AMERICAN BUSINESS CYCLES, 1865-79

By RENDIGS FELS*

The American depression of the 1870's is famous in the minds of economists, being the longest cyclical contraction in American history; yet nowhere in print is there a satisfactory history of this depression and the events leading up to it. The *Review of Economic Statistics* published a lengthy factual account in 1920, but it is devoid of cyclical analysis and rendered out-of-date by recent statistical research.[1] Schumpeter has given his interpretation of the period but not a connected history.[2] Arthur Auble has dealt with the depression of the 1870's in his doctoral thesis, which was not published.[3] Mitchell's *Gold, Prices and Wages* is primarily a collection of statistics; he never completed the analysis for which the statistics were intended.[4] Save for isolated references and studies of particular problems, this completes the roster of noteworthy attempts to deal with this chapter of cyclical history.

I. *General Characteristics of the Period*

The period 1865-79 forms a natural unit for study. It roughly encompasses both a major business cycle and what Isard calls a transport-business cycle. Moreover, because it comprises the era, exclusive of the Civil War, in which the United States had an inconvertible paper currency, cyclical influences from international trade were different from those in the years before and after.

Gordon has defined major cycles as consisting of (1) upswings in which long-term investment opportunities are favorable so that down-

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[1] Warren M. Persons, Pierson M. Tuttle, and Edwin Frickey, "Business and Financial Conditions Following the Civil War in the United States," *Review of Economic Statistics, Supplement,* July, 1920.

[2] Joseph A. Schumpeter, *Business Cycles* (New York, 1939), Vol. I, pp. 335-40.

[3] Arthur G. Auble, *The Depressions of 1873 and 1882 in the United States* (Harvard University Library, 1949). Another dissertation, this one mimeoprinted, is Ernest R. McCartney, *Crisis of 1873* (Minneapolis, 1935).

[4] Wesley C. Mitchell, *Gold, Prices and Wages Under the Greenback Standard* (Berkeley, Calif.), 1908.

TABLE I.—PRODUCTION AND MONETARY STATISTICS FOR THE UNITED STATES, 1865–1879

(Calendar years except as otherwise noted)

	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879
Production Series															
1. Manufacturing	17	21	22	23	25	25	26	31	30	29	28	28	30	32	36
2. Transportation and Communication	16	16	17	18	20	21	23	25	27	28	27	27	27	28	32
3. Mining	4.0	4.7	4.8	5.1	5.3	5.5	6.7	7.5	8.7	8.4	8.4	8.3	9.8	10.1	11.5
4. Railroad Miles Built															
a. ICC	1,177	1,716	2,249	3,179	4,615	6,078	7,379	5,870	4,097	2,117	1,711	2,712	2,274	2,665	4,809
b. 10th Census	819	1,404	2,541	2,468	4,103	5,658	6,660	7,439	5,217	2,584	1,606	2,575	2,280	2,428	5,006
5. Building Construction	22	29	38	47	54	52	62	52	47	30	29	25	26	19	19
6. Crop Production		25.5	28.0	30.5	31.5	35.0	35.0	39.0	36.0	37.0	45.5	44.5	49.0	51.5	54.5
Monetary Series															
7. Wholesale Prices	132	116	105	98	94	87	83	85	84	81	78	72	68	62	59
8. Surplus of Federal Government ($000,000, fiscal years)	964	37	133	28	48	102	91	97	43	2	13	29	40	21	7
9. Liabilities of Business Failures ($000,000)	18	54	97	64	75	88	85	121	228	155	201	191	191	234	98
10. Gold Premium (per cent)	57.3	40.9	38.2	39.7	33.0	14.9	11.7	12.4	13.8	11.2	14.9	11.5	4.8	0.8	0.0
11. Net Capital Imports ($000,000, fiscal years)	75	70	74	76	122	130	100	112	145	51	20	−50	−100	−150	
12. Increase in RR Capital ($000,000)				697	172	436	188	495	625	437	436	−190	338	−34	100
13. Currency in Circulation ($000,000, June 30)	1,084	940	859	772	741	775	794	829	838	864	834	807	814	820	819

Sources:

1. *Manufacturing:* Edwin Frickey, *Production in the United States, 1860–1914* (Cambridge, Mass., 1947), p. 54. (1899=100)

2. *Transportation and Communication: Ibid.*, p. 117. (1899=100)

3. *Mining:* Warren M. Persons, *Forecasting Business Cycles* (New York, 1931), pp. 170–71. (1909–13=100)

4. *Railroad Miles Built:*

a. *ICC:* U. S. Bureau of the Census, *Historical Statistics of the United States, 1789–1945* (Washington, 1949), p. 200, first differences of Column 1. (The figures thus obtained are net of abandonments.) The Bureau of the Census took its figures from Interstate Commerce Commission, Statement No. 32151, *Railway Statistics Before 1890* (Washington, 1932) mimeographed. The ICC's source was the various annual issues of *Poor's Manual of Railroads* from 1869.

b. *10th Census: Tenth Census of the United States* (1883), Vol. IV, p. 290. It is not clear to what extent these figures are net of abandonments. In the source document, "Total Miles [in existence?] on December 31" for each year differs from the preceding year by the exact number (to the second decimal place) of miles built. This seems to imply that "Miles Built" are net of abandonments. However, the total miles in existence on June 30, 1880 are broken down, *ibid.*, p. 292, into 87,569 miles in operation and 232 miles on which operations had been suspended. The latter figure is so small that it is clear the difference between the figures of the ICC (which are net of abandonments; see above) and those of the *Tenth Census* must be ascribed not to a different treatment of abandonments but to a different source of data. The *Tenth Census* obtained its information from a questionnaire sent in 1880 to all railroads then in existence. Presumably the figures are more reliable for later than for earlier years.

5. *Building Construction:* Clarence D. Long, Jr., *Building Cycles and the Theory of Investment* (Princeton, 1940), p. 228. (1920–30=100) The index represents number of new buildings (both residential and non-residential). The number of cities entering into the index varies, so that the figures are not always strictly comparable. For 1865–72 the number of cities is 2; for 1873, 3; for 1874, 4; for 1875–77, 5; for 1878, 6; for 1879, 7.

6. *Crop Production:* C. M. Purves, "New Index of Crop Production in the United States," *The Agricultural Situation*, January 1, 1935, p. 4. (1910–14=100)

7. *Wholesale Prices:* U. S. Bureau of the Census, *Historical Statistics of the United States 1789–1945* (Washington, 1945), p. 234. (1926=100)

8. *Surplus of Federal Gov't: Ibid.*, pp. 296–97.

9. *Liabilities of Business Failures:* U. S. Bureau of Statistics, *Statistical Abstract of the United States, 1907* (Washington, 1908), p. 725.

10. *Gold Premium:* Wesley C. Mitchell, *Gold, Prices and Wages Under the Greenback Standard* (Berkeley, 1908), p. 4. Averages based on the opening, highest, lowest, and closing quotations on each business day.

11. *Net Capital Imports:* Frank D. Graham, "International Trade Under Depreciated Paper. The United States, 1862–79," *Quarterly Journal of Economics*, February, 1922, p. 231. Figures are in gold values. They include long term capital movements only and are "estimates computed from unofficial sources such as the Commercial and Financial Chronicle, Bankers' Magazine, London Economist."

12. *Increase in RR Capital: Historical Statistics of the United States, 1789–1945*, p. 201, first differences of column 19. Figures include elevated railways, which, however, were probably less than 1% of the total. "Capital" includes stock, mortgage bonds, equipment obligations, etc.

