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PART VII

NET CHANGES IN INVENTORIES

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PREFACE

1 CHANGES IN COMMODITY STOCKS AS PART OF CAPITAL FORMATION

Movable finished commodities and the products of construction activity, the annual volumes of which were estimated in preceding Parts, account for the major share of capital formation in any given year. But while the movement of a finished durable commodity to its ultimate holder or consumer necessarily represents a withdrawal from immediate consumption of some product of the producing, transporting, and distributing activity of the nation, it is not the only form assumed by such withdrawals from consumption into capital formation, the latter broadly defined.

First, all unfinished commodities produced during the year may be consumed in turning out finished products; in which case, measuring the volume of the latter will *ipso facto* take account of all the unfinished commodities produced. But the volume of unfinished commodities converted during the year into finished products is more probably either smaller or larger than the total output of unfinished commodities; as a result, stocks either increase or decrease. This diversion of unfinished commodities from immediate consumption into an addition to the stock of wealth at the disposal of the nation or draft from the existing stock of wealth into immediate consumption, not measured so far, must be taken into account as positive or negative capital formation.

Second, we must consider the stocks of finished commodities in the hands of business and other agencies, excluding the ultimate holders and users. In measuring the movement of finished commodities to their ultimate consumers, we included their value in the total of capital formation only when they reached these consumers, not at any earlier stage. But the amount of finished commodities produced during a given year is not necessarily equal to that reaching ultimate consumers. A manufacturer of finished commodities may sell a number of units smaller or larger than that produced by him; a wholesaler dealing in finished commodities may sell more or less than he purchases; and similar disparities may take place at any link of the producing and distributing system at which the entrepreneur takes possession of the commodities in which he deals. Consequently, finished commodities, regardless of their durability, may be diverted into stock at any link of the producing and distributing system, or may flow to ultimate consumers not from current production but from already existing stocks. This is the second group of changes in commodity stocks, which, like the changes in stocks of unfinished products, constitute a part of the process of capital formation.

Third, so far as the finished commodities in the hands of their ultimate consumers and holders are durable, their flow, as a process of capital formation, has already been taken into account in preceding Parts. But the finished perishable and semidurable commodities purchased by their ultimate consumers have not been considered as a possible element in capital formation, even though their annual flow has been estimated. When these commodities are consumed immediately, they play no part in capital formation. But most semidurable commodities cannot be consumed immediately, and even of perishable commodities there is always some stock on hand in the numerous household and other consuming units of the nation. If capital formation is interpreted broadly as *any* diversion from immediate consumption, and if in measuring current production we include in capital formation the flow of *durable* commodities alone, then changes in the stock of non-durable finished commodities in the hands of their ultimate consumers must be interpreted as withdrawals from current production into stock or drafts from stock into current consumption. They thus

represent a positive or negative item in the total of capital formation, broadly defined.

The flow of movable, durable finished commodities and the volume of construction, as measured above, represent elements in *gross* capital formation and cannot be interpreted as *net* capital formation until the value of existing durable goods consumed during the given time unit has been deducted. On the other hand, withdrawals of currently produced finished or unfinished commodities into stock cannot be measured properly except in a net form. All commodities pass into the stock of a business establishment, non-business agency, or the household at some stage in their circulation, and there would be little sense to any measurement of *gross* withdrawals into commodity stock. We must thus measure this movement only as a *net* result of withdrawals from current production or consumption into stock and of the flow from stock into current production or consumption. The item so obtained, net changes in commodity stocks, is, directly and without further adjustment, a part of the totals of both gross and net capital formation.

2 PROBLEMS OF STATISTICAL MEASUREMENT

As just indicated, we should attempt to measure at this point changes in stocks of: (a) unfinished commodities in all hands; (b) all finished commodities in the hands of their producers, distributors, and all other agencies (in circulation); (c) non-durable finished commodities in the hands of their ultimate recipients (at their destination). The measures of these changes should be available annually since 1919, in both constant and current prices, to make possible their addition to the other elements in the capital formation total. However, data by which we could measure completely changes in the various groups of commodity stocks indicated above are lacking. First, the available information refers, with one exception, only to the business system, including farmers; no data are reported for ultimate consumers or such non-business agencies as governmental units, philanthropic institutions, colleges. Hence, the estimates in the tables in this Part omit completely changes in stocks listed under (c) above, and that small portion of the changes listed under (a) that is accounted for by fluctuations in holdings of unfinished commodities in the hands of non-business agencies.

Moreover, for some segments of the business system the available data make possible measurement of commodity stocks in the hands of co porate units alone. In fields in which corporatio account for a major share of the activity, this ga is not appreciable and can be repaired through comparison of total activity in the field with tha accounted for by corporations. But in other field corporate units still do only a minor share of th business, and it is dangerous in these instance even though the total and corporate volumes c activity are known, to extrapolate the inventor estimates from such a basis. In these fields it wa considered preferable to confine the changes i commodity stocks to the corporate part of th field. Fortunately, the lack of non-corporate dat occurred in the branches of business activity leas important from the viewpoint of commodity hold ing. After the scope of measurement is thus nar rowed we must still utilize the available data i a way appropriate to our purpose. Changes in com modity stocks are important as indicating a ne withdrawal from current production or consump tion into stock, or a net transfer from stock int production or consumption. In order to measur these changes in each year of the period, we nee data on stocks in terms of commodity units, o still better, in terms of commodities evaluated a constant prices. But the comprehensive data avai able on commodity stocks are those on business in ventories, i.e., on stocks of commodities valued i terms of a fluctuating price level.

Consequently, the statistical analysis in Par VII is divided into three distinct stages. First, w proceed to measure as comprehensively as possibl inventories at the end of each year, in curren valuation. These estimates are detailed so far a possible, i.e., they distinguish specific groups c inventories. Two purposes are satisfied by this de tail: (a) it is desirable to classify inventories an changes in them by the durability of the commod ties, on a basis roughly parallel to that used in th analysis of the flow of finished commodities; (b since the subsequent stages of the analysis in thi Part involve a conversion from a changing valua tion base to a constant price base and then back t a current price base, the segregation of severa groups of inventories, in current valuation, make possible, provided complementary price series ar found, a more accurate adjustment for the pric factor.

