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[] P R O G R A M C O F E C H A Version 6.06P 26351

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QUALITY CONTROL AND DATING CHECK OF TREE-RING MEASUREMENTS

Title of run: Mount Hunger-Middlesex-Low Corr3-30

File of DATED series: mhm\_low\_compact\_corr3-30.dta

CONTENTS:

Part 1: Title page, options selected, summary, absent rings by series

Part 2: Histogram of time spans

Part 3: Master series with sample depth and absent rings by year

Part 4: Bar plot of Master Dating Series

Part 5: Correlation by segment of each series with Master

Part 6: Potential problems: low correlation, divergent year-to-year changes, absent rings, outliers

Part 7: Descriptive statistics

RUN CONTROL OPTIONS SELECTED VALUE

Time span of Master dating series is 1906 to 2006 101 years

Continuous time span is 1906 to 2006 101 years

Portion with two or more series is 1907 to 2006 100 years

>> 192a 2003 absent in 4 of 20 series, but is not usually narrow: master index is -.212

>> 193a 2003 absent in 4 of 20 series, but is not usually narrow: master index is -.212

>> 193b 2003 absent in 4 of 20 series, but is not usually narrow: master index is -.212

>> 193b 2006 absent in 6 of 20 series, but is not usually narrow: master index is .318

>> 194a 2003 absent in 4 of 20 series, but is not usually narrow: master index is -.212

>> 194a 2006 absent in 6 of 20 series, but is not usually narrow: master index is .318

>> 196a 2001 absent in 2 of 20 series, but is not usually narrow: master index is -.201

>> 196a 2005 absent in 4 of 20 series, but is not usually narrow: master index is .542

>> 196a 2006 absent in 6 of 20 series, but is not usually narrow: master index is .318

>> 196b 2005 absent in 4 of 20 series, but is not usually narrow: master index is .542

>> 196b 2006 absent in 6 of 20 series, but is not usually narrow: master index is .318

>> 198a 1999 absent in 1 of 20 series, but is not usually narrow: master index is .772

>> 198a 2001 absent in 2 of 20 series, but is not usually narrow: master index is -.201

>> 198a 2005 absent in 4 of 20 series, but is not usually narrow: master index is .542

>> 198a 2006 absent in 6 of 20 series, but is not usually narrow: master index is .318

>> 198b 2005 absent in 4 of 20 series, but is not usually narrow: master index is .542

>> 198b 2006 absent in 6 of 20 series, but is not usually narrow: master index is .318

>> 200a 1950 absent in 1 of 20 series, but is not usually narrow: master index is .057

ABSENT RINGS listed by SERIES: (See Master Dating Series for absent rings listed by year)

192a 4 absent rings: 1945 2000 2003 2004

193a 1 absent rings: 2003

193b 2 absent rings: 2003 2006

194a 2 absent rings: 2003 2006

196a 4 absent rings: 2001 2004 2005 2006

196b 3 absent rings: 2004 2005 2006

198a 4 absent rings: 1999 2001 2005 2006

198b 2 absent rings: 2005 2006

200a 1 absent rings: 1950

23 absent rings 1.235%

Year Value No Ab Year Value No Ab Year Value No Ab Year Value No Ab Year Value No Ab Year Value No Ab

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1950 .057 20 1<< 2000 -.958 20 1

1951 .056 20 2001 -.201 20 2<<

1952 1.077 20 2002 .525 20

1953 -.325 20 2003 -.212 20 4<<

1954 .777 20 2004 -.675 20 3

1955 1.265 20 2005 .542 20 4<<

1906 -5.400 1 1956 1.173 20 2006 .318 20 6<<

1907 -2.054 4 1957 -1.118 20

1908 .026 4 1958 -.471 20

1909 -.654 4 1959 .357 20

1910 -.141 6 1960 .115 20

1911 .544 7 1961 .368 20

1912 -.679 8 1962 -.346 20

1913 -.948 11 1963 .418 20

1914 .518 13 1964 .973 20

1915 .977 14 1965 .190 20

1916 .336 15 1966 -.621 20

1917 .259 16 1967 .052 20

1918 .736 17 1968 -1.503 20

1919 -1.748 17 1969 .671 20

1920 1.214 17 1970 .595 20

1921 1.132 17 1971 .294 20

1922 .476 18 1972 .326 20

1923 -1.082 18 1973 -.079 20

1924 .339 18 1974 -.142 20

1925 .752 19 1975 -.267 20

1926 .076 19 1976 -.905 20

1927 1.095 19 1977 .439 20

1928 .476 20 1978 .750 20

1929 -.178 20 1979 .108 20

1930 .573 20 1980 -.171 20

1931 .064 20 1981 -.029 20

1932 -1.139 20 1982 .708 20

1933 -.420 20 1983 .010 20

1934 1.197 20 1984 -.092 20

1935 1.417 20 1985 -1.491 20

1936 -2.779 20 1986 -.433 20

1937 -.822 20 1987 .424 20

1938 -.257 20 1988 .726 20

1939 .701 20 1989 -.252 20

1940 1.274 20 1990 -.585 20

1941 .739 20 1991 .445 20

1942 .937 20 1992 -.013 20

1943 .848 20 1993 .217 20

1944 .146 20 1994 1.224 20

1945 -2.917 20 1 1995 .024 20

1946 -1.647 20 1996 -.513 20

1947 .484 20 1997 1.014 20

1948 -.983 20 1998 .886 20

1949 .014 20 1999 .772 20 1<<

PART 5: CORRELATION OF SERIES BY SEGMENTS: Mount Hunger-Middlesex-Low Corr3-30 13:48 Wed 21 Feb 2007 Page 5