13. *Currency in Circulation: Ibid.*, p. 274.

ward spirals are minor and (2) downswings in which long-term investment opportunities have become seriously impaired so that cumulative expansions are weak and rare. In contrast, minor cycles are dominated by inventories, short-term credit conditions, short-run price-cost maladjustments, etc.[5] Let us make the hypothesis that long-term investment opportunities were favorable from 1865 to 1873 and that they became seriously impaired in the latter year and did not recover until about 1879. If the hypothesis is true, the period 1865-79 forms a major cycle.[6] This sounds reasonable inasmuch as business was generally prosperous from the end of the Civil War through the boom of the early 'seventies (except for two recessions), and was decidedly depressed from the panic of 1873 until 1879. To some extent, the hypothesis will be on trial throughout this article, but some evidence of a general nature is best discussed at once.

In 1865 the stage was set for one of the bursts of innovating activity such as Schumpeter described. During the latter half of the nineteenth century, railroad building was one of the most important forms of investment activity. Yet, on account of depression and strife, by the close of the Civil War it had been nearly a decade since any considerable railroad building had been done. Meanwhile, population was growing rapidly. The area west of the Mississippi, hitherto virtually untouched by the railroads, was ripe for development. A modern investor might have shuddered at the risks involved in building through the sparsely populated West, but in those days of rampant free enterprise, bonds could generally be sold at home or abroad provided the interest rate was high enough. In many cases, the government subsidized railroad building. In addition, the networks east of the Mississippi needed to be filled in. In such favorable conditions, a burst of innovating activity rose to a climax in the early 'seventies, then collapsed.

Conditions were also favorable for investment in housing. There is evidence of a housing shortage at the end of the Civil War,[7] and the

[5] Robert A. Gordon, "Cyclical Experience in the Interwar Period: The Investment Boom of the 'Twenties," unpublished paper presented to the Universities-National Bureau Conference on Business Cycle Research, November 25-27, 1949, pp. 3-10.

[6] This formulation differs only in detail from the findings of Hansen, Schumpeter, and Isard. Hansen dates major depressions 1864, 1873, and 1883 (presumably the years mentioned are the peaks of the preceding prosperities), which implies a major cycle, counting from trough to trough, from sometime after the Civil War, say 1867, until the end of the depression of the 'seventies, say 1878 or 1879. (Alvin H. Hansen, *Fiscal Policy and Business Cycles* [New York, 1941], pp. 23-24.) Schumpeter dated a "Juglar Cycle" from the beginning of 1870 to the middle of 1879 (*op. cit.*, p. 396). Isard found troughs in the seven series that interested him scattered in the early 1860's and again in the years 1875-79. (Walter Isard, "A Neglected Cycle: The Transport-Building Cycle," *Review of Economic Statistics,* November, 1942, pp. 149-158.)

[7] David A. Wells, *Report of the U. S. Special Commissioner of Revenue,* 41st Congress, 2nd Session, House Ex. Doc. No. 27, Dec., 1869, pp. xxiii-xxiv.

close of hostilities greatly accelerated immigration. Hence it is hardly surprising that the building cycle also rose to a peak in the early 'seventies.

We may conclude that the long-term outlook for investment was favorable in the fields of railroad and housing construction (and very likely in other kinds of construction too). But Terborgh has discounted the importance of single great industries, pointing out that steam railroads accounted for only one-eighth of total investment in the decade of the 1870's; and Burns and Mitchell reached negative conclusions on the effect of long building cycles on business cycles.[8] We must seek stronger support for our hypothesis.

Hansen has replied to Terborgh that the latter has neglected "the leverage effect of the multiplier and the acceleration principle."[9] The railroads in their expansion may have stimulated investment in the higher stages of production, *e.g.*, steel.

More important still, transportation costs were reduced not only by the building of the new roads but also by the consolidation of the old. The formation of such networks as the Pennsylvania, the New York Central, the Philadelphia and Reading, the Chicago, Burlington and Quincy, the Chicago and Northwestern, and the Milwaukee and St. Paul reduced the inconveniences of frequent tieups and delays, the cost of numerous interchanges of freight in long hauls, the diversity of railroad practices, and irresponsibility of carriers.[10] Such reductions in transportation costs both in the new territories opened up in the West and in the areas already served by railroads in the East presumably stimulated investments not related to railroads. This was particularly the case for housing, for the railroads may be regarded as instrumental in sucking a great wave of immigrants into the country (immigration rose from 180,000 in 1865 to 460,000 in 1873)[11] and relocating the existing population. But it is difficult to believe that it was not also true for manufacturing, which now found new advantageous sites and the opportunity of producing for wider markets.[12] We may tentatively conclude that the long-term investment outlook was generally favorable in the latter 'sixties.

[8] George Terborgh, *The Bogey of Economic Maturity* (Chicago, 1945), p. 84; Arthur F. Burns and Wesley C. Mitchell, *Measuring Business Cycles* (New York, 1946), pp. 418-27.

[9] Alvin H. Hansen, *Economic Policy and Full Employment* (New York, 1947), p. 303

[10] Walter Isard, *The Economic Dynamics of Transport Technology,* unpublished doctoral dissertation (Harvard University Library, 1943), pp. 61-63.

[11] Harry Jerome, *Migration and Business Cycles* (New York, 1926), p. 35.

[12] Isard, *Dynamics,* pp. 65-67. See also pp. 22-27. This kind of argument is part of Schumpeter's theory of the cycle.

The effect of international trade on business cycles in this period is not clear. The inconvertible paper standard in effect allowed exchange rates to fluctuate freely. The Civil War had partly been financed by printing several hundred million dollars worth of paper money popularly called greenbacks. This forced the government to abandon the gold standard since it could not maintain convertibility between gold and dollars. Nevertheless, it continued to require that import duties be paid in gold, and such gold as the banks held could continue to be counted as part of their reserves. Moreover, the Pacific Coast never abandoned the gold standard. About $25 millions of gold remained in active circulation there. Officially, the exchange rate between the dollar and foreign gold currencies such as the English pound sterling remained unchanged, but as gold could be bought for greenbacks only at premium which varied from one transaction to the next, the exchange rate in reality fluctuated freely.

An increased demand for the exports of a gold standard country—say because harvests are poor abroad—tends to increase prices and incomes both because prices and incomes in the export trades go up, with multiplier effects, and because gold imports are increased (or exports decreased), thus increasing the money supply and bank reserves.[13] Eventually, increased incomes and prices mean more imports and less exports, thus bringing trade back into balance; but in the meantime, an expansive impulse has been imparted which will accelerate a concomitant cyclical expansion or retard a cyclical contraction.

Under freely fluctuating exchanges, however, an increased demand for exports merely increases the exchange rate or, in this case, lowers the gold premium. There is no significant way in which the domestic money supply or aggregate income can be affected. Except for capital transactions, the business cycles of the domestic economy are largely isolated from international trade. This conclusion must be qualified, however, because the United States retained the use of gold for some purposes during the greenback era, particularly for international trade. To the extent that Americans were willing to absorb gold, increased exports could be expansionary; and to the extent that they were willing to give up gold, increased imports could be deflationary. However, annual fluctuations in the U. S. gold stock were small.[14] It seems

[13] The gold flow part of the gold standard mechanism is now out of favor. See Lloyd A. Metzler, "The Theory of International Trade," in Howard S. Ellis, ed., *A Survey of Contemporary Economics* (Philadelphia, 1948), pp. 216 and 220. I shall not here repeat my defense of gold flows, which has been published as a note, "Gold and International Equilibrium," in the *American Economic Review*, December, 1949, pp. 1281-83.

