[] Dendrochronology Program Library Run FAGR Program COF 10:41 Fri 04 Sep 2020 Page 1

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[] P R O G R A M C O F E C H A Version 6.06P 31295

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QUALITY CONTROL AND DATING CHECK OF TREE-RING MEASUREMENTS

File of DATED series: SCBI\_fagr.rwl

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

1 Cubic smoothing spline 50% wavelength cutoff for filtering

32 years

2 Segments examined are 50 years lagged successively by 25 years

3 Autoregressive model applied A Residuals are used in master dating series and testing

4 Series transformed to logarithms Y Each series log-transformed for master dating series and testing

5 CORRELATION is Pearson (parametric, quantitative)

Critical correlation, 99% confidence level .3281

6 Master dating series saved N

7 Ring measurements listed N

8 Parts printed 1234567

9 Absent rings are omitted from master series and segment correlations (Y)

Time span of Master dating series is 1887 to 2009 123 years

Continuous time span is 1887 to 2009 123 years

Portion with two or more series is 1902 to 2009 108 years

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*C\* Number of dated series 81 \*C\*

\*O\* Master series 1887 2009 123 yrs \*O\*

\*F\* Total rings in all series 4323 \*F\*

\*E\* Total dated rings checked 4308 \*E\*

\*C\* Series intercorrelation .460 \*C\*

\*H\* Average mean sensitivity .263 \*H\*

\*A\* Segments, possible problems 16 \*A\*

\*\*\* Mean length of series 53.4 \*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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

No ring measurements of zero value

PART 2: TIME PLOT OF TREE-RING SERIES: 10:41 Fri 04 Sep 2020 Page 2

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1050 1100 1150 1200 1250 1300 1350 1400 1450 1500 1550 1600 1650 1700 1750 1800 1850 1900 1950 2000 2050 Ident Seq Time-span Yrs

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. . . . . . . . . . . . . . . . . <===========> . 30421r 1 1887 2004 118

. . . . . . . . . . . . . . . . . <=========> . 30233 2 1902 2008 107

. . . . . . . . . . . . . . . . . . <=======> . 40873 3 1920 2009 90

. . . . . . . . . . . . . . . . . . <=======> . 90616 4 1921 2006 86

. . . . . . . . . . . . . . . . . . <=======> . 40554 5 1928 2009 82

. . . . . . . . . . . . . . . . . . <======> . 30333 6 1930 2009 80

. . . . . . . . . . . . . . . . . . <======> . 40563 7 1932 2009 78

. . . . . . . . . . . . . . . . . . <======> . 90658 8 1933 2009 77

. . . . . . . . . . . . . . . . . . <======> . 10730 9 1936 2002 67

. . . . . . . . . . . . . . . . . . <=====> . 60111 10 1940 2009 70

. . . . . . . . . . . . . . . . . . <=====> . 111208 11 1940 2009 70

. . . . . . . . . . . . . . . . . . <=====> . 10647 12 1942 2009 68

. . . . . . . . . . . . . . . . . . <=====> . 50340 13 1944 2009 66

. . . . . . . . . . . . . . . . . . <=====> . 101100 14 1944 2007 64

. . . . . . . . . . . . . . . . . . <=====> . 90278 15 1946 2005 60

. . . . . . . . . . . . . . . . . . <=====> . 60486 16 1948 2008 61

. . . . . . . . . . . . . . . . . . <=====> . 90062 17 1948 2009 62

. . . . . . . . . . . . . . . . . . <====> . 30214 18 1950 2009 60

. . . . . . . . . . . . . . . . . . <====> . 90567 19 1950 2008 59

. . . . . . . . . . . . . . . . . . <====> . 111171 20 1950 2009 60

. . . . . . . . . . . . . . . . . . <====> . 40549 21 1951 2009 59

. . . . . . . . . . . . . . . . . . <====> . 70182 22 1951 2009 59

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. . . . . . . . . . . . . . . . . . <====> . 60129 24 1952 2009 58

. . . . . . . . . . . . . . . . . . <====> . 132532 25 1952 2007 56

. . . . . . . . . . . . . . . . . . <====> . 40493 26 1953 2009 57

. . . . . . . . . . . . . . . . . . <====> . 92562 27 1953 2009 57

. . . . . . . . . . . . . . . . . . <====> . 30472 28 1954 2001 48

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. . . . . . . . . . . . . . . . . . <====> . 60086 30 1954 2009 56

. . . . . . . . . . . . . . . . . . <====> . 60426 31 1954 2009 56

. . . . . . . . . . . . . . . . . . <====> . 90121 32 1954 2009 56

. . . . . . . . . . . . . . . . . . <====> . 110797 33 1954 2009 56

. . . . . . . . . . . . . . . . . . <====> . 150941 34 1954 2009 56

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. . . . . . . . . . . . . . . . . . <====> . 50559 36 1955 2009 55

. . . . . . . . . . . . . . . . . . <====> . 152529 37 1955 2009 55

. . . . . . . . . . . . . . . . . . <====> . 52010 38 1956 2009 54

. . . . . . . . . . . . . . . . . . <====> . 50301 39 1958 2007 50

. . . . . . . . . . . . . . . . . . <====> . 50330 40 1958 2009 52

. . . . . . . . . . . . . . . . . . <====> . 70018 41 1958 2009 52

. . . . . . . . . . . . . . . . . . <====> . 10619 42 1959 2009 51

. . . . . . . . . . . . . . . . . . <====> . 52130 43 1959 2009 51

. . . . . . . . . . . . . . . . . . <====> . 150911 44 1959 2009 51

. . . . . . . . . . . . . . . . . . .<===> . 10675 45 1960 2009 50

. . . . . . . . . . . . . . . . . . .<===> . 50433 46 1960 2006 47

. . . . . . . . . . . . . . . . . . .<===> . 90276 47 1960 2009 50

. . . . . . . . . . . . . . . . . . .<===> . 151123 48 1961 2009 49

. . . . . . . . . . . . . . . . . . .<===> . 171150 49 1961 2000 40

. . . . . . . . . . . . . . . . . . .<===> . 40889 50 1962 2009 48

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1050 1100 1150 1200 1250 1300 1350 1400 1450 1500 1550 1600 1650 1700 1750 1800 1850 1900 1950 2000 2050

PART 2: TIME PLOT OF TREE-RING SERIES: 10:41 Fri 04 Sep 2020 Page 3

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1050 1100 1150 1200 1250 1300 1350 1400 1450 1500 1550 1600 1650 1700 1750 1800 1850 1900 1950 2000 2050 Ident Seq Time-span Yrs

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. . . . . . . . . . . . . . . . . . . <==> . 40585 80 1979 2009 31