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Correlations of 30-year dated segments, lagged 15 years

Flags: A = correlation under .4226 but highest as dated; B = correlation higher at other than dated position

Seq Series Time\_span 1905 1920 1935 1950 1965 1980

1934 1949 1964 1979 1994 2009

--- -------- --------- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ----

1 191a 1917 2006 .75 .79 .52 -.05B .08B .22B

2 191b 1918 2006 .84 .83 .69 .18B .01B .12B As good as it’s going to get

3 192a 1911 2006 .30B .27B .43 .64 .58 .43

4 192b 1913 2006 .42 .63 .68 .45 .32B .35A

5 193a 1925 2006 .91 .75 .41A .51 .57

6 193b 1916 2006 .80 .82 .79 .40A .46 .54

7 194a 1907 2006 .75 .93 .79 .20B .30A .41A

8 194b 1915 2006 .90 .92 .84 .11B-.11B .12B Not sure what’s up here but it seems fine

9 195a 1928 2006 .80 .78 .50 .34A .34A

10 195b 1922 2006 .72 .70 .35A-.10B .03B Again, Not sure what’s up here but it seems fine

11 196a 1913 2006 .88 .86 .79 .24B .36A .40A

12 196b 1910 2006 .68 .89 .78 .47 .58 .51

13 197a 1910 2006 .82 .86 .78 .57 .50 .75

14 197b 1912 2006 .87 .85 .81 .60 .67 .63

15 198a 1907 2006 .51 .63 .59 .41A .43 .17B As good as I’m going to get it

16 198b 1906 2006 .63 .74 .75 .48 .47 .39A

17 199a 1914 2006 .60 .59 .59 .69 .62 .60

18 199b 1914 2006 .21A .42 .51 .57 .41A .12B Seems fine

19 200a 1907 2006 .60 .69 .66 .36A .19B .44

20 200b 1913 2006 .71 .81 .79 .35A .46 .59

Av segment correlation .66 .75 .70 .40 .35 .39

191a 1917 to 2006 90 years Series 1

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 -3 -.22 -.03 .04 -.06 .32 .04 -.20 .36\*-.04 .18 -.05|-.29 .02 -.03 -.13 -.02 .15 -.15 .36 .13 -.03

1965 1994 -9 -.08 .34\* .07 -.13 .00 -.21 -.07 .00 -.08 .19 .08|-.21 -.07 .23 -.02 .00 -.04 .02 .25 -.01 .20

1977 2006 -1 .03 .32 -.16 -.20 -.05 -.06 .08 -.09 -.16 .40\* .22| - - - - - - - - - -

[B] Entire series, effect on correlation ( .464) is:

Lower 1977< -.077 1957> -.034 1951< -.030 1963< -.021 1993< -.012 1968> -.012 Higher 1919 .055 1945 .037

1950 to 1979 segment:

Lower 1977< -.140 1957> -.078 1963< -.040 1951< -.038 1966> -.023 1962> -.011 Higher 1955 .055 1969 .037

1965 to 1994 segment:

Lower 1977< -.251 1993< -.037 1966> -.030 1990> -.023 1968> -.023 1983> -.013 Higher 1985 .177 1969 .046

1977 to 2006 segment:

Lower 1977< -.280 1993< -.036 1990> -.033 1983> -.019 2001< -.015 1995> -.014 Higher 1985 .159 1997 .066

191a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1917 240 241 159

1920 259 264 228 205 237 203 209 225 190 211

1930 229 203 166 203 244 227 140 219 170 243

1940 271 214 207 178 177 103 145 173 119 221

1950 230 85 181 151 257 299 258 249 205 203

1960 175 213 220 134 226 154 213 251 181 218

1970 189 150 199 177 113 105 120 56 160 169

1980 88 106 119 138 130 67 96 157 157 124

1990 155 161 140 78 127 143 101 185 177 153

2000 92 86 124 96 105 107 102

====================================================================================================================================

191b 1918 to 2006 89 years Series 2

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 -5 -.03 -.02 .05 -.05 -.26 .37\*-.08 -.13 .12 -.29 .18| .01 .00 -.05 .24 -.24 .16 -.11 .06 -.04 -.04

1965 1994 8 .11 .13 -.23 .12 .05 -.04 -.15 -.31 .11 .06 .01|-.03 -.07 .16 .03 .02 -.10 .10 .37\*-.13 .19

1977 2006 -1 .09 .05 -.09 .04 -.08 -.23 .05 -.25 -.24 .25\* .12| - - - - - - - - - -

[B] Entire series, effect on correlation ( .514) is:

Lower 1996< -.030 1956< -.023 1957> -.018 1989> -.017 1977< -.014 1997< -.013 Higher 1936 .088 1919 .044

1950 to 1979 segment:

Lower 1956< -.071 1957> -.056 1977< -.039 1979> -.027 1972< -.026 1978< -.022 Higher 1952 .054 1962 .051

1965 to 1994 segment:

Lower 1977< -.062 1989> -.053 1972< -.043 1978< -.037 1994< -.031 1983> -.028 Higher 1985 .124 1968 .099

1977 to 2006 segment:

Lower 1989> -.057 1997< -.046 1977< -.045 1983> -.031 1990> -.028 1978< -.026 Higher 1985 .077 2000 .061

191b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1918 236 150

1920 211 220 170 209 289 246 242 249 220 175

1930 175 158 144 160 217 191 75 106 151 205

1940 217 187 195 140 135 75 98 193 141 183

1950 162 171 276 133 300 193 132 183 216 214

1960 201 206 107 197 193 189 173 209 135 192

1970 167 157 101 81 114 85 124 88 94 182

1980 121 162 119 165 145 107 117 149 159 217

1990 188 167 151 147 126 124 68 102 159 151

2000 108 136 159 131 108 200 190

====================================================================================================================================

192a 1911 to 2006 96 years Series 3

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1911 1940 8 - - - - - .19 .06 -.17 -.22 .19 .30|-.26 -.12 .11 -.07 -.25 -.15 .22 .33\* .02 .22

1920 1949 8 .18 -.04 -.35 .13 -.12 .16 .07 -.16 -.11 .20 .27|-.26 -.07 .05 -.18 -.21 -.35 .12 .45\* .02 .21

[B] Entire series, effect on correlation ( .499) is:

Lower 1936> -.065 1919> -.025 1932> -.025 1999< -.022 1967< -.020 1928< -.012 Higher 1945 .086 1957 .018

1911 to 1940 segment:

Lower 1936> -.083 1932> -.059 1919> -.035 1928< -.033 1937< -.017 1934< -.015 Higher 1923 .044 1912 .030

1920 to 1949 segment:

Lower 1936> -.158 1932> -.061 1928< -.025 1937< -.015 1931> -.011 1926< -.011 Higher 1945 .220 1923 .021

[D] 4 Absent rings: Year Master N series Absent

1945 -2.917 20 1

2000 -.958 20 1

2003 -.212 20 4 >> WARNING: Ring is not usually narrow

2004 -.675 20 3

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1936 +3.3 SD

192a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1911 498 422 396 506 531 528 518 533 465

1920 464 442 392 305 307 320 262 316 246 213

1930 267 279 294 237 204 248 199 121 135 177

1940 178 167 187 129 129 0 41 46 42 47

1950 80 164 188 157 173 146 157 43 17 89

1960 64 88 58 82 53 49 40 11 4 53

1970 54 76 98 76 45 47 15 40 74 53

1980 93 62 86 82 60 32 47 49 34 41

1990 42 73 55 56 125 75 66 81 54 3

2000 0 14 48 0 0 104 62

====================================================================================================================================

192b 1913 to 2006 94 years Series 4

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1965 1994 -6 -.17 .03 -.08 -.09 .32\*-.11 -.09 .09 -.25 -.02 .32| .00 -.08 -.18 .22 -.10 .32 -.02 -.06 -.04 .20

1977 2006 0 -.35 .00 .05 -.13 .02 -.16 .24 .19 -.37 -.09 .35\* - - - - - - - - - -

[B] Entire series, effect on correlation ( .448) is:

Lower 1979< -.062 1919> -.046 1943< -.017 1930< -.013 2004< -.011 1946> -.006 Higher 1945 .065 1957 .026

1965 to 1994 segment:

Lower 1979< -.207 1982< -.026 1967< -.012 1980> -.011 1965> -.010 1984> -.007 Higher 1994 .075 1968 .031

1977 to 2006 segment:

Lower 1979< -.146 1985> -.027 1982< -.022 1980> -.014 1984> -.011 1999< -.010 Higher 1994 .062 1997 .049

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1919 +3.1 SD

192b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1913 430 495 488 584 526 577 555

1920 563 563 485 393 378 354 337 370 302 202

1930 196 260 229 214 283 247 121 122 192 244

1940 245 197 242 83 81 5 92 105 86 90

1950 121 123 167 105 94 95 87 27 32 84

1960 57 106 71 117 101 118 73 55 50 94

1970 85 74 80 87 54 61 63 70 123 50

1980 88 82 74 77 99 81 82 108 116 82

1990 87 94 86 87 142 100 86 125 88 74

2000 57 85 69 58 30 61 74

====================================================================================================================================

193a 1925 to 2006 82 years Series 5

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 0 -.24 -.09 -.10 -.18 -.19 .28 -.01 -.09 .00 -.01 .41\*-.09 -.29 -.07 .24 -.20 .30 -.18 .03 .11 -.19

[B] Entire series, effect on correlation ( .642) is:

Lower 1962< -.037 2004> -.018 1966> -.015 1980< -.014 1990> -.011 2002< -.009 Higher 1945 .031 1936 .031

1950 to 1979 segment:

Lower 1962< -.091 1966> -.048 1964< -.031 1975> -.017 1967< -.017 1969< -.014 Higher 1956 .027 1955 .026

[D] 1 Absent rings: Year Master N series Absent

2003 -.212 20 4 >> WARNING: Ring is not usually narrow

193a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1925 202 176 207 196 159

1930 182 189 120 126 206 216 98 127 161 167

1940 190 187 184 167 160 78 79 135 96 130

1950 143 146 197 162 208 223 226 157 143 186

1960 164 171 121 160 165 161 192 161 144 160

1970 190 215 176 180 162 180 152 174 201 166

1980 86 89 133 118 127 57 80 173 198 126

1990 139 135 99 106 128 104 104 105 92 86

2000 32 44 35 0 75 78 45

====================================================================================================================================