[14] U. S. Bureau of the Census, *Statistical Abstract of the United States, 1922* (Washington, 1923), p. 512. As the figures do not include bullion outside the vaults of the Treasury, they do not necessarily tell the whole story.

safe to conclude that the paper currency greatly blunted the effect of international trade in goods and services on business cycles.

Capital transactions are a different matter.[15] With freely fluctuating exchanges, capital imports are deflationary. The supply of goods in the domestic economy is increased, either because the capital imports are spent abroad or because they lower the gold premium, thus increasing imports of goods and services and decreasing exports. At the same time, the supply of money is unchanged. Therefore, there is downward pressure on prices. In a similar manner, it can be shown that capital exports are inflationary.

No figures are available on short-term capital movements. Between 1865 and 1873, the United States imported long-term capital. With the onset of depression, capital imports ceased and repayments began. It seems, however, that the deflationary effects in the first period were largely postponed, because the capital imports were used mainly to finance railroad building. As the capital market in the United States was still in an embryonic stage, it is reasonable to assume that without capital imports railroad construction would have been cut down by a corresponding amount, so that the imported capital for the time being increased demand as well as supply. In the longer run, the railroads could have been financed out of domestic funds. By using up investment opportunities so fast, the capital movement accentuated the depression of the 'seventies. By then, however, repayments had become substantial. Accordingly, no large net cyclical influence need be ascribed to long-term international capital transactions.

Largely cut off from foreign influences, wholesale prices fell every year except one between 1865 and 1879, the total decline amounting to 55% (or to get away from the precipitate decline immediately after the Civil War, they fell 45% from 1867 to 1879). For agricultural products, the chief reason is not far to seek. Under the influence of a population increase of 32%, the opening up of new areas by the railroads, release of a million soldiers from the Civil War, reconstruction of the South, and a certain amount of mechanization, agricultural output doubled between 1866 and 1878. Had the United States been on the gold standard, international trade would have put a floor under farm prices. With a paper currency, most of the impact of this enormous increase of output fell on the domestic economy. The two-fold result was a fall of domestic prices and a fall in the gold premium as foreigners sought to buy cheap American products. In fact, the gold premium, which was 103% in 1864 and 41% in 1866, disappeared entirely by the end of 1878.

[15] This paragraph summarizes the theoretical discussion in Gottfried Haberler, *Prosperity and Depression,* 3rd ed. (Lake Success, 1946), pp. 446-51.

While the steady increase in output indicated that low prices were profitable to many farmers who could obtain cheap land, hardship for some was inevitable. Farms that were marginal in 1865 became submarginal as time went on. Those with heavy debt loads were hard hit; the liquidation wringer they were forced through added to the depression of the 'seventies. Even before the depression, farm troubles were expressing themselves in agitation against the railroads; and there is even evidence of a fall in farm wage rates in the face of a tendency for other wages to show the normal cyclical rise.[16] In the 'seventies, the rapid growth of the grangers was a further expression of agricultural troubles.

The fall of agricultural prices dominated the wholesale price index because (1) farm products enter directly into computation of the index, (2) they serve as raw materials for other industries (for instance, cotton textile prices fell because the price of cotton fell), and (3) falling agricultural prices depressed the gold premium, making imports cheaper. But there were other reasons why non-agricultural prices fell. Chief among these was the cyclical cumulative contraction following 1873, which reduced wage rates as well as demand. Moreover, between 1865 and 1869, the currency supply contracted. There were also important technological improvements. Reduction of transport costs has already been mentioned. The iron and steel industry, which among other advances started using the Bessemer process at the end of the war, made gains at the expense of England in spite of the appreciation of the greenback.

II. *The Post-Civil War Recession*

At the end of the Civil War, the American economy faced a great problem of readjustment. A federal budget deficit of almost one billion dollars in the fiscal year 1865—perhaps one-seventh of national income —dropped to less than zero in 1866.[17] The wartime speculative boom in wholesale prices collapsed early in 1865 in anticipation of sound finance, and the change necessitated a shift of economic resources which by itself might have been expected to impose a severe strain on the economy. Pig-iron production, for instance, fell from 1,014

[16] Frank D. Graham, "International Trade Under Depreciated Paper. The United States, 1862-79," *Quarterly Journal of Economics,* February, 1922, p. 271. The statistics for farm wages are even more unreliable than the general run of statistics for this era. Presumably they indicate not necessarily that farm wages in general fell but only that they fell in certain localities.

[17] For the federal deficit, see Table I. For national income, see Robert F. Martin, *National Income in the United States, 1799-1938* (New York, 1939), p. 6. According to Martin, realized national income in 1869 (the nearest date to 1865 for which estimates can be made) was $6,827 million.

thousand long tons in 1864 to 832 in 1865.[18] Another important shift was the release to the working force of one and a half million men who had been directly or indirectly engaged in prosecuting the war.[19] In addition, the working force had to absorb a stream of 300 thousand immigrants in each of the fiscal years 1866 and 1867, compared to 180 thousand in 1865.[20] For one reason or another, the currency supply contracted 30% between 1865 and 1869. As if that were not enough, the South for the time being was economically prostrate. Not until 1878 was the cotton crop to be as large as the 1860 crop.[21]

Great as the needed readjustments were, they are no more impressive than those which were so easily made in the American economy following World War II. But 1945 had three advantages which 1865 lacked—shortages of such modern consumer durables as automobiles and refrigerators, a suppressed inflation that was about to come into the open, and an inflationary export surplus to Europe.[22] Under the circumstances, it is not surprising that instead of a postwar boom, the National Bureau of Economic Research records a cyclical contraction from April 1865 to December 1867.[23] Rather, it is surprising that the reaction was mild. The chief indication of depression was a more rapid fall in wholesale prices than in succeeding years.[24] In only one year, 1867, was the process of cumulative cyclical contraction, as described in business cycle theory, clearly evident.[25] Liabilities of business failures reached $97 million in that year, a figure which, though moderately heavy, was 20% less than in the boom of 1872; New York clearings, which had risen 20% in 1866, in the following year fell below 1865,

[18] Persons, Tuttle, and Frickey, *op. cit.*, p. 27.

[19] David A. Wells, "The Recent Financial, Industrial and Commercial Experience of the United States: A Curious Chapter in Politico-Economic History," in *Cobden Club Essays, Second Series, 1871-2,* 2nd ed. (London, 1872), p. 491.

[20] Jerome, *Migration and Business Cycles,* p. 35.

[21] *Statistical Abstract of the United States, 1882,* p. 123.

[22] The South in 1865 occupied a position analogous to Western Europe in 1945 (or more accurately, to Germany), but it is doubtful if there was any significant net movement of capital into the South such as might have supported an interregional export surplus for the North. See E. Merton Coulter, *The South During Reconstruction, 1865-1877* (Louisiana State University Press, 1947), *passim,* esp. pp. 10, 20, 148-51, 154, 190-2 and 197.

[23] Burns and Mitchell, *op. cit.*, p. 78. The dates given in the text above are the peak and trough respectively.

[24] More precisely, the fall was more rapid than that of a straight-line trend fitted to wholesale price data for 1866-1880. Persons, Tuttle and Frickey, *op. cit.*, p. 28.

[25] In fact, Donald W. Gilbert held that there was a "minor revival" in 1866 ("Business Cycles and Municipal Expenditures," *Review of Economic Statistics,* August, 1933, p. 140); and Isaiah Frank thought that an expansion phase began in August 1865 which he was not sure did not continue without interruption until 1869 (Burns and Mitchell, *op. cit.*, p. 111, note 67).

probably reflecting a decline in the stock market; and Frickey's index of manufacturing production rose less than trend.[26] Here is one more piece of evidence that reconversion adjustments are made easily.