. . . . . . . . . . . . . . . . . . . <=> . 10194 81 1983 2009 27

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1050 1100 1150 1200 1250 1300 1350 1400 1450 1500 1550 1600 1650 1700 1750 1800 1850 1900 1950 2000 2050

PART 3: Master Dating Series: 10:41 Fri 04 Sep 2020 Page 4

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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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1900 .253 1 1950 .695 20 2000 1.217 81

1901 1.823 1 1951 .041 23 2001 .555 80

1902 .614 2 1952 -.584 25 2002 -.127 79

1903 1.050 2 1953 -.375 27 2003 .658 78

1904 1.267 2 1954 -.214 34 2004 -.388 78

1905 1.149 2 1955 -.362 37 2005 -.267 77

1906 -.312 2 1956 .405 38 2006 -.382 75

1907 -.215 2 1957 .284 38 2007 .376 73

1908 -1.256 2 1958 1.096 41 2008 -.147 68

1909 .328 2 1959 .008 44 2009 .665 63

1910 .737 2 1960 .882 47

1911 -1.857 2 1961 .573 49

1912 -2.020 2 1962 -.151 52

1913 -1.404 2 1963 .044 55

1914 .546 2 1964 -1.143 59

1915 -.551 2 1965 -.512 59

1916 1.178 2 1966 -1.995 60

1917 .567 2 1967 .135 62

1918 -1.541 2 1968 .620 64

1919 .018 2 1969 1.312 67

1920 .021 3 1970 .006 68

1921 .925 4 1971 -.093 71

1922 1.656 4 1972 .285 71

1923 -.679 4 1973 -.268 72

1924 .781 4 1974 -.829 74

1925 -.034 4 1975 -1.273 76

1926 -1.713 4 1976 -.081 76

1927 .989 4 1977 -.784 78

1928 1.177 5 1978 -.125 78

1929 1.660 5 1979 -1.010 80

1930 -1.888 6 1980 2.071 80

1931 -.781 6 1981 1.490 80

1932 -1.304 7 1982 1.455 80

1933 .821 8 1983 .249 81

1934 -.075 8 1984 .279 81

1935 .019 8 1985 .138 81

1936 .532 9 1986 .166 81

1887 -.437 1 1937 -.350 9 1987 -.527 81

1888 -2.396 1 1938 .384 9 1988 -.381 81

1889 2.390 1 1939 -.343 9 1989 -1.141 81

1890 -.068 1 1940 -.101 11 1990 -.075 81

1891 -.474 1 1941 .431 11 1991 -2.014 81

1892 2.343 1 1942 .885 12 1992 -.197 81

1893 -3.521 1 1943 -.802 12 1993 .540 81

1894 .069 1 1944 -1.104 14 1994 .773 81

1895 .696 1 1945 1.120 14 1995 -.728 81

1896 -.038 1 1946 .974 15 1996 .531 81

1897 .192 1 1947 -.111 15 1997 .428 81

1898 -2.057 1 1948 -.119 17 1998 -.322 81

1899 .016 1 1949 .363 17 1999 -1.903 81

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PART 4: Master Bar Plot: 10:41 Fri 04 Sep 2020 Page 5

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Year Rel value Year Rel value Year Rel value Year Rel value Year Rel value Year Rel value Year Rel value Year Rel value

1900------A 1950--------C 2000---------E

1901----------G 1951-----@ 2001-------B

1902--------B 1952--b 2002----a

1903---------D 1953---b 2003--------C

1904---------E 1954---a 2004---b

1905---------E 1955---a 2005---a

1906---a 1956-------B 2006---b

1907---a 1957------A 2007------B

1908-e 1958---------D 2008----a

1909------A 1959-----@ 2009--------C

1910--------C 1960---------D

1911g 1961-------B

1912h 1962----a

1913-f 1963-----@

1914-------B 1964-e

1915--b 1965--b

1916---------E 1966h

1917-------B 1967------A

1918f 1968--------B

1919-----@ 1969---------E

1920-----@ 1970-----@

1921---------D 1971----@

1922----------G 1972------A

1923--c 1973---a

1924--------C 1974-c

1925-----@ 1975-e

1926g 1976----@

1927---------D 1977--c

1928---------E 1978----a

1929----------G 1979-d

1930h 1980----------H

1931--c 1981----------F

1932-e 1982----------F

1933--------C 1983------A

1934----@ 1984------A

1935-----@ 1985------A

1936-------B 1986------A

1887--b 1937---a 1987--b

1888j 1938------B 1988---b

1889----------J 1939---a 1989-e

1890----@ 1940----@ 1990----@

1891--b 1941-------B 1991h

1892----------I 1942---------D 1992----a

1893n 1943--c 1993-------B

1894-----@ 1944-d 1994--------C

1895--------C 1945---------D 1995--c

1896-----@ 1946---------D 1996-------B

1897------A 1947----@ 1997-------B

1898h 1948----@ 1998---a

1899-----@ 1949------A 1999h

PART 5: CORRELATION OF SERIES BY SEGMENTS: 10:41 Fri 04 Sep 2020 Page 5

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Correlations of 50-year dated segments, lagged 25 years

Flags: A = correlation under .3281 but highest as dated; B = correlation higher at other than dated position

