Volume Title: The Behavior of Prices

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Volume Publisher: NBER

Volume ISBN: 0-87014-010-8

Volume URL: http://www.nber.org/books/mill27-1

Publication Date: 1927

Chapter Title: Price Changes Between Specific Dates

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Chapter URL: http://www.nber.org/chapters/c5317

Chapter pages in book: (p. 37 - 39)

CHAPTER I

MEASURABLE CHARACTERISTICS OF COMMODITY PRICES

The present inquiry is concerned with the behavior of commodity prices, singly and in combination. Of the movements to which the prices of specific commodities are subject but little is known, in detail, and our knowledge of the immediate causes of such movements and their relative importance is still more meager. Without such detailed information an accurate conception of the structure and working of the price system is impossible. The first stage of the investigation deals, accordingly, with the behavior of individual commodity prices.

No list of the characteristics of specific price series would be complete for all purposes. In selecting the characteristics which are described in this study emphasis has been placed on those properties of commodity prices which possess general economic interest and which lend themselves to quantitative treatment. The present classification is an experimental one, however, and is not to be looked upon as rigid or exhaustive. This classification includes the following aspects of price behavior:

1. Changes between specific dates.
2. Variability.
3. Trend over a stated period of time.
4. Timing, duration and amplitude of individual price changes during general price movements.
5. Flexibility; correlation between prices and quantities.
6. Regional differences in prices and in price behavior.

A consideration of the nature of the above characteristics and the selection of suitable methods of measurement will be our first concern. Five of these characteristics are treated in the present chapter. Regional differences in prices and in price behavior, which stand in a slightly different category, are discussed in the following chapter.

I Price Changes Between Specific Dates

Changes of this type require no explanation here, for they have furnished the main problems which have engaged students of prices in the past. Attention was first drawn to the important fact of a fluctuating price level and to related questions dealing with the

purchasing power of money by such changes in the prices of individual commodities, and the data for the study of these problems have been derived from records of individual price movements.

Changes in commodity prices from day to day, week to week, month to month, year to year, or in reference to a fixed base, may be measured either in absolute or relative terms. The following table furnishes examples of the measures which may be employed.

TABLE 1

AVERAGE ANNUAL PRICES OF HIDES, AT WHOLESALE, 1890-1926
(GREEN, SALTED, PACKERS': HEAVY NATIVE STEERS, CHICAGO)[1]

(1) Year	(2) Average price per pound	(3) Price change from preceding year	(4) Link relative (preceding year =100)	(5) Fixed base relative (1913=100)
1890	$.093			50.7
1891	.095	$+.002	101.9	51.7
1892	.087	—.008	91.6	47.3
1893	.075	—.012	86.1	40.7
1894	.064	—.011	85.6	34.9
1895	.103	+.039	160.4	55.9
1896	.081	—.022	78.9	44.1
1897	.100	+.019	122.8	54.2
1898	.115	+.015	115.6	62.6
1899	.124	+.009	107.3	67.2
1900	.119	—.005	96.7	64.9
1901	.124	+.005	103.6	67.3
1902	.134	+.010	108.2	72.8
1903	.117	—.017	87.3	63.6
1904	.117	+.000	100.0	63.4
1905	.143	+.026	122.6	77.8
1906	.154	+.011	107.9	83.9
1907	.146	—.008	94.3	79.1
1908	.134	—.012	91.8	72.6
1909	.165	+.031	123.3	89.6
1910	.155	—.010	93.9	84.1
1911	.148	—.007	95.5	80.3
1912	.176	+.028	119.2	95.7
1913	.184	+.008	104.5	100.0
1914	.196	+.012	106.7	106.7
1915	.242	+.046	123.3	131.6
1916	.262	+.020	108.2	142.4
1917	.327	+.065	124.8	178.0
1918	.301	—.026	92.0	163.8
1919	.393	+.092	130.6	213.8
1920	.312	—.081	79.4	169.8
1921	.139	—.173	44.6	75.6
1922	.180	+.041	129.5	98.0
1923	.167	—.013	92.8	90.6
1924	.147	—.020	88.0	79.9
1925	.160	+.013	108.8	87.1
1926	.140	—.020	87.6	76.3

[1]Except where otherwise noted all prices are taken from the wholesale price bulletins of the U. S. Bureau of Labor Statistics.

In a later chapter the analysis of such measures, in combination, is discussed in detail.

II Variability of Commodity Prices

Commodities differ materially among themselves in respect to the amplitude and frequency of their price movements, their "proper fluctuations," in Edgeworth's phrase. The prices of certain commodities, such as bread, change but slightly or not at all over a long period of time. Others, of which potatoes are a notable example, are characterized by widely varying prices from month to month and from year to year. These differences in variability may be due to differences in the organic nature of the commodities in question, or to differences in the conditions under which they are produced, marketed and consumed.

The type of variability which is to be measured is a matter for determination before methods of measurement may be decided upon. For some purposes interest might attach to day-to-day, week-to-week, month-to-month or year-to-year variation, or to seasonal or cyclical price fluctuations. Cyclical movements are dealt with in section IV, below. No attempt has been made in this study to measure seasonal movements. It has not seemed feasible or desirable, for the purposes of the present inquiry, to compute measures of variability relating to such short intervals as the day or the week. These considerations restrict us in the present section to three indexes of price variability, one measuring the amplitude of monthly price fluctuations, another measuring the frequency of monthly price changes, a third measuring the amplitude of year-to-year movements.

1. The Measurement of Monthly Variability

In measuring the fluctuations of monthly prices within a given year, the mean deviation from the average price for the year has been employed. This measure may be exemplified with reference to the following price quotations.

TABLE 2

Average Monthly Prices of Print Cloths, at Wholesale, 1925
(27 inch, 64 x 60)

Month	Average price per yard	Month	Average price per yard
January	$.069	July	.065
February	.068	August	.066
March	.069	September	.067
April	.067	October	.067
May	.064	November	.063
June	.063	December	.061
		Average	.066