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Cyclical Patterns in the Prewar Period, 1879-1914

Because differences in government policies, resulting largely from political and economic conditions, were responsible for tremendous changes in government finance during and after World War I, we shall examine the prewar period separately. We look first at surpluses and deficits, then at the total expenditures and total revenues that accounted for these balances, and finally at the main components of total revenues—in this period, customs revenues and miscellaneous internal revenues.

Surpluses and Deficits

To determine the extent to which surpluses and deficits followed the pattern of cyclical behavior in the economy as a whole, as evidenced by the National Bureau's reference cycles, indexes of conformity were computed for the ten reference cycles 1879-1914.[1] During this period, government surpluses and deficits conform well to the reference cycles. The indexes of conformity for expansion, contraction, and the whole cycle are +80, +60, and +58, respectively (Table 5), that is, during 9 of the 10 business expansions the surplus increased, or the deficit declined, or there was a shift from deficit to surplus; during 8 of the 10 business contractions the opposite changes took place.

The high degree of conformity is of course readily explained. Government revenues, sensitive to the volume of business activity, tended to rise during expansion phases of the cycle and to fall as business declined. Government expenditures, on the other hand, did not conform regularly to the business

[1] Reference cycles are the cycles in general business activity (see page 3). See Chapter 1 for a description of conformity indexes.

cycle.[2] Hence the difference between revenues and expenditures conformed, like the revenues, to the cycle.

TABLE 5

Federal Receipts and Expenditures, Conformity Indexes, 1879-1914 and 1921-1938

Series	Conformity Indexes					
	1879-1914 (10 cycles)			1921-1938 (4 cycles)		
	Expansion	Contraction	Full Cycles	Expansion	Contraction	Full Cycles
Surpluses and deficits	+80	+60	+58	0	+50	+71
Total expenditures	+30	−60	−5	0	0	+14
Receipts:						
Total	+80	+40	+79	+50	+50	+100
Customs	+80	+60	+68	+100	+100	+100
Miscellaneous internal	+60	−40	+58	0	+50	+14
Income tax				+50	+100	+71

SOURCE: Computed from data in Table A-5 by the method described in Chapter 1.

The exceptions were of small magnitude and can be readily explained. During the expansion phase of the 1900-1904 cycle (the mildest business expansion in the entire 1879-1958 period), a slight decline took place in the surplus-deficit series as a result of the elimination of special excise taxes imposed to finance the Spanish-American War. During the contraction phase of the 1894-1897 cycle, revenues rose when a flurry of imports occurred at the trough in anticipation of the higher rates imposed by the Dingley Tariff of July 1897. In the contraction phase of the 1897-1900 cycle, the surplus expanded when war expenditures suddenly ceased and revenues from special war taxes were still increasing. These three nonconforming expansion and contraction phases also account for the nonconforming full cycles.

There is a slight but inconclusive tendency for the surplus-deficit series to

[2] In the case of the severe and prolonged depression of 1929-1937, government expenditure did increase enormously as efforts at alleviation were made. The rapid increase began during the ensuing expansion phase. However, in the interwar period as a whole, expenditures declined about as often as they rose during business contractions and expansions.

lead at both peaks and troughs. The series shows a lead (in cycle stages) at 4 cyclical peaks, coincident timing at 1, and a lag at 2. At the troughs, there are 4 leads and 3 lags. Surpluses tend to predominate at cyclical peaks, whereas deficits occur more frequently at troughs. Surpluses are shown at 7 of the 10 cyclical peaks but in only 4 of the troughs.