Having measured inventories at the end of eac year for as many groups as can be distinguished we next prepare indexes that reflect changes i the valuation of inventories from one year-end t the next. With such indexes computed (using th

price level in 1929 as 100), it is possible to express the inventories at the end of each year in terms of a single, 1929 price level. This converts the estimates obtained at the end of stage (1) into measures of the commodity volume of inventories, each commodity being weighted by its 1929 price. It is then possible by subtraction to obtain annual changes in inventories in 1929 prices. These changes are directly a part of gross and net capital formation, in 1929 prices.

In the third stage of the analysis, changes in inventories in 1929 prices are translated back into current prices. For this purpose another set of price indexes is computed, differing from that used in stage (2) in that it presents average prices for each year as a whole while the latter presents annually only those prices which determined the valuation of inventories as they are given at the year-end in the balance sheets of the business units. By applying this new set of price indexes, we obtain changes in inventories in current prices, an item which then becomes directly a part of capital formation, in current prices.

In all stages, the value of inventories is expressed at the cost to the particular business units that hold them. Thus, the estimates of changes in inventories, like the estimates of the flow of commodities to ultimate consumers and holders, measure capital formation at the cost to those individuals and agencies who, at the given point of time, are the recipients and possessors of the particular items of the stock of capital goods.

3 ANNUAL ESTIMATES OF BUSINESS INVENTORIES IN CURRENT VALUATION

The main body of data relating to inventories is provided in corporate balance sheets. The most comprehensive tabulation of such balance sheets, by industrial branches, has been published annually, since 1926, in *Statistics of Income*. With this body of data as a nucleus, the measurement of business inventories annually for the entire period under study involves two problems: first, the derivation of comparable data on corporate inventories for the years prior to 1926; second, the estimation of inventories held by the unincorporated establishments in each industrial branch. The second problem is particularly acute in two industrial divisions in which inventories are substantial: farming and the distributive trades. As a result, the statistical analysis by which business inventories in current valuation are derived has two parts: (a) estimating total inventories for those branches in which corporations are predominant, or in which inventories held by unincorporated business units cannot be estimated at all; (b) estimating inventories in farming and in distributive trades, in both of which fields corporate data are of little use for the purpose at hand.

a *Estimates based on corporate data*

For all industrial branches for which corporate inventories are given in *Statistics of Income* since 1926, the first task was to provide comparable figures prior to 1926, i.e., for the eight years from 1918 through 1925. This task was carried through by the use of sample data, and with the help of the comprehensive tabulation of corporate inventories based on the capital stock tax returns available for the end of 1923 and 1924. The samples are those of R. C. Epstein for manufacturing and trading corporations for 1924–28, and an original sample collected from Moody's Manuals for 1918 through 1926. The use of these samples, as well as of additional information for some of the public utility branches, is described in detail in Notes A, B, and C to Table VII–1. The table itself presents the results of these computations, viz., inventories held by corporations at the end of each year, from 1918 through 1933, for ten major industrial branches of which one, manufacturing, is subdivided into ten groups.

Since Table VII–1 is basic for all the branches listed in it, except construction and trade, we comment here upon its reliability. Since 1926, and perhaps back to 1923, the grand totals are probably of a high order of accuracy. Most of the few corporations that fail to submit balance sheets are small; consequently, their share of activity and their presumptive share of total inventories are quite minor, and little error arises from applying a raising ratio to account for them. Similarly, there is little reason to doubt that inventories as reported by corporations include no appreciable share of what we designate as producers' finished durable commodities (which, for the purposes of our analysis, should not be included). Producers' finished durable commodities are probably fully reported under another category in the balance sheets, viz., capital assets (land, buildings, equipment less depreciation).[1]

The accuracy, or rather comparability from year to year, of the corporate inventories for the several industrial branches is less assured. Each

[1] This is true with the possible exception of durable equipment of low unit value, such as tools, which may be carried on an inventory basis. The amount of such equipment is, however, relatively small.

corporation is classified in *Statistics of Income* on the basis of the activity that accounts for the major share of its income; thus a corporation engaged in several lines of activity may be placed in one industrial division in one year, and in another the next year. Moreover, corporations have been classified among the several industrial divisions with progressively greater completeness; the decline since 1923 in the inventories in the group 'nature of business not specified' is largely a reflection of this tendency. Nevertheless, in a rough classification of the corporations into large groups, such as those dealing with perishable, semidurable, and durable commodities, the separate totals are not likely to be greatly affected by inconsistencies in the industrial classification in *Statistics of Income*.

The estimates in Table VII–1 for years prior to 1924, and for some branches prior to 1926, rest largely upon an application to the gross income as shown in *Statistics of Income* of indexes of inventory-gross income ratios derived from samples of corporations whose balance sheets were published in Moody's Manuals. In collecting these samples an attempt was made to cover all corporations whose balance sheets and income accounts contained, for consecutive pairs of years, both items needed in the computation of the inventory-gross income ratio. In percentages of gross income of all corporations in the comparable industrial branches, the samples are none too adequate (see Note C to Table VII–1), and there is, of course, a bias since most of the corporations reported in Moody's are large. But the absolute size of the sample is substantial; and it is difficult to see any grounds for expecting the inventory-income ratio in large corporations to vary over time in a manner appreciably different from the ratio for all corporations in the same field of activity.