Why was the reaction mild? Balancing the federal budget had nothing like the adverse effect a similar balancing had in 1937, in spite of the relatively greater gap closed. In 1937, the level of activity had become dependent on continued deficit financing. In fiscal 1866, however, disappearance of the deficit merely removed inflationary pressure on prices, allowing them to fall, first because the basis for speculation collapsed and second because output increased. The price decline meant hardship and even liquidation for some, but as long as the existing money supply continued to circulate there was no cause for general contraction.

Another reason for the mild reaction was that investment in building and railroad construction was increasing. According to one estimate, railroad construction increased from 1177 miles in 1865 to 1716 in 1866 and 2249 in 1867. In the latter year, railroad construction was only one-third the mileage of the peak year, 1871, but indirect effects must also be taken into account (see Section I above). Moreover, in the field of building construction, indirect effects from railroad investment were re-enforced by a postwar shortage, so that activity rose in spite of the recession.

And it must be remembered that many of those added to the working force did not seek jobs in industry but went into agriculture, making use of the Homestead Act of 1862 or otherwise acquiring cheap land.

It is more difficult to explain why the 30% contraction of the currency supply between 1865 and 1869 neither caused a severe depression nor prevented the cyclical expansion of 1868-69. The currency contraction was concentrated primarily on interest bearing legal-tender notes of the government. These did not circulate significantly, but they added to bank reserves.[27] Absence of trustworthy statistics on state bank deposits makes it impossible to trace the effects of contraction of interest-bearing legal-tenders, but it is significant that the total of state plus national bank notes was a little higher in 1869 than in 1865. Since contraction of bank reserves would affect notes and deposits equally and since the secular trend was to replace notes with deposits rather than the other way round, we may infer that total bank deposits prob-

[26] Persons, Tuttle and Frickey, *op. cit.*, p. 39; Edwin Frickey, *Production in the United States, 1860-1914* (Cambridge, Mass.), pp. 54 and 60. The index of manufacturing rose more than trend in 1866.

[27] *Historical Statistics of the United States*, p. 276; *Banker's Magazine* (New York) August, 1879, pp. 148-150. There was also a great reduction of state bank notes, but it was fully compensated by a rise in national bank notes.

ably did not decline. (This is plausible inasmuch as the banks had large excess reserves at the end of the Civil War;[28] moreover, part of the notes were presumably held by individuals as investments and did not affect bank reserves). If so, the total money supply (not counting interest-bearing legal tenders as money since they did not circulate) fell perhaps 10% or less over the four years instead of 30%. Even so, currency contraction must have exerted more than a negligible effect.

III. *1867-73*

Under the influence of railroad and building construction, cyclical expansion commenced at the beginning of 1868 and continued, according to the National Bureau, until June of 1869. After that, a mild contraction began. What started recession in the face of a 50% increase in railroad miles built must be a matter of speculation. One possibility is that it originated in financial difficulties. In June, there was a marked money stringency, the call loan rate reaching 44% and never falling below 16%. This was no worse a showing than in November of the preceding year, but inasmuch as call loan money financed the stock market, stock prices declined. Thus the economy had become somewhat vulnerable to contractive forces.

In September, there was a short-lived panic when Jay Gould and Jim Fisk attempted to corner the gold market. They failed, but they temporarily ran the price of gold up from 132 to 162, demoralizing import and export markets and throwing the commercial world into confusion.[29] Although the *Commercial and Financial Chronicle* observed no lasting damage to business, such a panic could have contributed to the mild recession that followed by discouraging inventory accumulation. This is made clear by the minor business cycles of the 1920's in which fluctuations in inventory investment played a large

[28] As evidence, although lawful money reserves of national banks declined from $207 millions at the beginning of 1866 to $149 millions in the middle of 1869, loans and discounts rose in the same period from $501 to $686 millions, deposits from $522 to $574 millions, and national bank notes from $276 in 1866 to $292 millions in 1869. (Persons, Tuttle and Frickey, *op. cit.*, pp. 51 and 53; *Historical Statistics of the United States*, p. 276.)

Moreover, the retirement of interest bearing legal-tenders overstates the loss of potential bank reserves. "When the compound-interest notes were finally paid off in 1867, the Banks had influence enough with Congress to procure the passage of a law creating, for their special benefit, 50 millions of temporary loan certificates, payable on demand, but bearing 3 per cent interest, the statute providing that their reserve fund might consist of such certificates." Francis Bowen, *American Political Economy* (New York, 1870), pp. 384-85.

[29] Davis R. Dewey, *Financial History of the United States*, 10th ed. (New York, 1928), pp. 369-70; Warren F. Hickernell, *Financial and Business Forecasting*, Alexander Hamilton Institute, Vol. I, pp. 311-14; *Commercial and Financial Chronicle*, Vol. IX, (1869), pp. 406, 437, 453-55.

rôle. According to Kuznets, inventory accumulation was relatively more than twice as large in the decade 1869-78 as in 1919-28.[30] While these figures do not gauge the relative importance for cycles of inventory changes in the two periods, they do indicate that actual decumulation of inventories would not have been necessary to start a contraction of business activity in 1869. Cessation of accumulation would shut off an important avenue for the use of funds. With a declining stock market, the funds might be hoarded long enough to initiate contraction. The fact that the panic came after the cyclical peak does not damage the above hypothesis, for business is subject to many inconsequential ups and downs which do not count as business cycles.

Contraction was necessarily mild as it was bucking against expansion in construction. In fact, the acceleration in additions to railroad miles in operation was greatest in 1869 and 1870. The housing index, however, declined in 1870, though it was to reach a peak in 1871. Professor Frickey's annual index of manufacturing did not increase in 1870, but neither did it decline. The sharp increase in railroad earnings came to a temporary halt. Imports declined for a time. By the beginning of 1871, the *Chronicle* was casually saying, "business is stagnant" but with no implication that anything was seriously awry.[31]

The trough, according to the National Bureau, came in December, 1870, and by the second quarter of 1871, expansion was plainly under way again. Business flourished until the fall of 1873. Frickey's index of manufacturing rose 20% between 1870 and 1873, and his production index for transportation and communication increased even more. Wholesale prices, reversing their downward trend, rose sharply from August 1871 until the spring of 1873. Oddly enough, wage rates, which hitherto had been rising in spite of falling prices, now tended to level off.[32] Railroad earnings rose spectacularly.

Investment in building apparently went into a decline before the panic of September 1873. The indexes of both Long and Riggleman show that the peak of *physical* construction came in 1871. The evidence is not clear as to how soon railroad investment began to decline. One estimate gives the peak in miles built as 1871, the other, as 1872. Orders for rails began to fall off only in the spring of 1872, and "apparent consumption" of rails reached its peak in that calendar year. Orders for locomotives also show 1872 as the best year, while orders

[30] Simon S. Kuznets, *National Product Since 1869* (New York, 1946), pp. 118-19. Net changes in inventories averaged $380 millions in 1869-78, or 5.4% of gross national product, which was $7,033 million. For 1919-28, the figure was $1,756, or 2.2% of GNP ($81,199).

[31] *Commercial and Financial Chronicle,* January 14, 1871, p. 37.

[32] George F. Warren and Frank A. Pearson, *Prices* (New York, 1933), p. 197.

for cars boomed until the second quarter of 1873.[33] These peaks relate to physical volume only. As steel prices rose sharply in 1872, the peak in expenditures may have come later than the peak in physical expansion. Moreover, in so far as the data relate to orders, physical peaks themselves may have lagged behind the dates given. Annual figures for the increase of railroad capital confirm these misgivings, showing a decided peak in 1873. We may conclude that even if the value of railroad investment did not decline prior to the panic, the transport-building cycle gave every evidence of being at the peak or beyond.