In a stage-to-stage comparison (Table 6) conformity to the cycle is again noticeable. In the majority of cycles, stage-to-stage changes in government

TABLE 6

Federal Surpluses and Deficits, Stage-to-Stage Changes, Ten Cycles, 1879-1914

Direction of Change [a]	Number of Changes between Reference Cycle Stages							
	I-II	II-III	III-IV	IV-V	V-VI	VI-VII	VII-VIII	VIII-IX
		Expansion				Contraction		
	Trough to First Third	First to Middle Third	Middle to Last Third	Last Third to Peak	Peak to First Third	First to Middle Third	Middle to Last Third	Last Third to Trough
Rise	9	5	7	7	3	3	2	7
Fall	1	3	3	2	7	6	8	3
No change	0	2	0	1	0	1	0	0
Total	10	10	10	10	10	10	10	10

SOURCE: Table A-5, Section A1.

[a] A rise indicates a change towards a larger surplus or smaller deficit; a fall indicates the reverse.

balances conform to the general business cycle, except between the last two stages when the tendency to lead is apparent from the larger number of rises. The average pattern during the ten business cycles also demonstrates the tendency toward positive conformity (Chart 3).

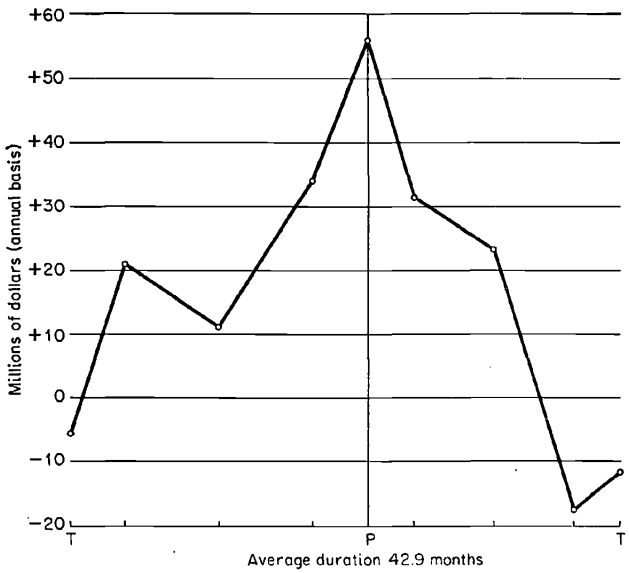
The evidence is clear, then, that between 1879 and 1914 there was a marked and consistent tendency for government surpluses to increase (or for deficits to decline) during the expansion phase of the cycle, and for government surpluses to decrease or disappear (or for deficits to develop or increase) during the contraction phase of the cycle. Thus, wholly apart from any conscious concept of modern fiscal policy, government balances reacted—in direction, if not in degree—in much the same way as current fiscal policy makers would plan them. Without any apparent, deliberate

effort on the part of the government, compensatory movements emerged; surpluses were accumulated in prosperity, and deficits were incurred in depression.

However, even cursory examination indicates that these variations were ordinarily too small to affect the course of the cycle. From 1879 to 1914, when the seasonally corrected figures moved from an average deficit of $5 million annually at the trough to an average surplus of $56 million at the peak, the average over-all change during business expansion amounted to

CHART 3

Federal Surpluses and Deficits, Average Reference Cycle Pattern, Ten Cycles, 1879-1914



Source: Table A-5, Section A2 (averages on annual basis). The technique of reference cycle analysis is described in Chapter 1 of this paper.

only $61 million. The largest rise in any one expansion during this period (in 1879-1885) was only $150 million on an annual basis. The average contraction showed a change from a surplus of $56 million to a deficit of $17 million, or a total decline of $73 million. The largest decline came to some $250 million. This compares with an average cyclical increase of $3 billion from trough to peak and a decrease of $900 million from peak to trough in GNP during the same period.[3] Thus, changes in the government's fiscal

[3] GNP figures are based on preliminary estimates prepared by Simon Kuznets.