The next task was to supplement the estimates of corporate inventories for each year-end, 1918–33, by estimates of inventories of unincorporated business units in the same fields. For some of the industrial branches, such as transportation and other public utilities, unincorporated enterprises are of little importance, and no data are available for estimating their inventories. In others, such as service and finance, non-corporate units are likely to be of some importance, but again there appears to be no way to estimate inventories held by them. For these three industrial branches corporate inventories were, therefore, the only ones taken into account. For construction, a field in which non-corporate units are of major importance, a detailed estimate of inventories is presented in Part VI; for farmers and trade a special estimate of total inventories is presented in Tables VII–4 and VII–5. This leaves two important fields, mining and manufacturing, in which unincorporated establishments are relatively unimportant but for which estimates of their inventories can easily be made (Table VII–2). The amounts are relatively small, and the basis of estimation is fairly reasonable as far as the absolute values are concerned, if none too reliable as a measure of year-to-year changes in non-corporate inventories proper (see Note A to Table VII–2). However, since no distinction is made in the subsequent totals between corporate and non-corporate business, errors in the estimates in Table VII–2 are likely to have but small effect on the final totals.

Before leaving this part of the analysis, we note briefly the refining of the inventory estimates for mining, i.e., the segregation of four groups within this branch (see Table VII–3). The purpose of this segregation is to make it possible to classify mining inventories into three large classes according to durability. The basis of the refinement is a special sample of corporations, again derived from Moody's Manuals (see Note A to Table VII–3). The global estimates for mining are, however, still as determined in Tables VII–1 and VII–2.

b *Estimates of inventories on farms and in distributive trades*

Since corporations play no significant part in farming, none of the tables discussed so far contains any reference to inventories on farms. Their measurement is, however, of some importance. Because of the seasonal character of crop production and the largely non-seasonal character of demand for farm products, inventories on farms at the end of each calendar year are likely to be large. And with the fluctuations in the annual volume of crops, changes in the year-end inventories on farms may easily be appreciable, even when compared with inventory changes in other segments of the nation's business system.

The estimate of farm inventories is made possible by data compiled by the Department of Agriculture. These data are complete annually for livestock, but for crops and livestock products the only continuous series are those for farm stocks of wheat, corn, and oats. These three crop series and the reports on the number and price of livestock on farms form the basic material for the farm inventory estimates summarized in Table

VII–4 and presented in detail in Notes A through G to Table VII–4.

The farm value of wheat, corn, and oats accounts on the average for only 27 per cent of the farm value of all products, but the coverage represented in our estimates is more adequate than this ratio might seem to indicate. A large share of the value of livestock products and of other crops, such as milk and butter, and most fruits and vegetables, represents the money equivalent of a relatively perishable group of commodities, the stock of which held on farms is likely to be very small. Moreover, farms hold perhaps a smaller share of other durable crops, such as cotton, than of wheat, corn, or oats. It was, therefore, considered inadvisable to raise the farm stocks of wheat, corn, and oats by the ratio that the value of these products constituted of total farm value of all products exclusive of livestock. The estimates are admittedly incomplete, but they undoubtedly cover the stocks of the most important products of which a large quantity is likely to be held as inventory.

The only correction introduced, for our purposes, into the Department of Agriculture estimates of livestock on farms was to exclude that livestock which, having been treated as a producers' durable commodity, has already been taken into account in Table V–9.

The estimate of distributive inventories involves a more complicated procedure than that followed for stocks held by farmers or for inventories in the hands of business units in the other industrial branches. The main steps in deriving this estimate have already been described in the preface to Part V, in the comments on finished inventories held in the distributive trades. Estimates of *total* distributive inventories are derived by a similar sequence of steps: (1) the establishment of the first approximation to the volume of sales in each year of the period; (2) the approximation of inventory-sales ratios for each year of the period; (3) the successive application of the inventory-sales ratios to the approximations of the volume of sales, resulting in the final estimate of inventories, in current valuation. In all these calculations we distinguish wholesale from retail trade; and within each branch of trade, perishable, semidurable, and durable commodities. Unfinished commodities are classified according to the characteristics of the finished products into which they enter—the classification being based roughly upon the preponderant channels of the unfinished commodity's utilization.

The derivation of the first approximation to the volume of sales is set forth in Note A to Table VII–5. This procedure concerns only the three branches of wholesale trade, since it is only in wholesale trade that unfinished commodities account for a substantial portion of sales. In retail trade the bulk of unfinished commodities sold are construction materials, whose inventories were estimated in Part VI. These measured, unfinished commodities sold by retailers (fertilizers, farm supplies, etc.) are so small that it was considered sufficient to include them in the 1929 totals and to extrapolate the first approximation of *total* sales for other years by the estimates of retail sales of finished commodities and of construction materials, already given in Parts V and VI.

In estimating the first approximation to total sales by wholesalers the most important data are on the output or sales by the various industries that produce the commodities handled by wholesalers. For the years before 1929 the basic assumption here, as elsewhere, is that the share of output or of producers' sales handled by wholesalers was at the level indicated for 1929. We discussed in the Preface to Part V the probable effects of this assumption upon the final estimates. We need note here only that the errors arising from this assumption are likely to be greater for the inventories of wholesale and of retail trade separately than for the combined total of distributive inventories. After 1929, the estimates were adjusted to conform with the 1933 Census data.

In deriving the first approximation to sales, the value of output or of producers' sales is modified by the addition of varying transportation charges and distributive mark-ups. The procedures by which these two sets of measures were obtained, set forth in Notes B and C to Table VII–5, are similar to those described in Part V, utilizing as they do the information on freight charges on steam railroads and our general summary of the movement of distributive margins in the survey in Part IV. The only difference is that here the data on freight charges include unfinished as well as finished commodities, and that in deriving the distributive mark-ups for 1929, account is taken of *all* branches of wholesale trade, including those dealing in unfinished commodities.

The derivation of the inventory-sales ratios is described in Notes D and E to Table VII–5. The basic data, those for 1929 and 1933, are provided by the Census of Wholesale and of Retail Trade and the Census of American Business; and the ratios derived for 1929 and 1933 from these data

are extrapolated for the other years in the period by indexes based upon various samples, largely the same as those utilized for finished inventories in Part V.

