Volume Title: Indicators of Business Expansions and Contractions

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Volume Publisher: NBER

Volume ISBN: 0-87014-444-8

Volume URL: http://www.nber.org/books/moor67-2

Publication Date: 1967

Chapter Title: Appendix A: Instructions for Assigning Scores to Indicators

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Chapter URL: http://www.nber.org/chapters/c1271

Chapter pages in book: (p. 89 - 93)

APPENDIX A
Instructions for Assigning Scores to Indicators

The rules listed below were used by the staff in making the entries on the scoresheets (cf. text Table 3).

Percentages, in parentheses, following economic significance, statistical adequacy, etc., are the weights assigned to the various measures in computing the final averages (VII).

Timing (IV), conformity (III), and smoothness (VI) scores are based on measures recorded on worksheet tables entitled: *Measures of Timing, Conformity, and Smoothness* (cf. text Table 4). Formulas for timing, dispersion, conformity, and extra turns are computed to one decimal but rounded to whole numbers on the scoresheets (0.5 is rounded to the nearest even number).

The scores cover the full period for which each series is available through 1965. For series that start before 1948, a second scoresheet was prepared, so that the scores for all series can be compared for a common recent period, 1948–65.

I. Economic Significance (20 Per Cent)

Broad coverage (economy wide; nonagricultural; manufacturing and trade; total corporate; commodity, consumption, or investment aggregates). 75

Narrow coverage (manufacturing and other industry groups or sectors at about this or narrower levels of aggregation). 50

See text (Chapter II, 3) for explanation.

II. Statistical Adequacy (20 Per Cent)

	Score	*Maximum Score*
1. Reporting system		20
a. For statistical purposes	20	
b. Byproduct of administrative program	10	
c. Indirect sources	0	
2. Coverage of process (statistical)		20
a. Full universe (90–100 per cent)	20	
b. Probability sample	15	
c. Other sample (50–90 per cent)	10	
d. Other sample (less than 50 per cent or unspecified)	5	
3. Coverage of time period (full month or quarter)		10
4. Measure of magnitude of revisions		5
5. Measure of error		10
a. Total	10	
b. Sampling	5	
6. Full description of method		5
7. Duration of series		20
a. 50 years or more	20	
b. Each 5 years	2	

	Score	Maximum Score
8. Comparability over time		10
a. No break	6	
b. One break	3	
c. Two breaks	0	
d. Uninterrupted current segment of at least 15 years	4	
9. Total score		100

III. Conformity (20 Per Cent)

	Maximum Score
1. Conformity probability	60

$$\text{Score} = 300\ (.200 - P_C)$$

where P_C is the probability assigned to the weighted conformity indexes for expansions and contractions combined.

2. Extra turns — 20

$$\text{Score} = 80\left(0.25 - \frac{E}{T}\right)$$

where E is the number of extra specific cycle turns and T the total number of business cycle turns covered by the whole series. If $\frac{E}{T}$ is greater than 0.25, the score is zero.

3. Lapses since 1948 — 10

Series analyzed on a positive (inverted) basis are considered to have no lapses if they always rise (decline) during business cycle expansions and decline (rise) during business cycle contractions. No change in a series during a business cycle phase is counted as one-half expanding and one-half contracting.

Series covering the period 1948–65 should have 3 expansions and 4 contractions. Shorter series may show fewer expansions and contractions. They are scored by applying a modification of the formula used for "conformity probability"

$$\text{Score} = 52\ (.200 - P_{CL})$$

where P_{CL} is the probability for the number of conforming movements.

4. Amplitude — 10

Amplitude is based on the weighted average per month rise and fall during specific cycles.[1]

[1] The average per month rise and fall of all specific cycles available for a series is used in scoring amplitude. The per month rather than the total amplitudes are used because series cover different periods. Thus a series which covers the 1929–33 contraction is almost certain to have a larger average cyclical amplitude than one which does not, but it is not certain to have a larger per month amplitude. This measure is considered preferable to $\overline{C}$ (the Census seasonal

Maximum Score

Scoring is as follows for series analyzed on a relative basis:

Amplitude	*Score*
4.0 or more	10
3.0 to 3.99	8
2.0 to 2.99	6
1.0 to 1.99	4
0.5 to 0.99	2
Less than 0.5	0

Series analyzed on an absolute deviation basis automatically score 8.

5. Total score 100

IV. Timing (20 Per Cent)

1. At business cycle peaks
   a. Probability 60

$$\text{Score} = 240\ (0.250 - P)$$

where P represents the accepted probability based on peak timing. If P is larger than 0.250, the score will be zero.

Any timing class (lead, lag, roughly coincident) that yields an accepted probability is to be identified. However, when the median lead or lag is -1, 0, or $+1$ month, the timing class is C provided the probability attaching to the number of rough coincidences is "accepted." Otherwise, it is U. When the median lead (or lag) is -2 (or $+2$) months or more, the timing class is L (or Lg) provided the probability attaching to the number of leads (or lags) is "accepted." If the probability is rejected for leads (or lags) but accepted for rough coincidences, then the timing class is C. Otherwise, it is U. Scores for probability and lapses, for the timing classification rejected under the foregoing rules, are to be recorded in a footnote.

   b. Dispersion 20

Score = 2 (10 — σ of the leads and lags at peaks)
If σ is 10 or more the score is 0

   c. Lapses since 1948 20

Series covering the full period 1948–65 should have 4 comparisons at peaks and 4 comparisons at troughs. Shorter series may show fewer comparisons.

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adjustment Method II measure of the average month-to-month change, without regard to sign, in a smooth moving average of the cyclical component of the series) because the NBER measure excludes minor cycles and the long-term trend; furthermore, the NBER measure is more often available for the full period covered by the series. For 93 series for which both are available, the coefficient of rank correlation between these two measures of amplitude is 0.823.

Scoring is computed by applying a modification of the probability formula to the classification scored for "probability."

$$\text{Score} = 93\ (.250 - P_{CL})$$

d. Total score — 100

2. At business cycle troughs
   Computations correspond to those for peaks. — 100

3. At peaks and troughs
   Score is an arithmetic average of the scores for peaks and for troughs. Thus, the score is not necessarily representative of the classification shown for peaks and troughs combined in Table 6. — 100

V. Currency (10 Per Cent)

	Score	*Maximum Score*
Monthly Series		100
Promptness: Available by 20th of month following that covered by data	80	
Available by 20th of 2nd month following that covered by data	40	
Available later	0	
Daily, weekly, or ten-day figures in addition to monthly figure	20	
Quarterly Series		50
Available in month following quarter	50	
Available in second month following quarter	25	
Available later	0	

VI. Smoothness (10 Per Cent)

Monthly Series — 100

MCD	*Score*
1	100
2	80
3	60
4	40
5	20
6 or more	0

Quarterly Series — 100

$\bar{I}/\bar{C}$	*Score*
Less than .33	100
.33 – .66	80
.67 – .99	60
1.00 – 1.33	40
1.34 – 1.66	20
1.67 or more	0

VII. Summary—Average Score (100 Per Cent)

1. Peaks (troughs)

   Average to be computed by weighting the score for peak (trough) timing (IV) and the scores for the remaining measures (I, II, etc.) by the percentages indicated in the headings.

2. Peaks and troughs

   Same computation as above except that peak and trough timing score (IV-3) is to be used.

   The timing classification on which the score is based is to be identified together with the score.