15563 | 1.17723 | 1.22720 | 1.26218 | 1.35034 | 1.24573 | 1.08942 |
| 6 | 1.16616 | 1.01810 | 0.98299 | 1.02640 | 1.02796 | 0.99050 | 1.06578 | 1.03106 | 0.83338 |
| 7 | 1.22059 | 1.06547 | 1.04176 | 1.09125 | 1.10138 | 1.06287 | 1.14938 | 1.12341 | 0.89931 |
| 8 | 1.28856 | 1.12037 | 1.09852 | 1.14487 | 1.15771 | 1.13963 | 1.23800 | 1.23183 | 0.97945 |
| 9 | 1.32525 | 1.10146 | 1.09250 | 1.14543 | 1.19335 | 1.18639 | 1.29258 | 1.24632 | 1.02927 |
| 10 | 1.40050 | 1.17938 | 1.17621 | 1.23879 | 1.30036 | 1.30386 | 1.43376 | 1.39080 | 1.14480 |
| 11 | 1.02553 | 0.71048 | 0.73613 | 0.67972 | 0.70511 | 0.55081 | 0.50892 | 0.36119 | 0.20814 |
| 12 | 1.07923 | 0.76676 | 0.80131 | 0.74762 | 0.78181 | 0.61966 | 0.57906 | 0.41483 | 0.24805 |
| 13 | 1.16391 | 0.82897 | 0.87790 | 0.82367 | 0.87645 | 0.70726 | 0.67554 | 0.49120 | 0.30642 |
| 14 | 1.26921 | 0.89616 | 0.96740 | 0.92646 | 1.00159 | 0.82284 | 0.79071 | 0.58655 | 0.30076 |
| 15 | 1.39601 | 0.98466 | 1.08075 | 1.05865 | 1.16699 | 0.97827 | 0.98311 | 0.73418 | 0.36766 |
| 16 | 1.40504 | 0.96212 | 1.08695 | 1.10822 | 1.16890 | 1.06306 | 1.11820 | 0.91325 | 0.03601 |
| 17 | 1.54660 | 1.06205 | 1.22316 | 1.29656 | 1.37798 | 1.39156 | 1.57610 | 1.63762 | |

Table 19
Likelihood Ratio Test Results for Testing Alternative Lag Structure

| NULL STRUCTURE | | ALTERNATIVE STRUCTURE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Lags on | | Lags on $\dot{M}$ and $\dot{G}$ | | | | | | | |
| $\dot{M}$ | $\dot{G}$ | 12 12 | 10 9 | 6 6 | 5 2 | 4 4 | 5 0 | 2 0 | 1 0 |
| 10 | 9 | 3.31 | | | | | | | |
| 10 | 8 | 10.46 | 7.15* | | | | | | |
| 6 | 6 | | 21.26* | | | | | | |
| 5 | 2 | 29.90* | 26.59* | 5.34 | | | | | |
| 4 | 4 | | 32.36* | | | | | | |
| 5 | 0 | 34.87* | 31.56* | 10.31 | 4.97 | | | | |
| 2 | 0 | 43.53* | 40.22* | 18.96* | 13.63* | 7.86 | 8.66* | | |
| 1 | 0 | 49.14* | 45.83* | 24.58* | 19.24* | 13.47 | 14.27* | 5.61* | |
| 0 | 0 | | 58.29* | | 31.72* | | 26.75* | 18.10* | 12.48* |

*Statistically significance at the 5 percent level.