The first approximation to sales and the inventory-sales ratios determined, Table VII–5 presents the successive approximations to sales and inventories, repeating the procedure until the change in the first difference in the inventories produced by a given approximation averages less than 10 per cent of the set of first differences produced by the preceding approximation. This criterion is satisfied by a few approximations (from two to three) for those branches of trade which have to be estimated in Table VII–5.[2]

4 BUSINESS INVENTORIES IN CURRENT VALUATION AND THE CORRECTION FOR PRICE CHANGES

The various calculations and approximations described briefly above yield the final estimate of business inventories in current valuation by their holders for the different major and minor divisions of the economic system (Table VII–6). With reference to these final and inclusive results, the following observations may be made:

(a) They fall short of measuring the total inventories that would have been included were all the pertinent data available. They omit inventories in the hands of governmental and other agencies that do not report to the Bureau of Internal Revenue; stocks in the hands of individual and partnership firms in all fields except agriculture, mining, manufacturing, construction and trade; stocks of all commodities on farms except livestock, wheat, corn, and oats; and stocks of perishable and semidurable commodities in the hands of ultimate consumers. The magnitude of these missing items cannot be evaluated even roughly, but some, e.g., the last-mentioned, are likely to be appreciable, and subject to changes whose size would be significant as compared with changes in the inventory totals in Table VII–6.

(b) On the other hand, there is a duplication in the totals in Table VII–6. Construction stocks include inventories in the hands of enterprises that consume construction materials, i.e., not only construction firms but also business and other enterprises that carry on construction work on force account. Construction materials held by these enterprises have already been covered under their inventories in our estimates, and hence their inclusion in the construction stocks represents duplication. The extent of duplication must, however, be relatively small. Construction stocks range from 0.9 to 1.6 billion dollars. Of these, at least one-half must be held by construction companies proper, and hence represent no duplication. A substantial portion of the rest must be held by governmental and other non-profit agencies, and by individual and partnership firms in the service field, whose inventories have not been included anywhere in Table VII–6. Hence at its maximum, the extent of duplication would be from 0.3 to 0.5 billion dollars, out of a total ranging from 20 to 36 billion dollars. Since there was no way of establishing the precise amount of duplication we decided to leave it in the table, on the ground that its effects on *net changes* in inventories, the measure most important in the estimate of capital formation, would be insignificant.

(c) It may be observed from Table VII–6 that the classification into perishable, semidurable, and durable commodities is highly approximate, having been carried through by large groups. Thus, all inventories held by coal mines (presumably mostly coal) are listed under perishable, although obviously a substantial portion of coal is consumed in the production of semidurable and durable commodities; and the same may be true of inventories held by manufacturing firms in the chemical and allied substances group. This, as do the assumptions made in deriving the inventories separately for wholesale and for retail trade, renders the more specific estimates subject to a wider range of relative error than is likely to characterize the more inclusive totals.

The measure of total inventories in current valuation, interesting as it is in its own right, is inadequate for the purpose of measuring changes in inventories as an element in gross and net capital formation. Such changes can be interpreted as constituent elements of capital formation only if they represent a net withdrawal of commodities into stocks or a net flow of commodities from stocks into consumption. But such commodity flow cannot be gauged from inventories measured in current valuation, since their net differences reflect changes not only in quantity volume but also in the valuation per commodity unit. Thus, a decline in inventories taken at their current valuation may mean an increase in the quantity of units held that was more than compensated by a decline in the valuation per unit. In order to derive a proper measure of the withdrawal of commodities into stock or their draft from stock into consump-

[2] See footnote 2, Preface to Part V.

ion, it is necessary to disentangle these two sources of change in inventories in current valuation.

In short, we must translate inventories to a constant price level, thus rendering the estimates properly weighted measures of the commodity volumes. Such translation to 1929 price levels was already carried through in Part V for stocks of finished commodities held by distributors. The more inclusive total of all inventories is now similarly translated. Indexes that are assumed to reflect changes in valuation for the different inventory groups have been compiled from the Bureau of Labor Statistics wholesale price quotations. Prices have been obtained for both current market and cost bases of valuation, the date of the cost basis being roughly determined with the help of information on stock-turnover ratios. The indexes are presented in Table VII–7, and the exact mode of their derivation given in Note A to that table.

For finished commodities, in Part V, the assumptions on which inventories were translated to a constant price base were that inventories were valued at cost or market, whichever was lower, and that stock-turnover ratios indicated correctly the approximate age of the inventories at the end of the year. In the present calculations, in which the analysis refers to total inventories, the magnitude of the change measured made it advisable to experiment with various assumptions. This experimentation resulted in three series of inventories in terms of the 1929 price level: (1) The first series is based on exactly the same assumptions that were made in Part V, namely, that the inventories are reported in terms of cost or market, whichever is lower, and that the stock-turnover ratios indicate correctly the average age of the stock. (2) The second is based on the assumption that while the inventories are reported on the basis of cost or market, whichever is lower, the stock-turnover ratios obtained by comparing inventories at the end of the year with sales during the year tend to underestimate the average age of the stock. This is true if inventories at the end of the year are, because of seasonal factors, lower than during the year; and if a substantial period elapses between the date of ordering the additions to inventories and their arrival. In the latter case the cost of inventories would be presumably the price at the date of ordering rather than at the date of arrival. (3) The third series of inventory estimates is based on the assumptions that the age of inventories is indicated correctly by the comparison of year-end inventories and annual sales, and that the valuation of the inventories is exclusively on a cost basis.

The diversity of these assumptions indicates the difficulty of a precise estimate of inventory changes. Whatever data are available on the methods by which business units report inventories seem to suggest that a preponderant number use cost or market, whichever is lower (see *Summary of Business Conditions,* American Telephone and Telegraph Co., April 1934 and *Prevailing Practices in Inventory Valuation,* National Industrial Conference Board, February 1938). Nevertheless, many concerns use exclusively the cost valuation basis. It is almost impossible to say whether the estimated age of the inventories based on a comparison of year-end inventories with annual sales is too low. In modifying this assumption, we have allowed, for semidurable and durable goods, an average age of six months, thus taking the average price for the year to represent the cost of the inventories; for perishable goods, an average age of three months, thus taking the average price for the second half of the year to represent the cost for the year-end inventories. Owing to lack of data we were unable properly to combine the different assumptions; accordingly we present three estimates of inventories in 1929 prices (Table VII–8).