Seq Series Time\_span 1900 1925 1950 1975

1949 1974 1999 2024

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

1 30421r 1887 2004 .35 .41 .33 .23A

2 30233 1902 2008 .33 .49 .37 .34

3 40873 1920 2009 .53 .52 .65 .71

4 90616 1921 2006 .48 .50 .60 .56

5 40554 1928 2009 .61 .43 .34

6 30333 1930 2009 .36 .60 .62

7 40563 1932 2009 .48 .46 .44

8 90658 1933 2009 .32A .34 .31A

9 10730 1936 2002 .58 .68 .69

10 60111 1940 2009 .24A .41 .40

11 111208 1940 2009 .23A .38 .41

12 10647 1942 2009 .20B .39 .39

13 50340 1944 2009 .45 .45 .43

14 101100 1944 2007 .43 .61 .60

15 90278 1946 2005 .69 .59 .61

16 60486 1948 2008 .50 .57 .66

17 90062 1948 2009 .57 .56 .59

18 30214 1950 2009 .40 .42

19 90567 1950 2008 .62 .54

20 111171 1950 2009 .40 .37

21 40549 1951 2009 .58 .50

22 70182 1951 2009 .40 .42

23 102157 1951 2009 .54 .50

24 60129 1952 2009 .42 .43

25 132532 1952 2007 .46 .44

26 40493 1953 2009 .61 .56

27 92562 1953 2009 .32A .36

28 30472 1954 2001 .32A

29 50563 1954 2009 .16B .25A

30 60086 1954 2009 .48 .44

31 60426 1954 2009 .64 .66

32 90121 1954 2009 .51 .49

33 110797 1954 2009 .38 .41

34 150941 1954 2009 .62 .60

35 50557 1955 2009 .34 .35

36 50559 1955 2009 .55 .56

37 152529 1955 2009 .52 .55

38 52010 1956 2009 .52 .51

39 50301 1958 2007 .63

40 50330 1958 2009 .72 .70

41 70018 1958 2009 .64 .60

42 10619 1959 2009 .42 .40

43 52130 1959 2009 .65 .61

44 150911 1959 2009 .58 .50

45 10675 1960 2009 .62

46 50433 1960 2006 .26A

47 90276 1960 2009 .82

48 151123 1961 2009 .47

49 171150 1961 2000 .29B

50 40889 1962 2009 .59

51 60295 1962 2009 .34

52 60467 1962 2009 .25A

53 40480 1963 2009 .69

54 151140 1963 2009 .52

55 182695 1963 2009 .42

56 10743 1964 2009 .58

57 40536 1964 2009 .46

58 50299 1964 2009 .45

59 60339 1964 2009 .32A

60 110795 1966 2009 .67

61 20693 1967 2009 .43

62 50652 1967 2009 .45

63 20847 1968 2009 .41

64 30483 1968 2009 .57

65 40479 1969 2009 .41

66 171306 1969 2009 .35

67 190635 1969 2009 .46

68 152661 1970 2009 .54

69 20820 1971 2009 .61

70 60145 1971 2009 .39

71 100956 1971 2007 .57

72 40485 1973 2009 .56

73 10664 1974 2009 .71

74 160760 1974 2008 .46

75 12032 1975 2005 .35

76 101150 1975 2009 .46

77 20627 1977 2009 .53

78 70180 1977 2007 .30A

79 30534 1979 2008 .19A

80 40585 1979 2009 .69

81 10194 1983 2009 .35

Av segment correlation .42 .45 .49 .48

PART 6: POTENTIAL PROBLEMS: 10:41 Fri 04 Sep 2020 Page 6

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For each series with potential problems the following diagnostics may appear:

[A] Correlations with master dating series of flagged 50-year segments of series filtered with 32-year spline,

at every point from ten years earlier (-10) to ten years later (+10) than dated

[B] Effect of those data values which most lower or raise correlation with master series

Symbol following year indicates value in series is greater (>) or lesser (<) than master series value

[C] Year-to-year changes very different from the mean change in other series

[D] Absent rings (zero values)

[E] Values which are statistical outliers from mean for the year

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

30421r 1887 to 2004 118 years Series 1

[\*] Early part of series cannot be checked from 1887 to 1901 -- 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

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

1955 2004 0 .04 -.14 -.37 -.03 -.08 .01 -.05 .19 .22 .05 .23\* .08 -.07 -.18 .02 -.27 - - - - -

[B] Entire series, effect on correlation ( .287) is:

Lower 1969< -.037 1906> -.026 2001< -.022 1999> -.021 2000< -.020 1909> -.017 Higher 1991 .044 1930 .039

1955 to 2004 segment:

Lower 1969< -.077 1999> -.048 2000< -.042 2001< -.041 1989> -.016 1955> -.011 Higher 1991 .107 1966 .030

[E] Outliers 3 3.0 SD above or -4.5 SD below mean for year

1906 +3.4 SD; 1977 -4.6 SD; 2001 -4.7 SD

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

30233 1902 to 2008 107 years Series 2

[B] Entire series, effect on correlation ( .329) is:

Lower 1980< -.039 1906< -.022 1931< -.021 1989> -.021 1913> -.021 1909< -.020 Higher 1999 .029 1966 .023

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1913 +3.0 SD; 1989 +3.3 SD

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

40873 1920 to 2009 90 years Series 3

[B] Entire series, effect on correlation ( .605) is:

Lower 1957< -.021 1958< -.021 1934< -.016 2003< -.015 2004> -.015 1948> -.012 Higher 1999 .040 1966 .021

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

90616 1921 to 2006 86 years Series 4

[B] Entire series, effect on correlation ( .504) is:

Lower 1942< -.018 1969< -.017 2001< -.014 1941< -.013 1930> -.012 1924< -.012 Higher 1980 .027 1991 .026

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

40554 1928 to 2009 82 years Series 5

[B] Entire series, effect on correlation ( .398) is:

Lower 1978< -.067 2000< -.050 1999> -.024 1984< -.019 2003< -.017 1934> -.013 Higher 1966 .062 1930 .048

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

1999 2000 -4.3 SD

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

1978 -4.5 SD

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

30333 1930 to 2009 80 years Series 6

[B] Entire series, effect on correlation ( .510) is:

Lower 1966> -.031 1944> -.022 1938< -.019 1931> -.018 1947> -.015 2002< -.013 Higher 1980 .033 2000 .018

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

40563 1932 to 2009 78 years Series 7

[B] Entire series, effect on correlation ( .380) is:

Lower 1999> -.059 1993< -.029 1935< -.028 1934> -.024 1968< -.023 1943> -.022 Higher 1966 .057 1980 .037

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

90658 1933 to 2009 77 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

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1933 1982 0 -.14 .15 -.13 -.10 -.01 .01 .15 -.26 .00 .10 .32\*-.12 -.11 -.12 .10 -.32 -.16 -.10 -.12 -.09 -.02

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

1960 2009 0 -.01 .24 .12 -.13 .02 -.08 .21 -.16 .22 .07 .31\* - - - - - - - - - -

[B] Entire series, effect on correlation ( .254) is:

Lower 2000< -.033 1936< -.032 1989> -.028 1997< -.021 1935> -.018 2004> -.018 Higher 1999 .049 1975 .034

1933 to 1982 segment:

Lower 1936< -.048 1935> -.035 1934> -.026 1960< -.022 1945< -.021 1982< -.018 Higher 1975 .051 1966 .033

1960 to 2009 segment:

Lower 2000< -.049 1989> -.040 1997< -.033 2004> -.024 1960< -.023 1996< -.022 Higher 1999 .062 1991 .034

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

10730 1936 to 2002 67 years Series 9

[B] Entire series, effect on correlation ( .627) is:

Lower 1937< -.028 1989> -.027 1939> -.022 1947< -.012 1987> -.009 1993< -.008 Higher 1991 .048 1999 .037

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

60111 1940 to 2009 70 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

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

1940 1989 0 -.07 .06 .02 .01 -.07 .10 .02 -.03 .08 -.04 .24\* .12 .01 -.23 .21 -.05 -.17 -.31 -.07 -.13 -.27

[B] Entire series, effect on correlation ( .327) is:

Lower 1964> -.034 1946< -.033 1991> -.030 1998> -.019 1992< -.017 1947> -.017 Higher 1999 .120 1966 .059