193b 1916 to 2006 91 years Series 6

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 0 -.09 .04 .37 .06 .04 .14 -.03 -.21 -.12 -.09 .40\*-.03 -.10 .04 -.08 .02 -.27 -.07 .01 .37 .21

[B] Entire series, effect on correlation ( .645) is:

Lower 1968> -.031 1918< -.016 1974< -.016 1990> -.010 2004> -.008 1973< -.008 Higher 1945 .058 1919 .022

1950 to 1979 segment:

Lower 1968> -.127 1974< -.033 1962> -.027 1979> -.018 1973< -.015 1978< -.012 Higher 1976 .067 1956 .036

[D] 2 Absent rings: Year Master N series Absent

2003 -.212 20 4 >> WARNING: Ring is not usually narrow

2006 .318 20 6 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

193b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1916 160 130 108 86

1920 218 204 207 151 181 203 154 208 187 200

1930 199 165 122 207 257 237 89 104 139 176

1940 185 156 141 191 184 53 81 174 99 138

1950 148 172 178 141 167 210 253 167 175 229

1960 206 218 204 189 214 181 157 167 192 219

1970 166 165 142 91 70 84 69 156 123 134

1980 104 85 146 100 117 64 87 83 98 85

1990 99 97 65 53 100 64 64 81 71 57

2000 31 33 19 0 33 42 0

====================================================================================================================================

194a 1907 to 2006 100 years Series 7

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 9 -.15 .00 .24 -.03 .16 .26 .03 .04 .09 -.08 .20|-.16 .03 .04 -.01 -.40 -.21 .21 .04 .29\*-.06

1965 1994 0 .14 .03 .10 -.29 -.18 -.07 .15 .07 -.15 .02 .30\* .18 .18 -.29 -.31 .02 .21 .03 -.20 .18 -.07

1977 2006 0 .29 .07 -.08 -.22 -.32 -.01 .19 .24 -.28 -.31 .41\* - - - - - - - - - -

[B] Entire series, effect on correlation ( .623) is:

Lower 1909< -.039 2006< -.015 1957> -.015 1962> -.014 1950< -.011 1913> -.011 Higher 1936 .099 1945 .034

1950 to 1979 segment:

Lower 1962> -.083 1957> -.051 1950< -.037 1964< -.025 1969< -.025 1972< -.014 Higher 1976 .079 1952 .053

1965 to 1994 segment:

Lower 1969< -.037 1985> -.027 1981> -.024 1972< -.021 1992> -.021 1980> -.017 Higher 1976 .066 1982 .048

1977 to 2006 segment:

Lower 1985> -.052 2006< -.044 1999< -.036 1998< -.026 1981> -.021 1992> -.019 Higher 1997 .062 2000 .055

[D] 2 Absent rings: Year Master N series Absent

2003 -.212 20 4 >> WARNING: Ring is not usually narrow

2006 .318 20 6 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

194a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1907 173 246 152

1910 208 281 310 380 479 535 521 493 459 312

1920 453 446 543 373 435 503 455 503 459 352

1930 441 376 314 288 399 420 142 217 197 277

1940 332 315 256 250 163 48 69 137 62 107

1950 51 51 107 75 82 98 110 102 115 143

1960 123 177 187 180 103 63 38 35 33 30

1970 31 33 24 42 17 36 10 35 40 50

1980 80 133 190 97 48 48 44 56 53 52

1990 40 82 98 123 96 50 49 103 52 24

2000 3 15 26 0 6 12 0

====================================================================================================================================

194b 1915 to 2006 92 years Series 8

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 -8 .18 .12 .19\*-.34 -.27 .08 -.13 .04 .03 -.16 .11|-.08 -.01 -.12 .09 .18 .03 .01 .10 .18 .15

1965 1994 5 .04 .02 -.18 .03 .08 .24 .00 .04 .02 -.20 -.11|-.26 -.16 .00 .01 .24\* .24 -.06 .11 .12 .11

1977 2006 -10 .36\*-.12 -.25 .06 .18 .14 .15 .05 -.25 -.25 .12| - - - - - - - - - -

[B] Entire series, effect on correlation ( .601) is:

Lower 1985> -.053 1978< -.026 1968> -.023 1956< -.017 1977< -.013 2006< -.012 Higher 1936 .110 1919 .027

1950 to 1979 segment:

Lower 1978< -.090 1968> -.064 1956< -.061 1977< -.044 1970< -.033 1965> -.023 Higher 1976 .047 1969 .046

1965 to 1994 segment:

Lower 1985> -.158 1978< -.075 1977< -.039 1968> -.038 1970< -.029 1983> -.014 Higher 1969 .069 1994 .053

1977 to 2006 segment:

Lower 1985> -.226 1978< -.076 2003> -.044 1977< -.037 1983> -.022 2006< -.019 Higher 2000 .107 1997 .082

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1985 +3.3 SD

194b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1915 721 561 515 647 478