In addition to the limitations of our information which forced the use of diverse assumptions, other qualifications characterize the estimates resulting from the use of price data in order to pass from inventories in current valuations to inventories at the 1929 price level.

First, the use of any group price indexes results in an incomplete correction, if there is any divergence in the direction of the movement of the component prices and if inventories are valued at cost or market, whichever is lower. For example, if the group consists of two commodity prices, one of which declines 5 per cent and the other rises 5 per cent, the group average showing no change, the application of the group price index to the inventories in their current valuation will obviously result in an unsatisfactory correction; for the commodity that rose in price will be entered in the inventory report at cost, while the commodity that declined in price will be entered at market, the average decline in the inventory valuation index being 2½ per cent (if the two commodities account each for one-half of the inventory). The group price index that would be used shows, however, no change in the current valuation level.

Second, there is the general difficulty of obtain-

ing adequate and inclusive price indexes, i.e., indexes reflecting prices of the same commodities and in the same proportions as are represented in the inventories within the various divisions established in Tables VII–6 and VII–8. How completely this difficulty was overcome can be ascertained only from a careful study of Note A to Table VII–7; and even then a precise answer cannot be given, for the sufficient reason that data on the exact commodity composition of inventories within the various groups are not available.

Third, we have been using prices with the same general characteristics, i.e., based partly upon producers', partly upon wholesalers' quotations, to adjust the valuation of inventories in all hands, whether held by producers, wholesalers, retailers, or ultimate users. This practice appears contradictory to our recognition in other parts of the study of the variation in relative transportation costs and distributive mark-ups; and such contradiction cannot be denied. However, even if we were to assume that such variations apply fully to the differences between inventory at cost or replacement value at the different stages of the distributive system, the error would still be relatively small because of the limited variation in distributive and transportation charges. But in addition other factors reduce materially the error likely to inhere in this procedure. Retailers and industrial consumers (the inventory estimates cover no other ultimate consumers) do not buy all their inventory supplies from wholesalers, and, of course, they buy very little from retailers; as a result, the importance of variations in distributive mark-ups is greatly reduced. Furthermore, the distributive mark-ups studied above were computed so as to reflect changes on the basis of inventories in current valuation; they do not, therefore, portray accurately the current disparities in the movement of producers', wholesalers' and retailers' prices. The distributive mark-ups studied above were obtained by adding to beginning inventory, in current valuation, value of purchases; subtracting the end inventory, at its current valuation; and comparing the residual with the value of sales. Hence, when current valuation of inventories declines, the decline in distributive mark-ups, if it occurs, is larger than the decline in the disparity between cost and sales prices; and when current valuation of inventories rises, the rise in distributive mark-ups, if it occurs, is larger than the rise in the disparity between cost and sales prices. It is significant that the two most drastic changes in distributive mark-ups over the period, the decline from 1919 to 1920, and the rise from 1932 to 1933, were accompanied by changes in the current valuation of inventories, the former by a decline from the end of 1919 to the end of 1920, and the latter by a rise from the end of 1932 to the end of 1933. This suggests that the variation in the disparities between prices at the different stages of the distributive system is more limited than that indicated by changes in distributive mark-ups as measured above. Thus, for the several reasons suggested, the application of identical price indexes to the same commodity inventories at different stages of the distributive system is not likely to cause large errors.

The emphasis on the limitations of the estimates should not lead to inferences that would deprive them of their proper value. Their broad implications stand in spite of their defects, which are, on the whole, minor. These defects are emphasized in the hope of preventing a utilization of the estimates based upon unimportant differences or changes that they may display, and to indicate the directions in which they could be improved when more and better data become available.

5 CHANGES IN BUSINESS INVENTORIES, IN CURRENT AND 1929 PRICES

With the inventories measured at the 1929 price level it is possible to obtain the changes in each year by direct subtraction (Table VII–9). These changes are a measure of that particular element in gross and net capital formation in 1929 prices and are again presented in the three variants differentiated in Table VII–8 that result from different assumptions concerning the basis of current inventory valuation and the average age of the year-end inventories.

In order to obtain the same constituent of capital formation in current prices, we must translate the changes in Table VII–9 back into terms of currently fluctuating price levels. We multiply them by price indexes for the corresponding groups, each index expressing the *average* level of prices for each year as a relative of the 1929 level (Table VII–7). The results in Table VII–10 show the changes in inventories in current prices, once more in the three variants of Tables VII–8 and VII–9.

Most of the price adjustments of inventories from current valuation to that of 1929, and back from changes in 1929 prices to those in current prices, are made with the minor groups in Table VII–6 as units; and sometimes, even for subcomponents of these minor groups (e.g., for livestock

This explains the reversal of the sign of change that sometimes occurs in the translation of changes from the 1929 to the current price level (compare, for example, changes during 1921 for all perishable commodities, in 1929 and in current prices). If a given group includes two units for which the price adjustment is carried through separately and if, in 1929 prices, we obtain in one a rise of 5 and in the other a decline of 4, the net change for the group is + 1. But if the price relative of the first item, in terms of the 1929 price level, is 100, and of the other item, 150, then the changes in current prices are, for the first item, + 5, for the second, — 6, yielding a net change in inventories for the group as a whole, in current prices, of — 1. In general, a reversal of the sign of change from Table VII–9 to Table VII–10 is possible, if the components of a given inventory group for which separate price adjustments are carried through move in different directions, when measured in 1929 price levels; and also display a difference in their current prices, when expressed as relatives of the 1929 price level.

The results in Tables VII–6 to VII–10 suggest two sets of comparisons. First, we can compare the estimates of inventory changes in current prices that result from the application of the three sets of assumptions. Second, we can compare each of these three estimates with the changes in inventories in current valuation, namely, with the changes in inventories as they are taken at the changing valuation of each successive year-end.