IV. *The Panic of 1873*

The National Bureau dates the cyclical peak as October 1873, the month following the outbreak of the banking panic. If we accept the Bureau's dating, we shall have no alternative but to conclude (as we shall see below) that the panic was the proximate cause of the business downturn. Now in principle there are many reasons for not accepting the Bureau's dates in blind faith. Not the least of such reasons is the scarcity of monthly data for the 1870's. Moreover, the intentionally vague definition of the business cycle employed by the National Bureau, however well suited to their research methods, does not seem precise enough for present purposes. Nevertheless, in spite of the fact that Ayres dated the peak long before the panic,[34] I have not discovered substantial reason for differing with the National Bureau; and in any event an outsider could hardly expect to challenge their results successfully in view of the amount of careful labor they have put into them. I shall, therefore, assume that business activity did not go into a cyclical decline prior to the panic.

This is not to say that a downturn would not have occurred had there been no banking difficulties. But if a patient with malignant cancer dies in a hospital fire, the coroner's report ignores the pathological processes which would have done away with him the next day and records the accidental nature of his death. So will it be here, inasmuch as my purpose is to narrate what did happen, not what might have happened.

The event which made a banking panic inevitable was the failure of Jay Cooke & Co.[35] Cooke, as the man who had financed the Civil War,

[33] John E. Partington, *Railroad Purchasing and the Business Cycle* (Washington, 1929), pp. 37-47.

[34] Leonard P. Ayres, *Turning Points in Business Cycles* (New York, 1939), p. 35. Ayres' dating was based on a hybrid index of business conditions obtained by combining 10 series relating to production, consumption and freight movements. Since he used deviations of the series from their norms, he gave his index a bias in favor of early dating of peaks.

[35] The account of the panic which follows is based, except as otherwise indicated, on Oliver M. W. Sprague, *History of Crises Under the National Banking System,* 61st Con-

enjoyed an extraordinary reputation. His downfall did far more damage than the failure of a financial pirate could have. He had taken on the risky job of financing the Northern Pacific Railroad. By May 1873, this road had spent over $15 millions, had little more than 500 miles in operation through a sparsely populated region, and the two portions of its lines were still more than 1,000 miles apart. More than once Cooke had been on the verge of finding customers for his $100 millions of bonds, but each time the deal fell through. Now, to keep the road going, he was advancing money obtained from depositors at short-term in expectation that an European market would develop.

But the market for railroad bonds turned worse in 1873 rather than better. Tight money was perhaps the principal cause,[36] but there were several others. Twenty-five railroads defaulted on interest on their bonds between January 1 and August 31,[37] a circumstance which affected the market unfavorably.[38] The Granger movement, though still in its infancy, prejudiced capitalists against the railroads.[39] The *Chronicle* was consistently optimistic about the safety of railroad bonds and even after the panic admitted only reluctantly that railroad building had been too rapid and that "some roads have been built in sections of the country where they were not yet needed, and could not have had any reasonable prospect of making sufficient net earnings to pay their annual interest";[40] but the *Nation* the previous year published an article claiming that "railroad securities in America are not more profitable on the whole, while decidedly less secure, than the bonds of the United States" and that in western states more roads had been built than the population could support.[41] Some investors abroad, as well as at home, evidently thought along the same lines as the *Nation*. In the summer of 1873, the *Chronicle* reported that foreign purchasers of bonds were favoring governments over railroads.[42] Moreover, despite the fact that Graham's figures (see Table I) show more net long-term capital imports in 1873 than any other year, the *Chronicle* further reported that foreigners were shunning new issues of railroad securities.[43] Although the money stringency had a good deal to do with drying

gress, 2d. Session, Senate Doc. No. 538 (Washington, 1910), pp. 1-89. See also Henrietta M. Larson, *Jay Cooke, Private Banker* (Cambridge, Mass., 1936), Chap. 19.

[36] *Chronicle,* January 10, 1874, p. 28.

[37] *Ibid.,* p. 36.

[38] *Ibid.,* August 2, 1873, p. 150.

[39] *Ibid.,* January 10, 1874, p. 28.

[40] *Ibid.,* November 15, 1873, p. 647.

[41] August 15, 1872, pp. 102-3.

[42] August 9, 1873, p. 173.

[43] March 29, 1873, pp. 407 and 408. See also December 21, 1872, p. 822.

up the market for bonds, the evidence indicates not only that investors in 1873 were turning away from newly issued railroad bonds but also that they had good reason to do so.

Jay Cooke was not the only one engaged in the dangerous practice of advancing short-term funds for long-term use. The New York banks had loaned money to railroads who expected to raise funds for repayment by selling bonds before the notes fell due.[44] The usual midsummer ease in the money market in 1873 induced the New York banks to increase their loans further with the intention of recalling them before money became tight in the fall.

Such unsound banking practices impinged on a situation made vulnerable by the downturn of railroad and building construction. Imports had reached their peak in 1872. Stock prices and New York clearings declined sharply in the first half of 1873. Wholesale prices resumed their downward trend after reaching a peak in the first quarter. Clearings in Philadelphia reached their maximum in the second quarter.

Cyclic weakness, however, was less important than structural banking weakness. Under the National Banking System, there was no effective central bank to act as lender of last resort and thus shield business and the stock market from panicky calling of loans in time of crisis. In addition, banking troubles were likely to spread from New York throughout the country inasmuch as bank reserves were concentrated in that city. The law permitted country banks to keep three-fifths of their required reserves on deposit in any of fifteen reserve cities. In 1873, New York banks were obligated to other banks for more than their total reserves, and seventy to eighty per cent of bankers' deposits were held by seven of New York's sixty banks. Trouble in New York might lead to hasty withdrawal of bankers deposits, undermining the position of banks both in New York and the hinterland, encouraging runs, and leading quickly to contraction of loans.

Trouble was more likely to come in autumn than at any other time. Moving of crops regularly necessitated a drain of money from New York to the interior. As the currency supply was highly inelastic, if the New York bank reserves were low (as they were in 1873), failures would be precipitated then if ever. So it was not surprising that unsound railroad financing was exposed in September. On the eighth, the New York Warehouse and Security Co., which had financed the Missouri, Kansas and Texas Railroad, was forced to suspend. On the thirteenth, the important banking house of Kenyon, Cox & Co., in which Daniel Drew was a partner, failed on account of indorsements of paper of the Canada Southern Railroad. These disasters wreaked havoc on the stock market but nothing more.

[44] *Chronicle,* November 15, 1873, p. 647 and January 10, 1874, p. 28.

On Thursday, September 18, Jay Cooke & Co. failed on account of its advances to the Northern Pacific Railroad plus a heavy drain by depositors on its cash resources. This caused general distrust and a rapid calling in of loans, precipitating failure of Fisk and Hatch the next day. Stocks plummeted, and failures followed thick and fast. On September 20, two trust companies suspended. Though they later were able to resume business, immediate consequences were far reaching. One, the Fourth National, held $15 millions of bankers' deposits; hence, the suspension hurt outside banks, and led to runs and the recall of funds from New York.

The panic was handled well. On September 20, the New York Clearing House Association arranged for its members to deposit approved securities with a committee of five, which then issued certificates of deposit ("clearing house certificates") up to 75% of the value of the securities. The certificates could then be used to settle clearing house balances. Thus the policy of every bank recalling loans, thereby ruining each other and business too, was avoided. Unfortunately, mounting calls for cash from the interior forced partial suspension of cash payments. On September 24th, the clearing house banks passed a resolution that all checks issued would be stamped "Payable through the Clearing House," thus concentrating control of reserves in the committee's hands. Partial suspension in New York necessarily caused partial suspension throughout the country, except in California, which was on a gold basis. But the committee controlling the New York reserves restored confidence by using them freely. Panic was over by September 29, eleven days after it had begun. After October 18, New York bank reserves began to increase, and by mid-November the reserve ratio once again exceeded the legal minimum.