1920 600 517 537 460 548 553 431 500 403 377

1930 440 422 297 291 521 486 128 250 279 326

1940 418 418 327 296 214 78 77 138 91 213

1950 223 298 282 182 235 242 171 171 151 186

1960 212 238 220 205 313 353 237 287 236 264

1970 140 107 158 109 96 98 68 50 33 42

1980 33 44 44 46 39 51 37 41 40 31

1990 19 25 16 38 46 23 28 79 78 49

2000 19 63 98 128 87 133 43

====================================================================================================================================

195a 1928 to 2006 79 years Series 9

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1965 1994 0 .01 .01 .10 -.16 -.03 .07 .04 .12 -.20 -.03 .34\*-.02 .18 -.26 .05 .04 -.22 .04 .04 -.01 -.02

1977 2006 0 -.02 -.29 .28 -.07 -.16 .15 .04 .28 -.30 -.15 .34\* - - - - - - - - - -

[B] Entire series, effect on correlation ( .633) is:

Lower 1988< -.026 1985> -.022 1940< -.021 1974> -.012 1966< -.012 1957> -.011 Higher 1936 .126 1968 .016

1965 to 1994 segment:

Lower 1985> -.087 1988< -.080 1974> -.036 1992> -.030 1991< -.026 1969< -.020 Higher 1968 .131 1994 .086

1977 to 2006 segment:

Lower 1988< -.096 1985> -.079 1996> -.036 1992> -.034 1991< -.033 1980> -.020 Higher 1994 .081 1997 .053

195a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1928 315 314

1930 345 275 199 205 266 324 119 261 193 249

1940 177 271 231 268 198 129 108 215 155 152

1950 176 254 185 147 189 213 222 168 163 203

1960 215 155 135 175 218 151 76 94 71 98

1970 103 90 102 108 129 96 83 113 103 91

1980 97 73 86 64 62 71 72 80 49 50

1990 51 50 93 72 127 57 74 97 63 60

2000 28 29 40 4 16 40 53

====================================================================================================================================

195b 1922 to 2006 85 years Series 10

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 0 -.08 .09 .27 -.21 -.37 .13 -.09 -.12 .13 .05 .35\*-.23 -.09 -.11 .03 .20 -.02 .08 -.01 .12 .17

1965 1994 10 -.13 .02 .18 .16 .06 .10 -.32 .06 .02 -.07 -.10|-.08 -.04 .15 -.01 -.05 -.06 .13 .09 -.16 .26\*

1977 2006 -5 .09 -.17 .15 .26 .22 .27\*-.23 .13 -.21 -.05 .03| - - - - - - - - - -

[B] Entire series, effect on correlation ( .485) is:

Lower 1982< -.057 1985> -.023 1945> -.016 2000> -.015 1969< -.012 1957> -.011 Higher 1936 .133 1935 .011

1950 to 1979 segment:

Lower 1969< -.056 1970< -.045 1974> -.030 1957> -.029 1978< -.025 1963< -.018 Higher 1956 .045 1953 .036

1965 to 1994 segment:

Lower 1982< -.145 1985> -.036 1969< -.026 1970< -.024 1983> -.014 1974> -.013 Higher 1966 .064 1994 .048

1977 to 2006 segment:

Lower 1982< -.171 1985> -.059 2000> -.046 1983> -.018 1989> -.017 1980> -.014 Higher 1994 .035 1995 .034

195b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1922 167 145 227 264 198 258 234 247

1930 283 193 175 173 225 333 132 228 236 298

1940 296 239 230 278 215 190 114 302 202 204

1950 235 298 264 171 250 238 305 212 172 183

1960 189 206 164 163 234 167 122 160 151 139

1970 126 173 227 164 186 163 136 166 128 124

1980 141 113 88 119 111 113 105 132 101 104

1990 75 80 66 78 95 61 68 89 120 123

2000 96 84 106 64 64 72 74

====================================================================================================================================

196a 1913 to 2006 94 years Series 11

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 9 -.29 -.13 .23 -.29 -.13 .36 .09 -.14 .20 -.11 .24|-.09 -.22 -.08 .15 -.07 .02 .10 -.13 .43\*-.02

1965 1994 0 .14 .04 .23 -.23 -.20 .01 .20 -.15 .01 -.16 .36\* .21 .28 -.13 -.24 .05 .16 -.06 -.28 .22 -.11

1977 2006 0 .12 .05 -.01 -.29 -.13 .02 .28 .03 -.17 -.22 .40\* - - - - - - - - - -

[B] Entire series, effect on correlation ( .647) is:

Lower 1968> -.041 1957> -.028 1998< -.019 1983< -.010 1915< -.009 1992> -.009 Higher 1936 .112 1919 .026

1950 to 1979 segment:

Lower 1968> -.169 1957> -.096 1963< -.032 1964< -.029 1975> -.016 1970< -.014 Higher 1976 .060 1955 .056

1965 to 1994 segment:

Lower 1968> -.183 1987< -.029 1992> -.027 1984< -.018 1970< -.017 1975> -.013 Higher 1985 .071 1994 .048

1977 to 2006 segment:

Lower 1998< -.079 1992> -.042 2003> -.040 1999< -.026 2001< -.021 1987< -.021 Higher 1985 .057 1994 .052

[D] 4 Absent rings: Year Master N series Absent

2001 -.201 20 2 >> WARNING: Ring is not usually narrow

2004 -.675 20 3

2005 .542 20 4 >> WARNING: Ring is not usually narrow

2006 .318 20 6 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

196a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1913 146 178 176 195 243 327 161