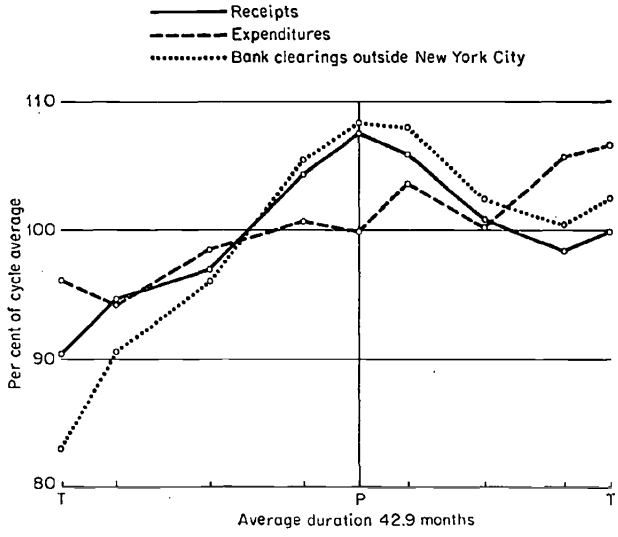
position amounted to only 2 per cent of the average change in GNP during expansion, and 8 per cent of the average change in GNP during contraction. It can hardly be expected that these relatively small changes in government balances could have exerted any effective influence on the course of the business cycle.

Expenditures

The cyclical pattern of government expenditures during this period cannot account for the cyclical behavior of the surplus, because the latter rose about as often during recovery as during recession. In 6 of the 10 expansion periods expenditures increased; in 3 they declined; and in 1 they did not change. In 8 of the 10 contractions expenditures rose, and in only 2 did they decline. Thus, government expenditures showed practically no conformity to the business cycle (Table 5). The inverse conformity to contractions is due principally to the upward trend in the series. The index for the full cycle is −5, indicating no consistent tendency for the full cycle to conform either positively or invertedly. The stage-to-stage comparisons reveal little else than the upward trend (Chart 4 and Table 7).

CHART 4

Federal Receipts, Expenditures, and Bank Clearings Outside New York City, Average Reference Cycle Patterns, Ten Cycles, 1879-1914



Source: Expenditures and receipts from Table A-5, Sections B and C, respectively; bank clearings outside New York City, from Table A-8, Section A.

TABLE 7

Federal Expenditures, Stage-to-Stage Changes, Ten Cycles, 1879-1914

Direction of Change	Number of Changes between Reference Cycle Stages							
	I-II	II-III	III-IV	IV-V	V-VI	VI-VII	VII-VIII	VIII-IX
	Expansion				Contraction			
	Trough to First Third	First to Middle Third	Middle to Last Third	Last Third to Peak	Peak to First Third	First to Middle Third	Middle to Last Third	Last Third to Trough
Rise	3	6	4	6	7	4	7	3
Fall	7	4	3	3	2	6	3	6
No change	0	0	3	1	1	0	0	1
Total	10	10	10	10	10	10	10	10

SOURCE: Table A-5, Section B.

Revenues

The explanation of the cyclical conformity of government surpluses and deficits during this period lies, therefore, in the behavior of revenues. Before taking up the cyclical analysis, however, a brief statement on the tax legislation in effect from 1879 to 1914 is in order.

During this period, changes in the tax base and in the objects of taxation were relatively moderate. In the 1880's, when the Treasury was embarrassed by accumulating surpluses, a revenue bill intended to cut customs receipts and internal revenue was enacted (March 3, 1883). The net effect on tariffs was almost nil.[4] Among the internal revenues, however, tobacco taxes were reduced, and the stamp taxes and the taxes on bank deposits and capital stock were abolished. Despite repeated recommendations from the Secretary of the Treasury in annual reports from 1886 through 1890 for reductions in taxation to eliminate the mounting surpluses, the Congress took no action until the passage of the McKinley Tariff Act of October 1, 1890. This bill, instead of reducing the revenues, raised tariff rates. The victory of Grover Cleveland and the Democrats at the polls in 1892 was considered a mandate to undo the Tariff of 1890. But Democratic senators from states vitally interested in the protection of particular products united with protectionist

[4] "Looking at the tariff system as a whole, it retained, substantially unchanged, the high level of duties reached during and after the Civil War." F. W. Taussig, *The Tariff History of the United States,* 7th ed., 1923, p. 250.