What effect did the banking panic have on business? In the first place, there was a brief paralysis of the crop movement. Secondly, on September 20, foreign exchange became blocked. However, the issue of clearing house certificates on September 24 enabled the banks to resume purchasing foreign bills. Towards the end of the week, England began to ship gold, enabling exports to move. Thirdly, the panic caused considerable hoarding, *e.g.*, because businesses kept their cash receipts in their own vaults instead of depositing them in banks. The national banks lost 23% of their holdings of legal tender notes between September 12 and October 13, a symptom of the hoarding. But the New York banks used their reserves so freely that the desire to hoard stopped. In the meantime, however, the hoarding aggravated the effects of partial suspension (which lasted nearly three weeks), and numerous firms had difficulty meeting payrolls. These had to reduce employment because they could neither get the cash to which they were entitled nor negotiate loans. Fourthly, after the middle of October, although

there was no longer any difficulty meeting payrolls, businessmen had to cut production because demand had fallen. Contributing to the decline of orders was the decline of railroad and building construction. But it is difficult not to believe that the most important immediate factor was the interruption of business during the panic. To the extent that payrolls could not be met, consumer demand was cut. More significant, it can be assumed that businessmen during the panic either cancelled orders or curtailed making new ones. Once the purely monetary troubles were over, the decline of spending and ordering curtailed output, which in turn reduced spending, and so on in the familiar process. Even without a decline of long-term investment prospects to reenforce it, the panic by itself could have started a cumulative cyclical decline.

V. *Theory of the Downturn*

If we regard theories as tools for understanding reality, we have been able to get along with very few tools in accounting for the downturn of 1873. We have not had to mention any of the theories of the upper turning-point. Nevertheless, it is useful to discuss them at this point, because they can give us a more penetrating understanding. Moreover, theories can be considered as generalizations of reality as well as tools; and we now have an opportunity to test their generality with a case in which the essential processes stand out in unusual clarity. Besides, the discussion may throw some light on the history of business cycle theory, for the facts (some of which have always been widely known) are consistent with several different theories.

1. *Hawtrey.* According to Hawtrey's purely monetary theory, cyclical expansion leads to a drain of currency out of banks and into circulation as wages and incomes rise. Sooner or later the banks reach the end of their reserves and must stop expanding credit, but as the rise in wages and incomes lags behind credit, the drain of currency continues. This forces the banks to contract, initiating depression.

That is roughly what happened in 1873. The banks expanded to the limit during the summer. The autumnal drain of cash into the interior helped set off a violent process of monetary contraction. But this is a superficial interpretation. It leaves too much out of the picture. For instance, it ignores the likelihood that greater elasticity of credit would not have saved the situation but would have permitted the multiplication of unsound financial practises, leading in the end to still greater difficulties;[45] only revival in the securities markets could have saved Jay Cooke and his ilk. Nor do the facts bear out Hawtrey's theory in detail. But the case illustrates how the monetary theory in one form or

[45] Schumpeter, *op. cit.*, Vol. I, p. 316.

another could be so popular prior to the 1930's. The facts do not contradict it.

2. *Cassel.*[46] According to Cassel, shortage of capital causes the downturn. At the beginning of the upswing, or high conjuncture, the rate of interest is low. This induces businessmen to take advantage of the opportunities provided by technical progress (*e.g.*, railways), the opening up of new countries, and the increase of population to launch ambitious investment programs. In the upswing, production of fixed capital grows more rapidly than production of consumers goods. For four reasons, the supply of money capital does not grow as rapidly as the output of capital goods: (1) if savings were a constant proportion of income, the relative growth of output of fixed capital would create a disparity; (2) in fact, savings are not a constant proportion of income but are relatively large at the first part of an upswing when profits are high but towards the end ("in the high conjuncture proper") fall off relatively as wages rise and profits decline, so that the interest rate rises towards the end of the upswing; (3) this is accentuated by the increased returns from fixed capital at the earlier part, which rise more rapidly than the prices of capital goods and therefore tend to raise the interest rate; and (4) in the earlier period, banks create new purchasing power at low interest rates, diverting production to capital goods, and hiding the increasing stringency of capital; but "when the banks afterward find it necessary in their own interest to cut down this excessive supply of media of payment, the real scarcity of capital is suddenly and acutely felt."[47] The high rate of interest at the end of the upswing cuts down the demand for capital goods, frequently forcing the abandonment of projects already begun. Workers in the capital goods industries lose their jobs. Usually, a crisis marks the onset of depression. Cassel defines crisis "as a time of general inability to meet obligations which fall due."[48] It is caused by "an overestimate of the supply of capital, or the amount of savings available for taking over the real capital produced."[49]

In so far as they can be ascertained, the facts of 1865-73 fit Cassel's theory well. After a considerable period of easy money and expanding credit, money conditions became tight in 1872. Meantime, the Northern

[46] Gustav Cassel, *The Theory of Social Economy,* translated by Joseph McCabe, (New York, 1924), Fourth Book, esp. pp. 596-628. I take Cassel as an example to represent the shortage-of-capital school primarily because he meant his theory to explain the conjunctures of the period 1870-1914. Similar remarks to those that follow in the text above could be made about Hayek's monetary overinvestment theory as summarized by Haberler, *op. cit.,* pp. 33-72.

[47] *Ibid.,* p. 628.

[48] *Ibid.,* p. 509.

[49] *Ibid.,* p. 626.

Pacific and some other roads made grandiose plans based on an overestimate of the supply of capital that would be forthcoming. When the elasticity of the credit system ceased to hide the shortage of capital, the inability of a few to meet their obligations became translated through runs into a panic and a partial breakdown of the banking system. After the crisis, the shortage of capital was accentuated because foreign investors stopped buying American securities.

There is much to commend this interpretation. It turns on a fact other explanations are apt to ignore, namely that the decline of railway investment was due to lack of investors more than lack of projects. On the other hand, one cannot help feeling that investors were chary not (or not only) because they did not have enough funds but because they recognized a change in the profits prospects of new investments. Although Cassel's theory accounts for much more of what happened than Hawtrey's, it still does not cover the whole ground.

3. *Haberler.* As Haberler's *Prosperity and Depression* is now the standard theoretical work on cycles, it is interesting to apply his eclectic theory of the downturn to 1873.[50] I shall omit all reference to monetary contraction because it plays only a small part in Haberler's synthesis and has already been discussed above in connection with Hawtrey.

First, Haberler discusses how a partial breakdown, say in a particular industry, can develop into general contraction. This need not detain us here. Second, he shows how, as the upswing progresses, the economy becomes more and more vulnerable to deflationary shocks. The upswing requires an elastic supply of both money and factors of production. As the banks become loaned up and the available workers all find jobs, the force of the expansion diminishes. Now, in the early 1870's inelasticity of the money supply had a braking influence, but the supply of labor was unusually elastic for boom times due to immigration.

Third, Haberler discusses two endogenous causes of the downturn: the acceleration principle, and a drop of investment because of insufficient demand. If expansion slows down or stops because the money supply becomes inelastic, the acceleration principle makes it extremely likely that workers must shift from capital goods industries where output has been geared to a rate of increase in demand for consumers' goods which can no longer be maintained. Even if aggregate demand for the time being does not decline, it is unlikely that the shifts can be accomplished quickly enough. The result is unemployment in certain capital goods industries followed by cumulative contraction. For 1873, there is no evidence of such a mechanism.