1940 to 1989 segment:

Lower 1946< -.056 1964> -.054 1947> -.027 1942< -.026 1979> -.019 1980< -.019 Higher 1966 .130 1945 .031

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

111208 1940 to 2009 70 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

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

1940 1989 0 .14 .01 .03 -.12 .09 -.13 .12 -.03 -.15 -.05 .23\* .16 .08 .05 .17 .01 -.04 -.11 -.09 -.27 -.18

[B] Entire series, effect on correlation ( .301) is:

Lower 1999> -.036 1947< -.029 1966> -.021 1968< -.019 1955> -.017 2002> -.016 Higher 1991 .052 1980 .039

1940 to 1989 segment:

Lower 1966> -.029 1947< -.027 1968< -.026 1955> -.026 1977> -.025 1944> -.017 Higher 1980 .070 1989 .028

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

10647 1942 to 2009 68 years Series 12

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

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

1942 1991 -9 -.02 .21\* .06 -.17 -.23 .08 .17 -.38 .11 .14 .20|-.06 .13 .00 -.11 -.12 -.22 .02 -.33 .02 -.02

[B] Entire series, effect on correlation ( .197) is:

Lower 1948< -.067 1991> -.048 1947> -.030 1944> -.018 1994< -.017 1945< -.016 Higher 1980 .047 1969 .034

1942 to 1991 segment:

Lower 1948< -.097 1991> -.064 1947> -.039 1944> -.023 1945< -.023 1976< -.013 Higher 1980 .062 1969 .045

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

1991 +3.2 SD

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

50340 1944 to 2009 66 years Series 13

[B] Entire series, effect on correlation ( .371) is:

Lower 1950< -.038 1996< -.032 2007< -.029 2004> -.023 1960< -.018 1947> -.018 Higher 1991 .073 1980 .029

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

101100 1944 to 2007 64 years Series 14

[B] Entire series, effect on correlation ( .539) is:

Lower 1991> -.051 1945< -.038 2000< -.029 1964> -.021 1948> -.018 1993< -.015 Higher 1999 .074 1980 .029

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

90278 1946 to 2005 60 years Series 15

[B] Entire series, effect on correlation ( .587) is:

Lower 1996< -.063 1999> -.035 1960< -.018 1957< -.015 1977> -.015 1950< -.013 Higher 1966 .067 1991 .053

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

60486 1948 to 2008 61 years Series 16

[B] Entire series, effect on correlation ( .594) is:

Lower 1967< -.079 1954< -.058 1995> -.013 1979> -.010 1973> -.009 1989> -.008 Higher 1991 .064 1999 .060

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

90062 1948 to 2009 62 years Series 17

[B] Entire series, effect on correlation ( .577) is:

Lower 1994< -.034 1979> -.020 1991> -.016 1998> -.013 2007< -.013 1961< -.013 Higher 1966 .074 1980 .026

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

30214 1950 to 2009 60 years Series 18

[B] Entire series, effect on correlation ( .421) is:

Lower 1992< -.072 1997< -.039 1975> -.018 1974> -.018 1951> -.013 1967< -.012 Higher 1966 .054 1982 .023

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90567 1950 to 2008 59 years Series 19

[B] Entire series, effect on correlation ( .504) is:

Lower 2001< -.088 1955< -.034 1966> -.015 2002> -.014 2006> -.013 1991> -.011 Higher 1999 .066 1964 .021

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

111171 1950 to 2009 60 years Series 20

[B] Entire series, effect on correlation ( .376) is:

Lower 1981< -.049 1999> -.020 1979> -.018 2006> -.016 1977> -.015 2008< -.013 Higher 1980 .082 1991 .049

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

40549 1951 to 2009 59 years Series 21

[B] Entire series, effect on correlation ( .502) is:

Lower 2009< -.041 1977> -.022 2008> -.021 1999> -.014 1971< -.011 1967< -.010 Higher 2000 .022 1989 .017

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

70182 1951 to 2009 59 years Series 22

[B] Entire series, effect on correlation ( .413) is:

Lower 1981< -.059 1999> -.037 1976< -.018 1975> -.015 1969< -.015 2005< -.013 Higher 1991 .048 2000 .037

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

102157 1951 to 2009 59 years Series 23

[B] Entire series, effect on correlation ( .496) is:

Lower 2002< -.047 1980< -.042 1975> -.020 1998> -.018 1970> -.016 1964> -.014 Higher 1991 .069 1999 .041

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

60129 1952 to 2009 58 years Series 24

[B] Entire series, effect on correlation ( .359) is:

Lower 1956< -.058 1991> -.038 1966> -.022 1952> -.019 2005< -.018 2004> -.016 Higher 1995 .038 1980 .038

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

132532 1952 to 2007 56 years Series 25

[B] Entire series, effect on correlation ( .416) is:

Lower 1997< -.048 1995> -.032 1964> -.029 2004> -.026 1976< -.022 1958< -.019 Higher 1999 .099 1991 .080

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

1971 +3.1 SD

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

40493 1953 to 2009 57 years Series 26

[B] Entire series, effect on correlation ( .552) is:

Lower 2008< -.034 1987< -.027 1991> -.021 2004> -.018 1979> -.016 1955> -.015 Higher 1999 .077 2000 .022

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

92562 1953 to 2009 57 years Series 27

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

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1953 2002 0 .13 .00 .09 -.15 -.01 -.18 .05 -.22 .22 -.22 .32\*-.08 -.16 .00 -.05 .08 -.12 .13 - - -

[B] Entire series, effect on correlation ( .324) is:

Lower 2001< -.118 1966> -.040 1995> -.028 1986< -.015 2002> -.013 1953> -.013 Higher 1980 .039 1999 .036

1953 to 2002 segment:

Lower 2001< -.123 1966> -.043 1995> -.029 1986< -.016 2002> -.013 1953> -.013 Higher 1980 .042 1999 .037

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

2001 -5.2 SD

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

30472 1954 to 2001 48 years Series 28

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

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

1954 2001 0 .21 -.17 -.22 .02 -.25 -.17 -.10 .11 .00 .07 .32\* .22 -.11 .03 .05 .07 -.08 -.08 -.02 - -

[B] Entire series, effect on correlation ( .321) is:

Lower 1991> -.048 1979> -.047 1975> -.032 1999> -.024 1958< -.019 1996< -.016 Higher 1966 .175 1980 .037

1954 to 2001 segment:

Lower 1991> -.048 1979> -.047 1975> -.032 1999> -.024 1958< -.019 1996< -.016 Higher 1966 .175 1980 .037

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

1966 -4.9 SD

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

50563 1954 to 2009 56 years Series 29

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

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

1954 2003 2 .12 .05 .09 -.05 -.05 .02 .00 -.15 -.36 .04 .16|-.21 .16\* .12 .13 -.24 .03 - - - -