1920 337 236 232 194 250 286 247 303 299 267

1930 353 248 236 200 274 314 87 184 136 260

1940 247 208 232 239 174 109 134 186 112 143

1950 118 152 185 117 182 221 224 188 162 141

1960 150 130 96 106 119 123 103 117 183 216

1970 146 185 197 175 146 156 112 131 123 117

1980 114 113 140 69 62 59 75 61 75 49

1990 52 66 88 83 84 51 35 58 13 12

2000 10 0 25 21 0 0 0

====================================================================================================================================

196b 1910 to 2006 97 years Series 12

[B] Entire series, effect on correlation ( .571) is:

Lower 1968< -.049 1912> -.039 1963< -.014 1957> -.014 1910< -.008 2005< -.008 Higher 1945 .052 1936 .042

[D] 3 Absent rings: Year Master N series Absent

2004 -.675 20 3

2005 .542 20 4 >> WARNING: Ring is not usually narrow

2006 .318 20 6 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1968 -6.7 SD

196b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1910 84 140 353 184 233 230 284 276 266 182

1920 316 274 278 223 285 321 250 352 296 284

1930 297 290 242 209 296 339 84 228 159 235

1940 225 211 203 225 177 15 119 149 58 94

1950 102 151 170 100 144 164 165 128 151 184

1960 167 130 121 78 123 130 98 88 22 140

1970 113 113 137 108 122 97 105 124 138 80

1980 103 106 149 83 78 80 84 96 113 52

1990 44 64 60 42 91 36 39 76 14 14

2000 12 27 50 25 0 0 0

====================================================================================================================================

197a 1910 to 2006 97 years Series 13

[B] Entire series, effect on correlation ( .688) is:

Lower 1968> -.023 1973< -.017 1957< -.017 1966< -.014 1932> -.007 1918< -.006 Higher 1936 .058 1919 .013

197a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1910 246 260 245 216 240 299 238 241 238 193

1920 334 322 320 248 264 264 252 274 225 215

1930 221 260 207 154 244 201 70 103 142 170

1940 242 164 172 195 134 75 107 164 95 110

1950 130 104 126 88 142 160 197 43 101 95

1960 110 96 94 100 108 99 58 79 96 101

1970 127 96 100 63 86 82 78 109 113 91

1980 96 99 153 83 78 57 59 81 89 60

1990 58 80 75 85 120 66 79 110 113 118

2000 45 59 51 21 32 53 19

====================================================================================================================================

197b 1912 to 2006 95 years Series 14

[B] Entire series, effect on correlation ( .744) is:

Lower 2003< -.022 1961< -.017 1948> -.014 1966> -.013 1938< -.011 1967> -.008 Higher 1936 .063 1945 .026

197b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1912 214 233 272 317 258 273 290 234

1920 363 383 312 265 315 369 294 324 324 274

1930 280 257 203 201 243 237 98 146 116 149

1940 219 168 177 229 229 83 87 156 170 143

1950 137 166 198 150 210 181 204 76 107 101

1960 110 75 74 97 100 93 118 146 83 115

1970 95 83 78 76 81 72 66 103 88 76

1980 73 72 101 51 36 23 46 72 62 44

1990 32 60 45 45 53 33 38 60 85 93

2000 50 66 56 10 21 41 35

====================================================================================================================================

198a 1907 to 2006 100 years Series 15

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 0 -.09 .21 .13 -.37 -.14 -.30 -.06 -.07 -.12 .08 .41\*-.01 -.27 -.03 -.10 -.04 .08 .02 .03 .34 -.21

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

1977 2006 -9 -.16 .28\*-.22 .08 .23 -.02 -.12 -.45 .16 .03 .17| - - - - - - - - - -

[B] Entire series, effect on correlation ( .366) is:

Lower 1999< -.023 1925< -.021 2001< -.019 1959< -.016 1982< -.014 1939< -.012 Higher 1936 .072 1945 .033

1950 to 1979 segment:

Lower 1959< -.089 1961< -.060 1969< -.049 1953> -.026 1954< -.025 1956< -.022 Higher 1957 .122 1968 .045

1977 to 2006 segment:

Lower 1999< -.065 1982< -.050 2003> -.045 2000> -.037 1989> -.036 2001< -.031 Higher 1985 .314 1978 .028

[D] 4 Absent rings: Year Master N series Absent

1999 .772 20 1 >> WARNING: Ring is not usually narrow

2001 -.201 20 2 >> WARNING: Ring is not usually narrow

2005 .542 20 4 >> WARNING: Ring is not usually narrow

2006 .318 20 6 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1907 -4.9 SD

198a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1907 145 236 256

1910 291 283 228 272 291 328 318 255 271 225

1920 281 284 295 175 289 176 239 232 182 223

1930 261 208 122 156 264 229 58 124 185 103

1940 131 104 180 173 97 24 72 157 129 150

1950 95 37 95 78 56 86 49 11 52 20

1960 36 29 25 73 98 36 12 16 9 29

1970 67 56 26 36 29 16 14 46 52 34

1980 12 12 11 22 43 12 26 21 22 28

1990 18 19 16 18 13 16 10 7 10 0

2000 11 0 5 14 5 0 0

====================================================================================================================================

198b 1906 to 2006 101 years Series 16

[\*] Early part of series cannot be checked from 1906 to 1906 -- not matched by another series