Declining investment on account of insufficient demand, the other endogenous cause Haberler discusses, has a number of variants, chief

[50] *Op. cit.*, pp. 347-77.

of which is exhaustion of investment opportunities. If the industries directly concerned are taken by surprise—if they have been overly optimistic, for instance—"the boom will explode with a more or less strong 'detonation' of bankruptcy, to use an expression of Professor Pigou."[51] This explanation is applicable to 1873, and is a major element of Schumpeter's interpretation, as we shall see in a moment. But like Cassel's, Haberler's theory does not cover the whole ground.

4. *Schumpeter.* The theories of Hawtrey, Cassel and Haberler could be summarized briefly without doing undue violence to their substance, but Schumpeter's theory is so elaborate that I shall have to assume the reader is familiar with it and content myself with the comments he has specifically directed to the cycle under consideration here. Discussing the spurt in railroad building during 1869-71, he says,

> Two things are perfectly clear. First, that development . . . was a typical downgrade development within the meaning of our model. It was a Juglar prosperity superimposed on a Kondratieff recession,[52] a new step in what was no longer fundamentally new, but a process of carrying out what had previously been initiated. . . . This left plenty of problems for the individual case, but they were comparatively easy to solve, further eased by the growth of the environment, and of the type which is characteristic of "exploiting investment opportunity" and "pushing into new economic space." Moreover, the general features of the period support this interpretation. There was a great building boom. The well-being of all classes in the years 1869 to 1873 . . . is obviously due to the expansion of production which our schema leads us to expect in every Kondratieff recession. But it is not less clear, in the second place, that that method of financing which so well illustrates our theory, was handled with such carelessness as to make it an additional cause of the situation of 1873. It not only induced but really also presupposed abnormal speculative activity and could not without it have gone to anything like the lengths it did. The phenomena of the Secondary Wave were developed to an unusual degree thereby, and errors and cases of misconduct became possible which our model does not account for per se . . . and it becomes understandable that even as regards the railroad business these things were more obviously in evidence than the underlying process and that it seemed as if construction had been brought to a stop and the success of existing lines had been jeopardized by them rather than by any 'logic of evolution.' But even so, nobody can deny . . . that railroad construction had temporarily exhausted possibilities—a formulation which is more correct than the more common phrase of things having been overdone—and it should be easy to see that this, together with the dislocating consequences immediate and ulterior, for the economic system, of new construction was what created the situation in which the Secondary Wave broke, and with

[51] *Ibid.*, p. 375.

[52] Undoubtedly a slip. It is clear from Professor Schumpeter's model, his chronology on page 396, and his statement on page 338 that he meant Kondratieff *depression.*

> it untenable credit situations and speculative bubbles all over the field of industry and commerce.
> . . . It is not astonishing that the impact was primarily on the new, instead of on those elements that progress had made obsolete. For, as was pointed out in our theoretical chapters, this will always happen if the new things stand on a slender and the old things on a safe financial basis. Thus, the role played in the drama by the Northern Pacific failure does not any more contradict expectation from our model than does the fact that, in general, danger signals first became visible in the railroad field.[53]

The passage quoted is a brilliant synthesis of the monetary and "real" forces at work. It brings out the underlying importance of entrepreneurial activity in railroads and shows how it gave rise to the excesses of the boom and the ultimate collapse. Banking panics for Schumpeter are always partly accidental, and so it was in this case; but given the institutional arrangements of the time, his theory shows how at certain times—including this one—events make a panic if not probable at least understandable. That his interpretation does not make use of the shortage of capital which was manifest in 1873 is a source of strength rather than weakness, for he emphasizes a more significant fact, namely, that the railroads were ceasing to be attractive to investors. Although Schumpeter's work as a whole has been subject to important criticisms, for this particular episode it offers a more convincing explanation than any other.

VI. *The Depression of the 1870's*

The cyclical contraction which followed the panic of 1873 was the longest in the history of American business cycles. According to the National Bureau, it lasted until March 1879, a span of five years and five months. In monetary statistics, it was second in severity only to the contraction of 1929-33 among post-Civil War cycles. Hubbard has measured the severity of depressions in terms of the decline in bank clearings or debits. The records begin only with 1875; yet the decline for 1875-78 was greater than for any other except 1893-97 and 1929-33. It was virtually as great as 1893-97 and undoubtedly would have been greater if statistics were available from the peak of 1873.[54] Eckler used six series to measure the severity of depressions. He found that 1873-78 was second only to 1929-32, and this result was mainly due to the three monetary series used.[55]

[53] *Op. cit.*, Vol. I, pp. 335-36.

[54] Joseph B. Hubbard, "Business Declines and Recoveries," *Review of Economic Statistics,* February, 1936, pp. 18-19.

[55] A. Ross Eckler, "A Measure of the Severity of Depressions, 1873-1932," *Review of Economic Statistics,* May 15, 1933, p. 79. 1929-32 was the deepest depression in all six

Nevertheless, in terms of output the contraction of the 'seventies was singularly mild. Frickey's indexes of production for manufacturing and for transportation and communication declined markedly less than in 1893-94 and 1907-8 even though the latter contractions were much shorter; and manufacturing did not decline after 1875 but actually increased 14% in the last two years of the depression.[56] Martin's figures show that in spite of the long depression, real income in 1879 was two-thirds greater than in 1869. Even on a per capita basis, the increase was one-third.[57] In June 1878, which was presumably as bad a time as any, Carroll Wright took a kind of census which showed only 28,500 people unemployed in Massachusetts out of a normal working force in "mechanical industries" of 318,000.[58] Although comparison with modern figures is not reliable, this looks no worse than 1930.[59]

The panic of 1873, the disillusionment of investors about the railroads, the indirect effects of the decline in railroad investment, and the position of the 'seventies in the downswing of a building cycle are fully sufficient to account for events through 1876. What needs to be explained is (1) why the depression lasted so long and (2) why it was so mild in terms of output, particularly in the last two years.[60]

If the United States had been on the gold standard in 1873 at the exchange rate which then actually prevailed, cyclical contraction might have come to an end two years sooner than it did. Under gold standard conditions, a small country undergoing depression reduces imports as national income drops, but its exports are maintained. Moreover, if

series. The contraction of the 'seventies was second in two monetary series (clearings and railway revenues) and third in the other (imports). It was second in one of the physical series (coal production), fifth and sixth in the other two (pig iron production and cotton consumption; however, Eckler does not make it quite clear whether cotton consumption was a physical or a monetary series).

[56] The coverage of the indexes is rather meager, so that too much confidence cannot be placed in inferences drawn from them. One need not necessarily conclude that manufacturing output as a whole increased in 1877 and 1878. Nevertheless, the figures are comparable over the whole period, 1865-1914, so that comparisons among different cycles of this period should be reasonably trustworthy.

[57] Martin, *op. cit.*, p. 6. It should not be necessary to stress that national income figures for this period are subject to a wide margin of error.

[58] *Tenth Annual Report of the Bureau of Statistics of Labor,* Massachusetts Public Doc. No. 31, January, 1879, pp. 6-13. Applying the ratio of unemployed in Massachusetts to the whole country, Wright estimated total unemployment in the United States at 570,000.

[59] In 1930, out of a *total* labor force of 48.7 million, there were 4.2 million unemployed. Civil non-agricultural employment was 31.1 million. *Twenty-Sixth Annual Report of the National Bureau of Economic Research* (New York, 1946), p. 31.