Republicans to prevent sizeable reductions in the tariff, and the Wilson-Gorman Tariff bill (enacted August 27, 1894) merely moderated the protective duties. The new law also provided for a 2 per cent tax on personal and corporate incomes, with a $4,000 exemption allowed to individuals;[5] but the Supreme Court, in April 1895, declared the tax unconstitutional on the grounds that the federal government could not levy a "direct" tax without apportioning it among the states.

The return of a Republican administration under McKinley, and an unbalanced budget inherited from the preceding administration, led to passage of the Dingley Tariff on July 24, 1897. This resulted in a generally upward revision of rates. Less than a year later, war was declared against Spain, and the War Finance Act of June 13, 1898 was passed. The tax on tobacco and fermented liquors was doubled; bankers, brokers, and places of amusement were subjected to special annual levies; stamp taxes were imposed on corporate securities and other legal instruments; and a graduated inheritance tax was levied. The increased revenues provided by this bill yielded surpluses in the postwar years. Accordingly, the revenue acts of March 2, 1901 and April 12, 1902 repealed all the provisions of the War Finance Act. On January 1, 1907, the tax on industrially used alcohol was abolished.

In 1909, the enactment of the Payne-Aldrich Tariff "brought no essential change in our tariff system."[6] However, the Act did include provision for a special excise tax on corporations. This was, in essence, a corporate income tax so worded as to avoid the constitutional grounds on which the 1894 tax had been ruled out; and it proved to be profitable. At the same time, the way was cleared for the eventual enactment of a federal income tax by an amendment to the Constitution. Before March 1913, 42 states, 6 more than necessary, ratified the Sixteenth Amendment giving Congress the power to levy taxes on income without apportionment among the states.

The Underwood Tariff of October 3, 1913, introduced and passed during the first year of Woodrow Wilson's administration, provided for downward revision of tariff rates and levied a tax on all personal gains, profits, and incomes derived from all sources except gifts and inheritance. The basic tax rate was set at 1 per cent, with a surtax schedule beginning at 1 per cent on income over $20,000 and rising to 6 per cent on income over $500,000, with an exemption of $3,000 for individuals and $4,000 for married couples.

In the course of the ten cycles from 1879 to 1914, government revenues conformed closely to the business cycle (Chart 4, above). Revenues rose sharply during expansion and declined more moderately during contraction,

[5] Bequests and inheritances were included in the income concept. For the fiscal year 1895, this tax yielded $77,000,000.

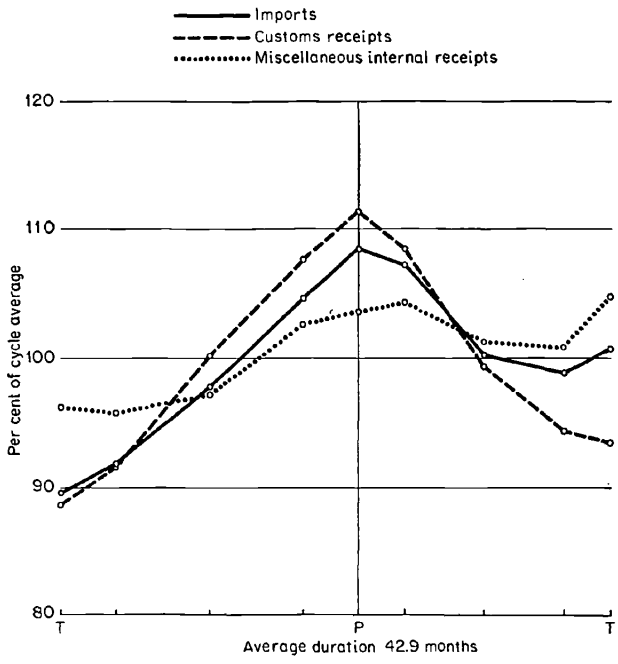
[6] Taussig, *op. cit.*, p. 407.

reflecting a long-term upward trend. The indexes of conformity were +80 in expansion, +40 in contraction, and +79 for the full cycle (Table 5). In only one expansion period, 1900-1902, did revenues fail to rise; the slight decline was due to the gradual elimination of the war taxes. In three instances, revenues rose during a contraction phase: in 1895-1897, when the passage of a new tariff law disturbed the normal course of revenues; in 1899-1900, when wartime taxes produced increased revenues; and in 1910-1912, when the new corporate income tax imposed in 1909 started to yield revenues.