1960 2009 0 .05 .05 .01 .00 .01 .12 -.11 -.19 -.30 .01 .25\* - - - - - - - - - -

[B] Entire series, effect on correlation ( .188) is:

Lower 1991> -.112 1966> -.043 1958< -.039 1998> -.019 1984< -.017 1992< -.011 Higher 1969 .047 1980 .038

1954 to 2003 segment:

Lower 1991> -.124 1966> -.046 1958< -.043 1998> -.021 1984< -.018 1992< -.012 Higher 1969 .055 1980 .046

1960 to 2009 segment:

Lower 1991> -.124 1966> -.048 1984< -.022 1998> -.020 1992< -.014 1971< -.010 Higher 1969 .046 1980 .035

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

1991 +4.2 SD

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

60086 1954 to 2009 56 years Series 30

[B] Entire series, effect on correlation ( .422) is:

Lower 2006< -.059 1966> -.029 1970> -.024 1976< -.020 1979> -.018 2004> -.014 Higher 1999 .100 1980 .036

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

60426 1954 to 2009 56 years Series 31

[B] Entire series, effect on correlation ( .639) is:

Lower 1978< -.066 1961< -.027 1970> -.020 2008> -.015 1956< -.014 2003< -.013 Higher 1991 .034 1966 .030

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90121 1954 to 2009 56 years Series 32

[B] Entire series, effect on correlation ( .471) is:

Lower 1965< -.069 2008> -.025 1995> -.018 2003< -.016 1966> -.015 2007< -.014 Higher 1991 .073 1964 .020

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

110797 1954 to 2009 56 years Series 33

[B] Entire series, effect on correlation ( .368) is:

Lower 1961< -.058 1955< -.045 1977> -.030 1998> -.019 1995> -.016 2008> -.013 Higher 1969 .025 1991 .022

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150941 1954 to 2009 56 years Series 34

[B] Entire series, effect on correlation ( .584) is:

Lower 2004> -.028 1977> -.024 1999> -.019 1954> -.014 2007< -.012 1997< -.011 Higher 1966 .041 1991 .032

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50557 1955 to 2009 55 years Series 35

[B] Entire series, effect on correlation ( .344) is:

Lower 1980< -.059 1966> -.052 1970> -.024 1994< -.018 1960< -.018 1989> -.015 Higher 1964 .050 1999 .036

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50559 1955 to 2009 55 years Series 36

[B] Entire series, effect on correlation ( .545) is:

Lower 1980< -.042 1995> -.027 1955> -.022 1975> -.021 1987> -.019 1969< -.013 Higher 1991 .079 1999 .068

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

1972 +3.2 SD

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

152529 1955 to 2009 55 years Series 37

[B] Entire series, effect on correlation ( .522) is:

Lower 1995> -.034 1979> -.026 1997< -.020 1974< -.019 1993< -.014 1994< -.013 Higher 1991 .078 1999 .042

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

52010 1956 to 2009 54 years Series 38

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

Lower 1969< -.055 1980< -.031 1979> -.027 1984< -.022 2003< -.017 1985< -.010 Higher 1999 .095 1981 .016

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50301 1958 to 2007 50 years Series 39

[B] Entire series, effect on correlation ( .627) is:

Lower 1991> -.061 1998< -.041 1967< -.028 1992< -.013 1959> -.008 1973> -.007 Higher 1966 .035 1980 .029

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50330 1958 to 2009 52 years Series 40

[B] Entire series, effect on correlation ( .707) is:

Lower 2005< -.026 1965> -.022 2008> -.018 1991> -.016 1972< -.012 1979> -.011 Higher 1966 .044 1980 .016

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70018 1958 to 2009 52 years Series 41

[B] Entire series, effect on correlation ( .605) is:

Lower 1964> -.054 1970< -.044 2009< -.029 1995> -.023 1967< -.013 1974> -.012 Higher 1999 .049 1966 .040

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

10619 1959 to 2009 51 years Series 42

[B] Entire series, effect on correlation ( .401) is:

Lower 1964> -.049 1999> -.040 1965< -.039 1990< -.038 2009< -.022 1968< -.021 Higher 1980 .065 2000 .033

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

1964 +3.0 SD

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

52130 1959 to 2009 51 years Series 43

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

Lower 2009< -.053 1970< -.053 1992< -.038 2008> -.021 2001< -.011 1959> -.009 Higher 1966 .040 1980 .023

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150911 1959 to 2009 51 years Series 44

[B] Entire series, effect on correlation ( .493) is:

Lower 2009< -.091 1977> -.021 1999> -.020 1986< -.017 1998> -.017 1961< -.015 Higher 1991 .059 1966 .049

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

10675 1960 to 2009 50 years Series 45

[B] Entire series, effect on correlation ( .618) is:

Lower 2005< -.044 1995> -.040 1968< -.018 1975> -.013 1974> -.012 2000< -.010 Higher 1991 .073 1999 .029

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

50433 1960 to 2006 47 years Series 46

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

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1960 2006 0 .22 -.07 .17 .04 -.22 -.30 -.03 -.25 -.02 -.02 .26\* .10 .00 -.02 - - - - - - -

[B] Entire series, effect on correlation ( .263) is:

Lower 2006< -.064 1991> -.043 1966> -.043 1981< -.034 1977> -.023 2002> -.017 Higher 1980 .070 1995 .023

1960 to 2006 segment:

Lower 2006< -.064 1991> -.043 1966> -.043 1981< -.034 1977> -.023 2002> -.017 Higher 1980 .070 1995 .023

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

2006 -4.7 SD

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

90276 1960 to 2009 50 years Series 47

[B] Entire series, effect on correlation ( .817) is:

Lower 2008> -.031 1980< -.015 1988< -.013 1965< -.008 2007< -.008 1986< -.007 Higher 1999 .028 1966 .026

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151123 1961 to 2009 49 years Series 48

[B] Entire series, effect on correlation ( .474) is:

Lower 1999> -.063 1998> -.033 1993< -.026 1994< -.016 1965> -.014 1989> -.011 Higher 1980 .062 1964 .029

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1998 +3.0 SD; 1999 +3.1 SD

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171150 1961 to 2000 40 years Series 49

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

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

1961 2000 -8 .25 -.03 .39\*-.20 .02 -.32 .36 -.39 .03 -.01 .29|-.18 -.08 .20 -.24 -.01 -.16 -.08 -.24 .17 -

[B] Entire series, effect on correlation ( .290) is:

Lower 1980< -.054 1991> -.036 1972< -.034 1963< -.026 1981< -.024 2000< -.021 Higher 1999 .196 1969 .023

1961 to 2000 segment:

Lower 1980< -.054 1991> -.036 1972< -.034 1963< -.026 1981< -.024 2000< -.021 Higher 1999 .196 1969 .023

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

40889 1962 to 2009 48 years Series 50

[B] Entire series, effect on correlation ( .593) is:

Lower 1962< -.041 1994< -.024 2009< -.023 1965> -.022 1970> -.017 1964> -.017 Higher 1991 .053 1966 .052

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60295 1962 to 2009 48 years Series 51

[B] Entire series, effect on correlation ( .342) is:

Lower 1983< -.066 1991> -.043 1981< -.034 1977> -.028 1975> -.017 1989> -.013 Higher 2000 .037 1982 .028

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60467 1962 to 2009 48 years Series 52

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

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1962 2009 0 -.01 -.20 -.02 -.32 -.07 .03 -.18 -.06 .02 .06 .25\* - - - - - - - - - -

[B] Entire series, effect on correlation ( .248) is:

Lower 1967< -.059 2007< -.024 1966> -.015 1975> -.014 1996< -.011 1991> -.011 Higher 1989 .044 2000 .022

1962 to 2009 segment:

Lower 1967< -.059 2007< -.024 1966> -.015 1975> -.014 1996< -.011 1991> -.011 Higher 1989 .044 2000 .022

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

40480 1963 to 2009 47 years Series 53

[B] Entire series, effect on correlation ( .692) is:

Lower 1967< -.020 1989> -.019 2006< -.016 1999> -.015 2009< -.013 1968< -.012 Higher 1991 .054 1980 .034

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151140 1963 to 2009 47 years Series 54

[B] Entire series, effect on correlation ( .517) is:

Lower 1990< -.046 2002< -.024 2004> -.022 1966> -.017 1998> -.017 1973< -.016 Higher 1980 .041 1969 .026

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

182695 1963 to 2009 47 years Series 55

[B] Entire series, effect on correlation ( .416) is:

Lower 1994< -.195 1989> -.021 1999> -.018 1995> -.016 2007< -.014 1990< -.011 Higher 2000 .045 1991 .033

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

10743 1964 to 2009 46 years Series 56

[B] Entire series, effect on correlation ( .578) is:

Lower 1999> -.065 1990< -.036 2003< -.033 2005< -.022 2004> -.017 1995> -.017 Higher 1966 .066 1980 .048

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

40536 1964 to 2009 46 years Series 57

[B] Entire series, effect on correlation ( .461) is:

Lower 1964> -.055 2006< -.048 1990< -.023 2007< -.021 1982< -.018 1991> -.016 Higher 1980 .075 1966 .059

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

50299 1964 to 2009 46 years Series 58

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

Lower 2004< -.139 1964> -.039 1969< -.025 1998> -.010 1984< -.009 1979> -.008 Higher 1980 .065 2000 .029

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

2004 -5.6 SD

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

60339 1964 to 2009 46 years Series 59

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

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1964 2009 0 .15 .06 -.20 -.01 -.08 -.09 .15 .10 -.22 -.15 .32\* - - - - - - - - - -

[B] Entire series, effect on correlation ( .320) is:

Lower 1969< -.143 1966> -.048 1964> -.036 2008< -.021 1999> -.020 1991> -.007 Higher 1980 .077 2000 .035

1964 to 2009 segment:

Lower 1969< -.143 1966> -.048 1964> -.036 2008< -.021 1999> -.020 1991> -.007 Higher 1980 .077 2000 .035

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

110795 1966 to 2009 44 years Series 60

[B] Entire series, effect on correlation ( .671) is:

Lower 1985< -.035 1993< -.029 1977> -.021 1974> -.019 2007< -.017 2002> -.017 Higher 1966 .061 1980 .026

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20693 1967 to 2009 43 years Series 61

[B] Entire series, effect on correlation ( .427) is:

Lower 1977> -.078 1990< -.040 2004> -.033 1967< -.027 2000< -.025 1969< -.014 Higher 1999 .064 1995 .039

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

1977 +4.1 SD

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

50652 1967 to 2009 43 years Series 62

[B] Entire series, effect on correlation ( .452) is:

Lower 1994< -.028 1970< -.026 1974> -.023 1975> -.023 1996< -.014 1993< -.013 Higher 1982 .031 1995 .021

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20847 1968 to 2009 42 years Series 63

[B] Entire series, effect on correlation ( .414) is:

Lower 2004> -.044 1968< -.029 1999> -.027 1991> -.021 2007< -.018 1996< -.015 Higher 1980 .070 1969 .026

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

30483 1968 to 2009 42 years Series 64

[B] Entire series, effect on correlation ( .570) is:

Lower 1979> -.056 1975> -.053 2005> -.031 1971< -.026 1978> -.012 1981< -.009 Higher 1999 .091 1991 .065

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1979 +3.0 SD; 2005 +3.1 SD

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40479 1969 to 2009 41 years Series 65

[B] Entire series, effect on correlation ( .412) is:

Lower 2007< -.060 1995> -.042 1989> -.031 1984< -.027 1974> -.026 1997< -.014 Higher 1980 .045 2000 .043

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171306 1969 to 2009 41 years Series 66

[B] Entire series, effect on correlation ( .351) is:

Lower 1996< -.070 1969< -.059 1999> -.047 2007< -.045 1989> -.036 1993< -.019 Higher 1991 .175 1995 .036

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190635 1969 to 2009 41 years Series 67

[B] Entire series, effect on correlation ( .460) is:

Lower 1982< -.039 1984< -.034 1995> -.029 1979> -.021 1977> -.020 2009< -.020 Higher 1991 .054 1980 .049

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

152661 1970 to 2009 40 years Series 68

[B] Entire series, effect on correlation ( .541) is:

Lower 2003< -.039 1999> -.036 1970< -.030 1979> -.028 1983< -.028 1981< -.025 Higher 1991 .111 1980 .043

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20820 1971 to 2009 39 years Series 69

[B] Entire series, effect on correlation ( .611) is:

Lower 2008> -.039 2000< -.024 2002> -.023 1991> -.017 2009< -.016 1989> -.014 Higher 1999 .106 1980 .054

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

60145 1971 to 2009 39 years Series 70

[B] Entire series, effect on correlation ( .389) is:

Lower 1982< -.139 2003< -.031 1983> -.026 2000< -.021 2008> -.019 2006> -.016 Higher 1999 .143 1995 .042

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

1982 1983 4.2 SD

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

1983 +3.1 SD

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

100956 1971 to 2007 37 years Series 71

[B] Entire series, effect on correlation ( .566) is:

Lower 2004< -.071 1977> -.051 1999> -.024 1971< -.015 1984< -.014 1986< -.014 Higher 1980 .053 2000 .041

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40485 1973 to 2009 37 years Series 72

[B] Entire series, effect on correlation ( .559) is:

Lower 2004< -.058 1995> -.051 2003< -.025 2002> -.019 2005> -.017 2006> -.009 Higher 1980 .032 2000 .030

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10664 1974 to 2009 36 years Series 73

[B] Entire series, effect on correlation ( .705) is:

Lower 1989> -.042 1995> -.033 1975> -.019 1976< -.016 2001< -.013 2003< -.011 Higher 1991 .076 1999 .054

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

160760 1974 to 2008 35 years Series 74

[B] Entire series, effect on correlation ( .457) is:

Lower 1997< -.055 1974> -.040 1991> -.035 2002> -.022 1992< -.018 1998> -.012 Higher 1999 .084 1980 .030

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

12032 1975 to 2005 31 years Series 75

[B] Entire series, effect on correlation ( .353) is:

Lower 1999> -.146 1975> -.035 1988> -.015 2003< -.012 1985< -.012 1977> -.012 Higher 1991 .047 1989 .046

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

1999 +3.6 SD

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

101150 1975 to 2009 35 years Series 76

[B] Entire series, effect on correlation ( .456) is:

Lower 2006< -.162 1993< -.033 1995> -.018 2004> -.017 2009< -.012 1987> -.010 Higher 1991 .052 1980 .048

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

20627 1977 to 2009 33 years Series 77

[B] Entire series, effect on correlation ( .534) is:

Lower 2002< -.054 1977> -.044 1991> -.040 1995> -.027 2004> -.014 2005> -.008 Higher 1999 .072 1989 .026

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70180 1977 to 2007 31 years Series 78

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

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1977 2007 0 .08 .17 .17 -.28 .05 -.13 .14 -.28 -.08 .02 .30\*-.08 .06 - - - - - - - -

[B] Entire series, effect on correlation ( .300) is:

Lower 2000< -.151 1995> -.057 1983< -.023 2006> -.021 1996< -.015 1997< -.011 Higher 1980 .103 1999 .062

1977 to 2007 segment:

Lower 2000< -.151 1995> -.057 1983< -.023 2006> -.021 1996< -.015 1997< -.011 Higher 1980 .103 1999 .062

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

30534 1979 to 2008 30 years Series 79

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

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

1979 2008 0 -.01 -.09 .05 .17 -.14 -.21 -.14 .09 -.17 .02 .19\*-.08 - - - - - - - - -

[B] Entire series, effect on correlation ( .190) is:

Lower 1999> -.086 1989> -.052 1979> -.049 1995> -.047 2004> -.029 1980< -.025 Higher 1991 .400 1993 .019

1979 to 2008 segment:

Lower 1999> -.086 1989> -.052 1979> -.049 1995> -.047 2004> -.029 1980< -.025 Higher 1991 .400 1993 .019

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

40585 1979 to 2009 31 years Series 80

[B] Entire series, effect on correlation ( .691) is:

Lower 2005> -.032 2002< -.028 2000< -.023 2006> -.022 1989> -.021 1996< -.012 Higher 1999 .093 1980 .029

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10194 1983 to 2009 27 years Series 81

[B] Entire series, effect on correlation ( .350) is:

Lower 2009< -.215 1997< -.050 1986< -.029 1987> -.025 2004> -.022 1995> -.020 Higher 1999 .133 1991 .129

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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 30421r 1887 2004 118 4 1 .287 1.11 2.88 .522 .658 .295 2.74 .464 -.023 1