It will be seen from Table VII–a that when it is assumed that inventories are valued at cost or market, whichever is lower, the different assumptions concerning the age of the inventories account for a relatively small variation in the two estimates of inventory changes in current prices. The largest absolute difference is in 1919, 1920, and 1933, for which years the average discrepancy between the two estimates runs to about 750 million dollars. The reason for the appearance of such differences in these years lies in the conspicuous reversals in the movement of the price level; but even under such conditions the relative difference of the two estimates is not appreciable. By contrast, when the age of inventories is based on the same assumptions, but current valuation of inventories is assumed to be based on cost rather than on cost or market, whichever is lower, the resulting set of estimates differs rather strikingly from the other two in several years (especially 1920, 1921, 1922, 1927, 1930, and 1933). In view of the tendency of most enterprises to report inventories at cost or market, whichever is lower, the choice is confined to the estimates in lines 1 and 2 of Table VII–a. Of these estimates we have selected the first, namely, that based on the age of the inventories indicated by a comparison of year-end inventories and annual sales. The reason for this choice was that in this variant we have a precise indication of the approximate age of inventories, while in the second variant we have a plausible assumption but one that cannot be supported by specific data.

We may now compare the inventory changes in current prices with changes in inventories taken at their current valuation. The differences between the two are quite striking. They are especially great in years like 1919 through 1922, 1926, and 1930 through 1933, all years characterized by a very marked movement of prices. Obviously, in all years save those in which price levels are constant, the direct comparison of year-end inventories at their current valuation gives a misleading impression of the actual net movement of commodities to and from inventories.

When a similar comparison is made for the three major commodity groups, the differences between inventory changes in current prices and changes in inventories taken at their current valuation are much more conspicuous for the perishable and semidurable groups than for the durable.

	PERISHABLE	SEMIDURABLE	DURABLE
Number of disagreements in sign of change	6	9	3
Average difference of the two series (signs disregarded, millions of dollars)	1,433	859	627
Average difference as percentage of average volume in the two series	135.4	155.2	57.8

The obvious explanation is that the perishable and the semidurable inventories contain important parts which reflect much of the uncontrollable production of agriculture and little of the effect of semi-monopolistic control of the markets that characterizes durable commodities. Perishable and semidurable inventories represent largely commodities of inelastic demand and uncontrollable, competitive supply, which are subject to price changes relatively more violent than those characterizing prices in other commodity classes. Consequently, the basic adjustment of perishable and semidurable inventories for fluctuations in current valuation yields changes which, even when converted back into current price levels, differ widely from the successive changes in these inventories taken at their current valuation. On the contrary, the durable commodities, whose quan-

Table VII-a

COMPARISON OF INVENTORY CHANGES IN CURRENT PRICES WITH CHANGES IN INVENTORIES IN CURRENT VALUATIONS, 1919-1933

(data from Tables VII-10 and VII-6)

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
I Inventory changes in current prices based on															
1 Cost or market, whichever lower	+4,132	+7,375	+54	+534	+3,016	-917	+1,788	+1,586	+464	-321	+2,414	-1,128	-1,375	-2,461	-1,129
2 Cost or market, whichever lower, second variation	+4,755	+6,284	+169	+864	+2,592	-943	+1,789	+1,523	+686	-477	+2,339	-1,127	-1,355	-2,474	-511
3 Cost only	+4,606	+1,512	+2,629	+1,503	+2,802	-736	+1,464	+1,272	+964	-392	+2,073	-1,848	-1,164	-2,336	-553
II Changes in inventories in current valuations	+5,963	-260	-8,046	+2,289	+3,156	-178	+1,770	-210	-144	-146	+1,590	-6,686	-5,999	-4,734	+1,904
III Differences between II and I-1	+1,831	-7,635	-8,100	+1,755	+140	+739	-18	-1,796	-608	+175	-824	-5,558	-4,624	-2,273	+3,033

ty output is sensitive to business cycles and whose rices seem to reveal a low variability over the time oans of business cycles, show no such striking iscrepancies between the inventory changes and ie successive differences in inventories taken at ieir current valuation.

6 CHANGES IN STOCKS OF MONETARY METALS

o far as gold and silver are used for industrial urposes and are in the hands of business enterrises, their value was included either in that of nished commodities at their destination or in ie inventories of business enterprises. For this art of the supply of monetary metals no special roblem arises and no separate treatment is necssary. But the bulk of gold and silver produced i or flowing to this country from the outside is ither held in stock by banks and the government nd is not recorded among the inventories; or is oined into money, a commodity which, while duable, was not included under the production and ow of durable commodities already measured.

The simplest way of taking account of this item to treat the amount of gold and silver in the ands of banks and other credit institutions, whether in bullion or in coins, as stock in circulaon; and to classify likewise the amount of metal eld in the form of coins in the hands of ultimate onsumers. This treatment obliterates the possible istinction between gold and silver in coins as a nished durable commodity, and gold and silver i bullion as an unfinished commodity. But this istinction would hardly be significant for our urposes. Monetary metals held in bullion, so long s the holders are banks and other credit institutons and not industrial consumers, may really be eated as finished so far as they are used there in ie ultimate fashion, viz., as backing for paper ioney circulation. And the cost of transforming ie bullion into coins is so insignificant that the effort expended in producing coins from the already available metal may readily be disregarded.

For this reason the changes in the stocks of monetary metals are calculated in Table VII–11 both for amounts held in bullion and for those embodied in coin. The valuation problem is somewhat different for gold than for silver. The price of the former was maintained throughout 1919–33 at a constant level; and because of the provision of free coinage the market value of the metal contents of the gold coin was close to the nominal value of the coin. Owing to the maintenance of a constant price level the changes in the stock of gold in current and 1929 prices are identical, and in adding the stock of coins to that of bullion, the former could be taken at their nominal value. Neither stability of market price nor identity of market value of metal contents with nominal value of the coin characterized silver. Consequently, account had to be taken of the changing market value and an attempt made to evaluate the market value of silver entering new coins.