[60] I have dealt with Schumpeter's explanation of the depression of the 1870's elsewhere and shall not repeat myself here. See my article, "The Long-Wave Depression, 1873-97," *Review of Economics and Statistics,* Feb., 1949, pp. 71-72. For a criticism of that article, see Richard V. Clemence and Francis S. Doody, *The Schumpeterian System* (Cambridge, 1950), pp. 80, 90 and 91.

its prices fall, both domestic and foreign buyers shift to its products and away from foreign commodities. For both reasons, depression generates a favorable balance of payments which helps arrest cyclical contraction. The greenback appreciated a small amount between 1873 and 1876 and in the following year appreciated almost seven per cent more. The forces which under paper standard conditions caused this appreciation would under gold standard conditions have been largely channeled into stimulating the domestic economy, or rather, into arresting the fall of prices. In 1877, moreover, there is evidence of an upturn in railroad investment, building construction, manufacturing, and mining. This indicates that under gold standard conditions deflation might well have been ended by 1877, other circumstances being favorable to cyclical revival.

Since the United States was not on the gold standard, we must inquire what effect price flexibility had on the course of contraction.[61] It is safe to assume that prices (including wages) were more flexible in the 1870's than in the 1930's. Wholesale farm prices generally are highly flexible. Inasmuch as they fell somewhat more sluggishly in the 1870's than non-farm prices[62] (whereas they fell much more rapidly than other prices between 1929 and 1933), other wholesale prices must have been highly flexible also.

The effect of price flexibility on cyclical contraction can be brought out by contrasting two situations. First, assume that the economy momentarily rests in Keynesian underemployment equilibrium but wages and prices begin to fall. So long as they continue to fall—and there is no necessary reason why they should not fall forever—statistical series will exhibit many of the characteristics of cyclical contraction; and even if circumstances now become favorable to cyclical expansion, revival will be postponed or hindered by the general deflation. This seems to be more or less what happened in 1877 and 1878.

Second, assume that a cyclical contraction is under way. If price changes do not alter the course of aggregate spending, price flexibility increases output above what it otherwise would have been (with a given amount of spending, output is an inverse function of the price level). Of course, the fall of prices will not leave the course of aggregate spending unchanged, but its effects work in both directions.

In the 1870's, price flexibility probably reduced aggregate spending below what it otherwise would have been but not by so much as to

[61] The discussion of price flexibility in the text draws on an article by the present writer, which has been published in the *Quarterly Journal of Economics* for November 1950. On account of space limitations, no more than a summary of the results of that article can be given.

[62] Mitchell, *op. cit.*, p. 54.

reverse the tendency for flexibility to mitigate the decline of output. I have no direct evidence about the state of expectations, but it is probable that flexibility induced expectations that prices would fall further. As a matter of fact, prices had been falling, with one interruption, ever since 1865; yet until 1878 they were still above the pre-Civil War normal. In addition, in the lame-duck session of early 1875, Congress passed a law providing for resumption of specie payments on January 1, 1879; and in the spring of 1877 the Secretary of the Treasury began to make effective preparations to implement the law. It should have been evident that if resumption was to be carried through, American prices would have to fall relative to foreign prices (which were also falling). The government did not in fact put effective pressure on the price level, but that would not keep the prospect of resumption from affecting expectations unfavorably. Offsetting in part the factors adverse to spending was the rise in the value of currency and publicly held government debt. Because retail prices fell more slowly than wholesale prices, government obligations increased in value only a little over ten per cent. We may conclude, therefore, that price and wage flexibility probably intensified the contraction of spending, mitigated the decline of output, and prolonged the contraction phase of the cycle.[63]

There is one other important circumstance which must be considered. On account of the large amount of investment in railroads prior to 1873, we might expect that several years would pass before the revival of railroad building. On the other hand, there was no shortage of railroads to be built. Construction of many roads had had to be abandoned during the depression before their main lines were completed, and the steady growth of population and agricultural output continually increased the inducement for the roads to expand. In view of the experience of the 1880's (the 1885 trough in railroad investment came only three or four years after the peak and was followed by a vigorous expansion), we might reasonably expect railroad activity to revive about 1876 or 1877. And in fact, the evidence indicates that it did so, though it is conflicting as to the exact time. The number of miles built reached its trough in 1875 and then increased substantially in the following year. The increase in railroad capital shows a trough in 1876 with a substantial revival in 1877. Orders for most types of

[63] It might be inquired why flexibility did not also make the contractions of 1893-94 and 1907-8 mild with respect to output. The answer, I think, lies in the greater violence of the panics with which those contractions began.

The statement that price flexibility mitigated the decline of output but prolonged the contraction phase of the cycle sounds inconsistent. The explanation lies in the fact that the decline in output apparently ended around 1877 whereas the contraction (according to NBER) continued until March 1879.

railroad equipment revived in 1876 or 1877.[64] But all the evidence points to an early relapse of railroad investment. Why?

No doubt the continuance of deflation elsewhere in the economy provides part of the answer. Had deflation stopped, the railroads could have sparked a revival. But part of the answer must be sought within the railroad industry itself. There were three specific factors which discouraged investment in railroads: freight rate wars were acute in 1876; railroad strikes, which had to be quelled by military force, occurred in 1877; and federal, state, and local aid to railroad companies was replaced during the depression by efforts, occasionally successful, to pass legislation regulating railroads and railroad rates.

By 1879 conditions were ripe for recovery. Specie payments were successfully resumed on January 1, a step that (if we can believe the *Chronicle*) had favorable effects on business confidence. By that time, prices were well below even the pre-Civil War normal. Not only was there no need to expect prices to fall farther but in fact they stopped falling. In addition, investment in railroads revived strongly in response to the new business furnished by a 50% increase in crop production since 1873 and the sales of railroad land grants to new settlers. During the summer it became apparent that the United States was to enjoy unusually bountiful crops, Europe unusually poor ones, a combination which for a predominantly agricultural country on the gold standard was a powerful stimulant. Thereafter, the expansion phase of the cycle was in full sway.

VII. *Conclusions*

When warfare ended in 1865, long-term investment prospects became favorable, particularly in railroads. Nevertheless, readjustment to peacetime conditions brought on a recession which lasted until the end of 1867. There was another recession in 1869-70, the causes of which are obscure. But the expansion of railroad investment went on, climaxing in a boom in 1872-73. By that time long-term investment prospects, from the point of view of the man who puts up the money, appear to have taken a turn for the worse. Nevertheless, a banking panic, the origins of which lay in the excesses of the railroad boom, was the immediate cause of the cyclical downturn. The theories of Schumpeter and Cassel both fit the facts of the downturn. Of the two, I prefer Schumpeter's, though available evidence is not sufficient to settle the issue. The depression that followed is the longest of which we have record, lasting until early 1879. Though exceedingly severe in monetary terms, it was mild in real terms, partly as a result of price

[64] Partington, *op. cit.*, p. 53.

flexibility. The unfavorable long-term investment situation accounts for the depression lasting through 1876 or 1877, but about that time the outlook appears to have improved. However, a number of short-run influences—the fact that the United States was off the gold standard; a high degree of price flexibility; unfavorable price expectations; rate wars, strikes and adverse legislation in the railroad industry—delayed recovery. In 1879, the return to the gold standard put a floor under prices and increased confidence; and poor crops abroad combined with bumper crops in the United States gave a powerful stimulus, so that short-run as well as long-run prospects became propitious.

The hypothesis of a major cycle from 1865 to 1879 (with the peak in 1873) requires a minor qualification. Long-term investment prospects, though the evidence is not altogether certain, apparently changed before the business cycle peak of 1873 and trough of 1879. Strictly speaking, we should perhaps date our major cycle accordingly. But simplicity and convenience dictate that we date the peaks and troughs of major cycles to coincide with peaks and troughs of business cycles. Otherwise, the hypothesis stands up.