2 30233 1902 2008 107 4 0 .329 1.66 3.86 .852 .769 .266 2.67 .404 .014 1

3 40873 1920 2009 90 4 0 .605 1.61 3.52 .800 .827 .237 2.70 .469 -.021 1

4 90616 1921 2006 86 4 0 .504 1.16 2.80 .428 .423 .286 2.79 .478 .016 1

5 40554 1928 2009 82 3 0 .398 2.38 3.56 .604 .401 .241 2.46 .434 -.023 1

6 30333 1930 2009 80 3 0 .510 1.35 3.71 .659 .559 .332 2.92 .544 -.073 1

7 40563 1932 2009 78 3 0 .380 1.88 4.45 .687 .615 .243 2.86 .608 .010 2

8 90658 1933 2009 77 3 2 .254 1.65 3.40 .765 .723 .246 2.66 .506 .113 1

9 10730 1936 2002 67 3 0 .627 1.03 1.98 .370 .502 .299 2.66 .583 -.034 1

10 60111 1940 2009 70 3 1 .327 1.89 3.49 .658 .746 .185 2.53 .445 -.066 1

11 111208 1940 2009 70 3 1 .301 1.39 4.17 .735 .753 .271 2.66 .475 -.091 2

12 10647 1942 2009 68 3 1 .197 1.07 2.88 .632 .755 .331 2.71 .409 -.081 1

13 50340 1944 2009 66 3 0 .371 1.03 2.62 .506 .709 .284 2.87 .694 -.029 1

14 101100 1944 2007 64 3 0 .539 1.10 2.67 .569 .832 .220 2.72 .516 .046 1

15 90278 1946 2005 60 3 0 .587 1.31 3.20 .681 .737 .258 2.74 .532 -.002 1

16 60486 1948 2008 61 3 0 .594 1.56 4.59 .888 .753 .308 2.74 .591 -.029 3

17 90062 1948 2009 62 3 0 .577 1.63 3.70 .661 .710 .224 2.74 .440 -.026 2

18 30214 1950 2009 60 2 0 .421 .87 2.27 .401 .590 .293 2.68 .543 .066 3

19 90567 1950 2008 59 2 0 .504 1.25 2.81 .554 .709 .286 2.69 .561 -.042 1

20 111171 1950 2009 60 2 0 .376 .54 1.98 .393 .601 .344 3.34 .562 -.097 1

21 40549 1951 2009 59 2 0 .502 1.32 2.52 .485 .567 .255 2.69 .500 -.074 1

22 70182 1951 2009 59 2 0 .413 1.28 2.30 .465 .542 .271 2.80 .489 -.013 1

23 102157 1951 2009 59 2 0 .496 1.92 2.85 .509 .615 .187 2.41 .512 -.057 1

24 60129 1952 2009 58 2 0 .359 1.12 2.36 .463 .730 .283 2.68 .618 -.119 1

25 132532 1952 2007 56 2 0 .416 .87 1.76 .387 .658 .285 2.90 .568 -.032 1

26 40493 1953 2009 57 2 0 .552 1.15 2.70 .557 .699 .305 2.65 .546 -.112 2

27 92562 1953 2009 57 2 1 .324 1.31 2.31 .500 .671 .245 2.53 .445 -.133 1

28 30472 1954 2001 48 1 1 .321 1.00 1.90 .359 .458 .301 2.77 .430 .096 1

29 50563 1954 2009 56 2 2 .188 1.81 8.13 1.413 .600 .378 3.25 .649 .023 1

30 60086 1954 2009 56 2 0 .422 1.20 2.86 .513 .729 .241 2.63 .481 -.104 1

31 60426 1954 2009 56 2 0 .639 2.33 4.88 1.033 .712 .257 2.80 .613 .026 1

32 90121 1954 2009 56 2 0 .471 2.17 5.66 .742 .148 .269 2.55 .476 .047 1

33 110797 1954 2009 56 2 0 .368 1.78 2.82 .525 .680 .184 2.59 .484 -.051 1

34 150941 1954 2009 56 2 0 .584 .89 2.28 .465 .801 .273 2.52 .445 -.088 2

35 50557 1955 2009 55 2 0 .344 2.13 6.82 .892 .375 .226 2.99 .498 .100 1

36 50559 1955 2009 55 2 0 .545 1.76 3.37 .847 .710 .235 2.90 .569 -.003 1

37 152529 1955 2009 55 2 0 .522 2.77 5.23 1.015 .532 .265 2.55 .543 .049 2

38 52010 1956 2009 54 2 0 .514 1.33 4.32 .882 .881 .259 2.75 .481 -.016 1

39 50301 1958 2007 50 1 0 .627 .96 2.26 .410 .649 .303 2.76 .573 -.030 1

40 50330 1958 2009 52 2 0 .707 1.23 2.20 .553 .834 .209 2.68 .488 -.054 1

41 70018 1958 2009 52 2 0 .605 2.18 5.02 1.067 .784 .231 2.82 .571 -.048 1

42 10619 1959 2009 51 2 0 .401 1.65 4.10 .949 .829 .217 2.93 .555 .112 1

43 52130 1959 2009 51 2 0 .601 1.56 3.43 .700 .692 .291 2.61 .553 -.056 1

44 150911 1959 2009 51 2 0 .493 1.76 3.05 .501 .522 .206 2.89 .681 -.017 1

45 10675 1960 2009 50 1 0 .618 1.71 3.55 .649 .738 .246 2.55 .454 -.043 1

46 50433 1960 2006 47 1 1 .263 1.08 2.03 .444 .674 .283 2.61 .438 .021 1

47 90276 1960 2009 50 1 0 .817 2.50 5.24 .899 .707 .210 2.81 .591 -.014 2

48 151123 1961 2009 49 1 0 .474 1.50 3.28 .550 .598 .203 3.16 .677 -.116 1

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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 ()

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

49 171150 1961 2000 40 1 1 .290 1.26 3.26 .660 .644 .282 2.59 .469 -.074 1

50 40889 1962 2009 48 1 0 .593 1.04 2.39 .434 .667 .235 2.94 .639 -.115 1

51 60295 1962 2009 48 1 0 .342 1.06 2.73 .813 .905 .277 2.69 .514 -.050 1

52 60467 1962 2009 48 1 1 .248 1.75 3.63 .670 .670 .240 2.55 .432 -.002 1

53 40480 1963 2009 47 1 0 .692 1.66 3.41 .779 .824 .201 2.80 .486 -.061 1

54 151140 1963 2009 47 1 0 .517 1.60 3.10 .773 .725 .292 3.09 .696 -.111 1

55 182695 1963 2009 47 1 0 .416 1.65 3.55 .587 .471 .246 2.78 .476 -.013 2

56 10743 1964 2009 46 1 0 .578 .89 1.98 .309 .525 .225 3.05 .663 .076 1

57 40536 1964 2009 46 1 0 .461 1.28 2.46 .521 .739 .252 3.15 .588 .088 1

58 50299 1964 2009 46 1 0 .448 1.42 2.83 .580 .612 .272 2.66 .382 -.045 1

59 60339 1964 2009 46 1 1 .320 1.55 3.08 .790 .806 .248 2.92 .572 -.015 1

60 110795 1966 2009 44 1 0 .671 1.27 2.19 .403 .451 .249 2.95 .559 .005 1

61 20693 1967 2009 43 1 0 .427 2.22 4.68 .985 .528 .298 3.10 .672 -.005 1

62 50652 1967 2009 43 1 0 .452 1.81 3.79 .586 .510 .245 2.87 .586 .025 1

63 20847 1968 2009 42 1 0 .414 .90 1.79 .298 .390 .251 2.95 .583 .106 1

64 30483 1968 2009 42 1 0 .570 1.75 3.46 .564 .415 .273 2.85 .635 -.079 1

65 40479 1969 2009 41 1 0 .412 1.62 3.54 .650 .679 .254 2.90 .718 -.075 1

66 171306 1969 2009 41 1 0 .351 2.25 3.05 .453 .445 .177 2.45 .545 -.064 2

67 190635 1969 2009 41 1 0 .460 1.69 3.54 .607 .382 .304 2.90 .642 .128 1

68 152661 1970 2009 40 1 0 .541 1.10 2.45 .450 .526 .237 2.83 .604 -.010 1

69 20820 1971 2009 39 1 0 .611 2.19 4.75 .709 .600 .197 2.76 .470 -.002 1

70 60145 1971 2009 39 1 0 .389 1.88 4.93 .694 .050 .284 2.95 .616 -.010 1

71 100956 1971 2007 37 1 0 .566 1.48 2.84 .481 .449 .249 2.78 .511 -.076 1

72 40485 1973 2009 37 1 0 .559 1.55 2.62 .538 .519 .280 2.56 .533 -.013 1

73 10664 1974 2009 36 1 0 .705 1.47 3.23 .673 .652 .309 2.75 .522 .119 1

74 160760 1974 2008 35 1 0 .457 1.97 3.82 .706 .612 .258 2.66 .527 -.107 2

75 12032 1975 2005 31 1 0 .353 2.34 3.95 .864 .748 .197 2.56 .593 -.016 1

76 101150 1975 2009 35 1 0 .456 1.43 2.47 .448 .514 .257 2.47 .459 -.052 1

77 20627 1977 2009 33 1 0 .534 2.78 4.77 .938 .039 .346 2.59 .627 -.130 1

78 70180 1977 2007 31 1 1 .300 1.19 2.42 .541 .476 .310 3.02 .792 -.023 1

79 30534 1979 2008 30 1 1 .190 1.45 3.07 1.064 .821 .391 2.37 .478 -.058 1

80 40585 1979 2009 31 1 0 .691 1.92 4.12 .950 .659 .293 2.61 .547 .037 1

81 10194 1983 2009 27 1 0 .350 3.90 6.48 1.145 .308 .293 2.56 .641 -.100 1

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Total or mean: 4323 144 16 .460 1.53 8.13 .646 .628 .263 3.34 .534 -.022

- = [ COFECHA FAGR COF ] = -