Because the conditions governing changes in stocks of monetary metals and stocks of other commodities are so substantially different, it was considered inadvisable to strike a total that would include changes in inventories covered in both Tables VII–10 and VII–11.

The estimates in Table VII–11 do not include the amounts of baser metals (copper, nickel, etc.) that are used for the production of coins of small denominations. These amounts represent a use of unfinished commodities in the production of durable commodities which, strictly speaking, should be taken into account in a measurement of capital formation. But the values were small and their measurement laborious; and it seemed permissible to disregard them in arriving at the total of either finished durable commodities at their destination or of changes in stocks of commodities in circulation.

Table VII—1

INVENTORIES OF CORPORATIONS, ALL BRANCHES EXCEPT AGRICULTURE, CURRENT VALUATION, 1918–1933

The inventories held by corporations, as estimated in this table, are measured by different procedures for the various years in the period covered. Notes A, B and C following the table describe in detail the data and methods used in deriving the estimates.

A discussion of the table will be found in the Preface to Part VII, Section 3a.

Table VII-I

INVENTORIES OF CORPORATIONS, ALL BRANCHES EXCEPT AGRICULTURE, CURRENT VALUATION, END OF YEAR

(millions of dollars)

Branches	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Mining and quarrying	513.6	950.5	1,028.9	711.0	567.3	683.3	753.9	699.9	645.5	691.3	523.7	704.6	451.1	481.1	394.0	415.9
Manufacturing	8,994.0	11,219.2	11,885.6	9,405.1	10,678.1	12,248.5	11,903.1	12,658.3	12,451,7	12,048.7	12,177.7	12,784.9	11,304.8	9,119.9	7,353.6	8,140.9
Food, beverages and tobacco	1,249.9	1,971.5	1,508.7	959.8	1,088.7	1,202.2	1,440.1	1,589.8	1,729.0	1,845.8	1,908.0	1,966.6	1,717.8	1,387.8	1,193.4	1,416.9
Textiles and textile products	1,386.4	1,592.2	1,495.2	1,638.7	1,958.3	2,025.6	2,028.6	2,036.8	1,801.7	1,901.6	1,902.0	1,839.4	1,376.5	1,003.9	789.0	1,096.5
Leather and leather products	516.6	691.4	608.8	511.7	503.6	476.9	397.8	370.1	408.9	433.2	449.8	414.6	366.6	288.1	210.3	257.3
Rubber and related products	240.3	293.6	319.5	169.9	205.6	228.1	220.4	319.6	343.9	332.9	297.2	285.3	232.3	163.7	131.9	161.3
Lumber and wood products	496.8	623.2	781.0	523.0	551.5	638.3	669.6	715.9	787.9	757.5	723.5	721.7	652.7	457.9	340.8	360.2
Paper, pulp and products, and printing and publishing	356.3	367.8	558.8	505.0	514.7	480.1	522.0	487.5	511.9	527.1	519.7	554.8	518.1	444.1	352.2	375.0
Chemicals and allied substances	884.0	1,089.1	1,365.7	1,005.7	1,561.1	1,579.6	1,422.7	1,670.2	1,862.4	1,477.2	1,650.9	1,862.6	1,846.4	1,657.0	1,351.2	1,363.2
Stone, clay, glass and related products	154.4	184.0	278.4	242.3	242.7	256.6	259.8	276.0	317.2	325.9	320.2	336.9	336.5	273.5	224.6	216.6
Metal products and processes	2,805.8	3,240.2	3,762.0	2,985.0	2,822.5	3,919.5	4,226.5	4,599.3	4,077.5	3,926.3	3,838.5	4,226.0	3,766.0	3,065.2	2,455.5	2,589.9
Miscellaneous manufacturing	903.5	1,166.2	1,207.5	864.0	1,238.4	1,441.6	715.6	593.1	611.3	521.2	567.9	577.0	491.9	378.7	304.7	304.0
Construction	216.9	196.3	275.9	211.9	166.0	198.4	203.9	213.9	287.2	321.1	276.5	320.2	260.9	189.5	142.5	129.3
Trade	4,414.9	4,275.1	5,826.6	4,040.3	4,220.2	4,586.1	4,831.2	5,389.4	5,779.6	5,844.7	6,131.5	6,083.8	5,237.1	4,136.7	3,449.8	3,902.7
Transportation and public utilities	775.4	741.2	1,146.6	1,018.9	868.6	1,081.2	939.0	905.9	950.3	1,033.4	1,008.4	1,129.0	981.8	896.7	748.8	778.6
Service	63.2	84.7	112.5	103.3	128.7	134.0	138.7	154.2	194.0	186.9	187.6	201.8	254.6	209.7	152.3	147.7
Finance	250.8	295.2	337.4	254.9	277.5	314.3	443.9	687.4	1,003.5	1,160.5	733.1	1,000.9	501.6	271.0	162.0	153.3
Nature of business not given	70.8	83.4	95.3	72.0	78.4	88.7	104.4	40.4	14.7	23.6	17.5	9.6	5.8	7.4	8.5	1.5
Total	15,353.6	17,845.6	20,708.8	15,817.4	16,993.8	19,334.5	19,318.1	20,749.4	21,327.4	21,310.2	21,056.0	22,234.8	18,997.7	15,312.0	12,411.5	13,669.9

Note A to Table VII—1

DERIVATION OF CORPORATE INVENTORIES, 1926–1933

Annual data on the value of corporate inventories by major industrial groups are reported in *Statistics of Income* for 1926 through 1933. The data represent, however, only those corporations that submit balance sheets. The adjustment to include all corporations was made on the basis of figures that appeared for the first time in 1931. In that year, and later years, it was possible to obtain the values of cost of goods sold,[1] both for corporations submitting balance sheets and for all corporations. Raising ratios were derived from these figures, and were then applied to the inventory data as reported. Prior to 1931, the 1931 ratios were utilized.