The increase in government revenues from trough to peak during the average cycle amounted to $79 million whereas the average decline from peak to trough was only $37 million (annual rate). The total rise and fall of government revenues from trough to peak and back to trough during the average cycle amounted to $116 million, or about 26 per cent of the average revenue of $450 million. This compared with a similar total change

CHART 5

United States Imports and Selected Federal Receipts, Average Reference Cycle Patterns, Ten Cycles, 1879-1914



Source: Customs receipts and miscellaneous internal receipts from Table A-5, Sections D and E, respectively; imports from Table A-7.

in GNP of nearly $4 billion, or about 22 per cent of the average annual GNP of $18.5 billion. Since the GNP data are annual, their amplitude of movement is undoubtedly understated relative to that of the monthly revenue data. As Chart 5 shows, the cyclical movements in federal revenues were somewhat less than proportionate to those in monthly bank clearings outside New York City, a series whose movements are roughly proportionate to those in GNP (compare Chart 6).

It would seem, therefore, that the federal revenue system had a modest, yet quite consistent, stabilizing influence during this period. There was no decisive tendency for government revenues to lead or lag at the peaks of business cycles; they led 3 times, lagged 3 times, and coincided twice. However, there was a tendency to lead at troughs, with the upturn in government revenues preceding the upturn in business six times and lagging only twice. This, evidently, was due more to the behavior of miscellaneous internal revenues than to customs receipts. The steady upward trend in miscellaneous revenue contributed to this tendency (see below).

In the stage-to-stage comparison (Table 8), the consistency of the cyclical pattern is revealed by the dominance of rises in stages I through V and