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1977 2006 0 .12 .03 -.21 -.10 .16 .08 .14 -.23 -.14 -.15 .39\* - - - - - - - - - -

[B] Entire series, effect on correlation ( .549) is:

Lower 1907> -.030 1982< -.024 2005< -.020 1909> -.013 2003> -.011 1913> -.011 Higher 1936 .051 1919 .032

1977 to 2006 segment:

Lower 1982< -.097 2005< -.075 2003> -.061 1979> -.034 1999< -.026 2004> -.020 Higher 1985 .139 1997 .064

[D] 2 Absent rings: Year Master N series Absent

2005 .542 20 4 >> WARNING: Ring is not usually narrow

2006 .318 20 6 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

198b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1906 38 175 265 302

1910 304 319 278 336 378 385 363 313 339 252

1920 383 305 326 277 296 267 323 297 320 222

1930 241 158 81 188 239 213 65 100 184 162

1940 222 145 120 152 52 4 30 34 15 58

1950 85 47 105 82 46 94 64 14 45 17

1960 35 106 54 69 72 22 7 17 7 31

1970 68 64 36 37 45 16 14 44 26 39

1980 17 16 10 18 13 9 19 20 20 13

1990 16 27 17 30 34 22 16 30 19 9

2000 3 6 8 18 11 0 0

====================================================================================================================================

199a 1914 to 2006 93 years Series 17

[B] Entire series, effect on correlation ( .579) is:

Lower 1936> -.060 1968< -.013 1920< -.010 1962> -.009 1994< -.009 1970< -.007 Higher 1919 .028 1957 .015

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1957 -4.6 SD

199a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1914 322 324 269 264 255 195

1920 237 311 244 207 267 252 232 271 242 203

1930 184 158 106 187 261 264 150 141 156 168

1940 205 164 197 195 162 115 132 186 146 189

1950 177 175 178 139 149 207 199 35 92 165

1960 128 110 144 163 125 118 82 99 38 133

1970 102 78 89 96 105 98 80 98 133 123

1980 94 95 121 35 48 36 54 53 76 39

1990 21 53 45 51 36 28 17 37 39 57

2000 31 24 52 43 12 63 70

====================================================================================================================================

199b 1914 to 2006 93 years Series 18

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1914 1943 0 - - -.07 .10 -.20 .02 -.03 .05 -.16 .00 .21\*-.08 -.12 .16 -.08 .10 .17 .13 -.27 -.14 -.11

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

1965 1994 0 -.22 -.11 -.22 -.23 .22 -.05 .26 -.09 .13 -.05 .41\*-.39 -.18 .04 .11 .37 .10 -.29 -.14 -.09 .04

1977 2006 -5 -.12 -.13 -.18 -.06 -.04 .27\* .18 -.29 .15 .20 .12| - - - - - - - - - -

[B] Entire series, effect on correlation ( .297) is:

Lower 2005< -.034 1916< -.033 1987< -.023 1936> -.021 1997< -.020 1919> -.016 Higher 1957 .039 1968 .028

1914 to 1943 segment:

Lower 1916< -.084 1919> -.028 1930< -.021 1936> -.017 1931< -.016 1929> -.011 Higher 1932 .035 1940 .025

1965 to 1994 segment:

Lower 1987< -.128 1976> -.041 1983> -.041 1980< -.039 1984> -.011 1979< -.010 Higher 1968 .126 1985 .104

1977 to 2006 segment:

Lower 2005< -.125 1997< -.076 1987< -.074 2004> -.054 1983> -.032 1995> -.014 Higher 1985 .161 2000 .035

199b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1914 292 257 219 249 264 242

1920 249 298 256 213 191 219 188 203 250 211

1930 144 110 126 127 190 202 136 150 145 143

1940 210 129 184 140 159 101 85 193 112 153

1950 161 98 125 88 98 144 122 55 84 144

1960 123 152 146 144 141 125 84 142 51 100

1970 82 68 70 68 88 86 79 103 114 31

1980 17 67 91 89 83 21 41 18 86 41

1990 54 61 60 59 67 66 52 49 66 100

2000 59 73 87 72 102 55 89

====================================================================================================================================

200a 1907 to 2006 100 years Series 19

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 0 -.21 -.05 -.03 -.10 -.11 .01 .00 .22 -.24 -.34 .36\*-.09 .06 .15 -.04 .04 .09 -.09 .16 -.06 -.05

1965 1994 -6 -.09 -.23 .09 -.04 .36\* .09 -.07 .01 -.33 -.16 .19|-.07 -.13 .16 .24 -.15 .12 .03 -.11 .02 -.03

[B] Entire series, effect on correlation ( .419) is:

Lower 1950< -.071 1912< -.014 1947< -.014 1946> -.012 1966> -.012 1968> -.009 Higher 1936 .037 1945 .015

1950 to 1979 segment:

Lower 1950< -.124 1966> -.046 1968> -.040 1953> -.017 1978< -.012 1967> -.011 Higher 1957 .057 1952 .025

1965 to 1994 segment:

Lower 1966> -.058 1968> -.031 1978< -.022 1991< -.021 1981< -.020 1972< -.017 Higher 1969 .041 1988 .041

[C] Year-to-year changes diverging by over 4.0 std deviations:

1950 1951 4.6 SD

[D] 1 Absent rings: Year Master N series Absent

1950 .057 20 1 >> WARNING: Ring is not usually narrow

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1950 -7.2 SD

200a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1907 269 272 310

1910 326 424 263 307 384 455 456 418 478 366

1920 466 501 410 283 356 558 492 583 473 365

1930 404 351 231 278 370 380 165 166 258 260

1940 278 293 261 224 153 83 179 115 126 88

1950 0 145 218 175 177 149 173 110 154 194

1960 136 169 142 172 208 136 206 295 200 193

1970 262 174 115 118 124 143 119 127 118 80

1980 132 102 122 127 108 99 89 179 252 90

1990 76 85 80 118 149 110 83 145 201 169

2000 26 75 89 75 54 50 54

====================================================================================================================================

200b 1913 to 2006 94 years Series 20

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 0 -.33 -.27 .06 -.08 -.01 .12 -.04 .22 -.04 -.07 .35\*-.15 -.12 -.15 -.02 -.05 -.18 .11 .18 .00 -.13

[B] Entire series, effect on correlation ( .630) is:

Lower 1919> -.021 1957> -.015 1988< -.011 1924< -.010 1971< -.010 2004< -.010 Higher 1936 .083 1945 .050

1950 to 1979 segment:

Lower 1957> -.043 1971< -.036 1961< -.033 1979> -.031 1966> -.029 1960< -.020 Higher 1968 .136 1955 .050

200b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1913 424 477 525 541 542 521 430

1920 482 471 361 302 303 465 360 347 322 251

1930 366 390 333 380 394 395 149 179 329 389

1940 396 351 296 264 230 64 139 336 212 224

1950 121 105 160 123 176 273 233 143 74 92

1960 59 60 102 191 137 100 123 152 85 112

1970 165 103 96 120 104 123 120 189 162 162

1980 94 114 146 98 79 44 50 49 39 49

1990 24 61 41 39 76 68 27 75 76 112

2000 43 36 38 31 14 32 28

====================================================================================================================================

PART 7: DESCRIPTIVE STATISTICS: Mount Hunger-Middlesex-Low Corr3-30 13:48 Wed 21 Feb 2007 Page 6

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Corr //-------- Unfiltered --------\\ //---- Filtered -----\\

No. No. No. with Mean Max Std Auto Mean Max Std Auto AR

Seq Series Interval Years Segmt Flags Master msmt msmt dev corr sens value dev corr ()

--- -------- --------- ----- ----- ----- ------ ----- ----- ----- ----- ----- ----- ----- ----- --

1 191a 1917 2006 90 6 3 .464 1.73 2.99 .553 .581 .252 2.45 .428 -.088 2

2 191b 1918 2006 89 6 3 .514 1.64 3.00 .492 .443 .255 2.64 .505 -.001 1

3 192a 1911 2006 96 6 2 .499 1.51 5.33 1.482 .960 .439 2.66 .442 .050 1

4 192b 1913 2006 94 6 2 .448 1.68 5.84 1.498 .957 .275 2.67 .435 -.013 1

5 193a 1925 2006 82 5 1 .642 1.43 2.26 .498 .707 .252 2.41 .489 -.010 2

6 193b 1916 2006 91 6 1 .645 1.36 2.57 .615 .754 .307 2.50 .450 .045 2

7 194a 1907 2006 100 6 3 .623 1.77 5.43 1.617 .929 .395 2.55 .390 -.059 1

8 194b 1915 2006 92 6 3 .601 2.23 7.21 1.808 .908 .292 2.47 .422 -.024 1

9 195a 1928 2006 79 5 2 .633 1.39 3.45 .821 .812 .289 2.60 .421 -.010 1

10 195b 1922 2006 85 5 3 .485 1.70 3.33 .699 .713 .212 2.62 .481 -.026 1

11 196a 1913 2006 94 6 3 .647 1.50 3.53 .855 .803 .295 2.49 .362 -.069 1

12 196b 1910 2006 97 6 0 .571 1.46 3.53 .921 .772 .351 2.45 .318 -.001 1

13 197a 1910 2006 97 6 0 .688 1.39 3.34 .774 .847 .256 2.64 .402 -.023 1

14 197b 1912 2006 95 6 0 .744 1.44 3.83 .958 .903 .256 2.52 .447 -.021 2

15 198a 1907 2006 100 6 2 .366 1.04 3.28 1.012 .898 .513 2.49 .422 -.033 4

16 198b 1906 2006 101 6 1 .549 1.12 3.85 1.201 .928 .491 2.56 .442 .025 1

17 199a 1914 2006 93 6 0 .579 1.35 3.24 .801 .866 .301 2.39 .376 -.055 2

18 199b 1914 2006 93 6 3 .297 1.25 2.98 .670 .828 .297 2.63 .544 .042 1

19 200a 1907 2006 100 6 2 .419 2.15 5.83 1.321 .861 .298 2.51 .376 -.034 2

20 200b 1913 2006 94 6 1 .630 1.97 5.42 1.499 .908 .305 2.74 .481 -.029 2

--- -------- --------- ----- ----- ----- ------ ----- ----- ----- ----- ----- ----- ----- ----- --

Total or mean: 1862 117 35 .551 1.55 7.21 1.017 .823 .320 2.74 .430 -.017

- = [ COFECHA MHM\_LCOF ] = -