TABLE 8

Federal Receipts, Stage-to-Stage Changes, Ten Cycles, 1879-1914

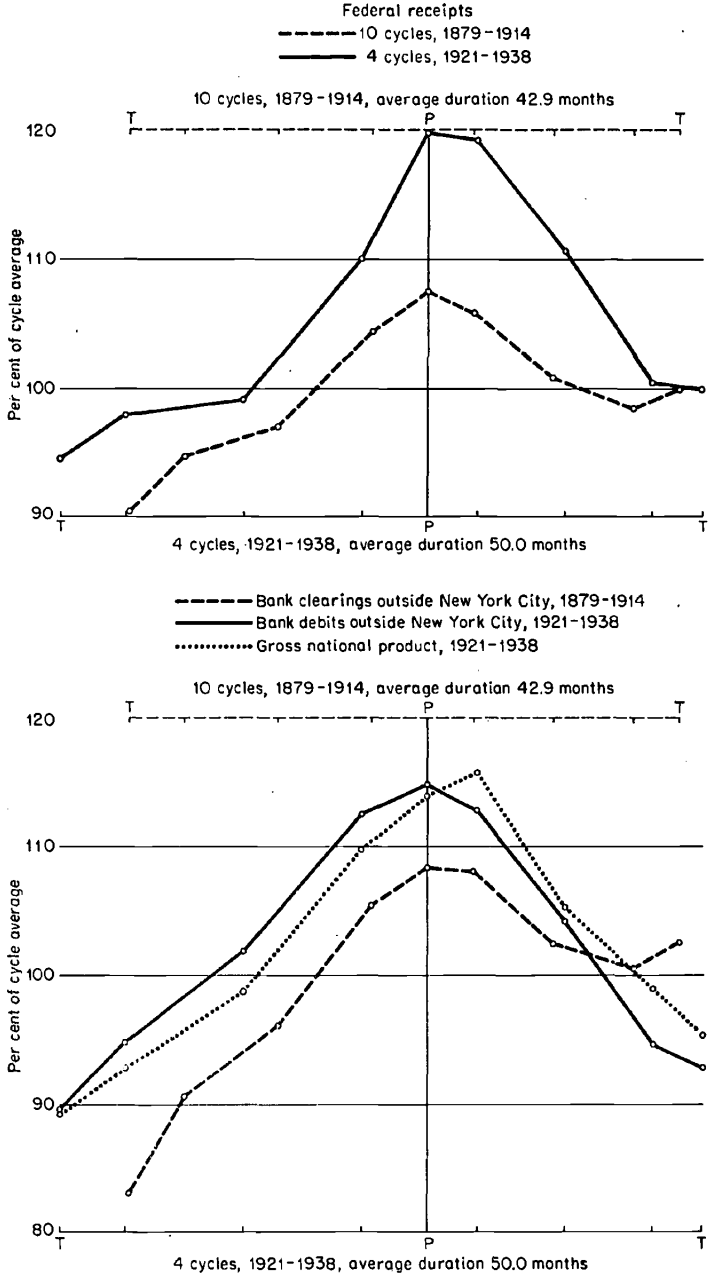
Direction of Change	Number of Changes between Reference Cycle Stages							
	I-II	II-III	III-IV	IV-V	V-VI	VI-VII	VII-VIII	VIII-IX
	Expansion				Contraction			
	Trough to First Third	First to Middle Third	Middle to Last Third	Last Third to Peak	Peak to First Third	First to Middle Third	Middle to Last Third	Last Third to Trough
Rise	9	7	10	10	3	3	3	5
Fall	1	3	0	0	7	5	7	4
No change	0	0	0	0	0	2	0	1
Total	10	10	10	10	10	10	10	10

SOURCE: Table A-5, Section C.

declines in stages V through VIII. Between stages VIII and IX, the tendency to lead is revealed by the larger number of rises. The relatively large number of rises during contractions reflects the upward trend of this series.

CHART 6

Federal Receipts, Bank Clearings or Debits Outside New York City, and Gross National Product, Average Reference Cycle Patterns, 1879-1914 and 1921-1938



Source: Federal receipts from Table A-5, Section C; bank clearings and debits outside New York City, Table A-8; gross national product, Table A-6.

Customs Revenues

During this period, the two chief components of federal revenue were customs receipts and miscellaneous internal revenues. From 1879 to 1898, customs receipts provided approximately two-thirds of total revenues. In 1898, under the impetus of financing the Spanish-American War, additional revenues were raised by higher excise rates and by taxing additional items. From 1898 to 1914, miscellaneous internal revenues provided 55 to 60 per cent of total revenues.

Customs revenues conformed quite closely to the business cycle (Chart 5). The indexes of conformity were +80 for expansion, +60 for contraction, and +68 for full cycles. In only one cycle, 1897-1899, was there a slight decline during an expansion period. In two cycles, there were expansions of customs revenues during contraction periods—in the contraction of 1895-1897 (disturbed by the Dingley Tariff Act) and in the mild contraction of 1899-1900, when there was a small increase in revenues. The cyclical variation of customs revenues was largely determined by the cyclical variation of imports.

There was no tendency for customs duties to lead or lag at cyclical peaks. Leads occurred in 3 cycles, lags in 3 cycles, and coincident timing in 2. At the trough, however, leads (6) were more prominent than lags (2). In the stage-to-stage comparison of the direction of movements, this same regularity, with the slightest suggestion of a tendency to lead at the trough, may be observed (Table 9).

TABLE 9

Customs Receipts, Stage-to-Stage Changes, Ten Cycles, 1879-1914

Direction of Change	Number of Changes between Reference Cycle Stages							
	I-II	II-III	III-IV	IV-V	V-VI	VI-VII	VII-VIII	VIII-IX
		Expansion				Contraction		
	Trough to First Third	First to Middle Third	Middle to Last Third	Last Third to Peak	Peak to First Third	First to Middle Third	Middle to Last Third	Last Third to Trough
Rise	9	8	10	8	3	2	1	4
Fall	1	2	0	2	7	8	8	6
No change	0	0	0	0	0	0	1	0
Total	10	10	10	10	10	10	10	10

SOURCE: Table A-5, Section D.

Miscellaneous Internal Revenues

From 1879 to 1914, miscellaneous internal revenues consisted largely of liquor and tobacco taxes. Other minor sources of revenue, such as stamp taxes, imposts on oleomargarine, etc., contributed less than 5 per cent to this group of revenues. If receipts during the Spanish-American War are eliminated from the calculation (to eliminate special excise taxes levied to pay for costs added by the war), internal revenues other than those derived from liquor and tobacco amount to only 2.2 per cent.

Miscellaneous revenues followed a steady upward trend, with less conformity to the cycle than was shown by customs revenues (Chart 5). The index of conformity for expansions is +60, for contractions −40, and for full cycles +58. In only two expansion periods did miscellaneous internal revenues fail to rise. The first occurred in the 1894-1895 expansion, when a buying rush to avoid the new, higher tax on whiskey resulted in a peak of revenues at the June 1894 business trough. The second occurred in 1900-1902, when the repeal by Congress of the special excise taxes to finance the Spanish-American War resulted in declining revenues.

In 7 of the 10 reference cycle contraction periods, there were increases in internal revenues. Most of these were small and reflected the general upward trend occasioned by the rising volume of liquor and tobacco consumption. However, marked increases in internal revenues occurred during three business contractions. In the recession of 1893-1894, a bulge in revenues was caused by the proposed increase in whiskey taxes, described above; in the contraction of 1899-1900, new levies to finance the war caused an increase;[7] and in the 1913-1914 decline, the emergency revenue act of October 1914 was used to produce additional revenues.

In the stage-to-stage comparison (Table 10), the upward trend is further revealed by the presence of 46 rises compared to only 29 declines. There is a tendency for miscellaneous internal revenues to lag at the peaks and lead at the troughs. The greater number of rises than declines between stages V and VI and between stages VIII and IX indicate this tendency and can largely be explained by the sharp upward trend of the series and the moderate cyclical amplitude. The peak that shows up at the terminal trough in the average pattern is due to the erratic increases produced by the change in the whiskey rate at the 1894 trough, and by the Spanish-American War excise taxes.

Since miscellaneous internal revenues tended to conform to business cycles

[7] The revenues from these war excises were first realized rather late in the war period and were maintained for several years after the war ended.

TABLE 10

Miscellaneous Internal Revenues, Stage-to-Stage Changes, Ten Cycles, 1879-1914

Direction of Change	Number of Changes between Reference Cycle Stages							
	I-II	II-III	III-IV	IV-V	V-VI	VI-VII	VII-VIII	VIII-IX
	Expansion				Contraction			
	Trough to First Third	First to Middle Third	Middle to Last Third	Last Third to Peak	Peak to First Third	First to Middle Third	Middle to Last Third	Last Third to Trough
Rise	6	6	8	7	5	3	4	7
Fall	2	4	2	3	4	6	6	2
No change	1	0	0	0	1	1	0	1
Total	9	10	10	10	10	10	10	10

SOURCE: Table A-5, Section E.

in a general way,[8] this behavior must be attributed to the cyclical pattern of consumption during prosperity and depression. Preliminary investigations of tobacco and liquor tax receipts seem to indicate that these two major components of miscellaneous internal revenues also tended to lag at the peaks and lead at the troughs, probably because of the upward trend in consumption of these products.

[8] It should be noted that a series with an upward trend conforms to the business cycle if the rise in contraction is uniformly slower than the rise in the preceding and following expansions (Chapter 1).