In the following table are shown the raising ratios for 1931, 1932 and 1933. It will be noted that the adjustments based on these ratios were small. The effect of any error involved by using the figures for cost of goods can thus be assumed to be almost insignificant, especially since the relationship between the movements of cost of goods and inventories is fairly close.

[1] In four groups: transportation and other public utilities, service, finance, and nature of business not given, gross profit figures had to be used.

RATIO OF COST OF GOODS SOLD BY ALL CORPORATIONS TO THAT BY CORPORATIONS REPORTING INVENTORIES

BRANCHES	RATIOS		
	1931	*1932*	*1933*
Mining and quarrying	1.0154	1.0049	1.0126
Manufacturing			
Food, beverages and tobacco	1.0120	1.0068	1.0082
Textiles and textile products	1.0227	1.0107	1.0096
Leather and leather products	1.0275	1.0101	1.0085
Rubber and related products	1.0056	1.0002	1.0051
Lumber and wood products	1.0232	1.0091	1.0102
Paper, pulp and products	1.0147	1.0098	1.0093
Printing and publishing	1.0248	1.0197	1.0177
Chemicals and allied substances	1.0086	1.0031	1.0086
Stone, clay, glass, and related products	1.0184	1.0124	1.0071
Metal products and processes	1.0066	1.0033	1.0028
Miscellaneous manufacturing	1.0315	1.0071	1.0102
Construction	1.0505	1.0325	1.0376
Trade	1.0379	1.0242	1.0246
Transportation and public utilities [1]	1.0089	1.0495	1.0508
Service [1]	1.0568	1.0473	1.0599
Finance [1]	1.0866	1.0751	1.0890
Nature of business not given [1]	1.3750	1.9361	1.3990

[1] Ratio derived from comparison of gross profit figures.

Note B to Table VII—1

INVENTORY ESTIMATES OF MANUFACTURING AND TRADE CORPORATIONS FOR 1924 AND 1925

Prior to 1926 inventory data were not reported in *Statistics of Income* except for two years, 1923 and 1924, for which figures based on capital stock returns were presented. Examination of these figures indicated a lack of comparability of the separate industrial branches with those distinguished since 1926. It was therefore decided to accept the figures only for total inventories as reported in 1923 and 1924, and to make estimates for the separate branches on the basis of sample data.

This note deals only with 1924 and 1925 because of the availability of a special sample in those two years. From the *Source-Book for the Study of Industrial Profits,* by Ralph C. Epstein in collaboration with Florence M. Clark, it was possible to obtain data on sales and inventories for various branches of manufacturing and trade: 2,046 identical manufacturing corporations and 664 identical trading corporations. The manufacturing corporations are divided among 74 minor groups; the trading corporations are classified into wholesale and retail trade. The following summary table indicates the minor groups selected as being most comparable with the industrial branches shown in *Statistics of Income.* Figures on the number of corporations and the volume of sales and inventories can be readily obtained from Tables 1, 7, 16 and 22 of the *Source-Book.*

INDUSTRIAL BRANCH	COMPARABLE EPSTEIN MINOR GROUPS
Manufacturing	
Food, beverages and tobacco	Bakery products; flour, feed and grist mills; confectionery; package food incl. cereals, breakfast foods, flour and coffee; dairying and dairy products; canned goods, condiments, flavoring extracts; meat packing; cane sugar; beverages (non-alcoholic); tobacco; misc. food products, incl. butter substitutes, ice cream, ice, etc.
Textiles and textile products	Cotton spinning (coarse and medium yarns); cotton converting, incl. thread and tape; cotton weaving; weaving woolens; silk weaving incl. artificial silk; carpets, incl. carpet yarns, rope, and cordage; men's clothing, incl. suits, shirts, bathrobes, vests; knit goods, incl. sweaters, bathing suits, gloves, etc; misc. clothing, men's and women's; misc. textiles and textile products.
Leather and leather products	Boots and shoes; misc. leather products.
Rubber and related products	Rubber products.

Note B to Table VII—1 (concluded)

INDUSTRIAL BRANCH	COMPARABLE EPSTEIN MINOR GROUPS
Lumber and wood products	Lumber manufacture; planing mill products; millwork; furniture (non-metal); misc. lumber products and processes.
Paper, pulp and products, and printing and publishing	Blank paper; cardboard boxes; stationery; misc. paper products; publishing newspapers, etc; publishing books and music; job printing; misc. printing and publishing processes.
Chemicals and allied substances	Crude chemicals and fertilizers; paints, etc; petroleum refining and products; proprietary preparations; toilet preparations; cleansing preparations incl. soap; misc. chemicals and chemical products.
Stone, clay glass and related products	Ceramics; glass; Portland cement; misc. clay and stone products.
Metal products and processes	Castings and forgings; sheet metal and sheet metal products; wire and nails; heating and ventilating machinery; electrical machinery, appliances and supplies; textile machinery and parts; printing machinery; hoisting, excavating and road machinery, incl. tractors; engines and parts; mining machinery; factory machinery other than textile, printing and electrical; office machinery and appliances other than furniture; railway equipment; motor vehicles and parts; firearms and explosives; hardware and plumbers' supplies; tools; bolts and nuts; machinery and machine processes n.e.s; non-ferrous metals and alloys n.e.s; jewelry and precious metal products; misc. metal products and processes.
Miscellaneous manufacturing	Professional and scientific instruments, incl. optical goods; toys, stationery goods and school supplies; pianos, organs, and parts; misc. special mfg. industries.
Trade	Retail trading; wholesale trading; wholesale and retail trading.

After the *Epstein* minor groups were allocated among the various industrial branches reported in *Statistics of Income,* the figures on sales and inventories were summated and ratios of inventories to sales derived. This was done for three years, 1924, 1925, and 1926, the 1926 ratio then being used as a link to the actual 1926 ratios of inventory to gross income as computed for the industrial branches directly from *Statistics of Income.* The 1924 and 1925 sample ratios were then adjusted in accordance with the level indicated by the 1926 linkage. Finally, the adjusted ratios were applied to the gross income data shown for the two years in *Statistics of Income.*

For several of the industrial branches estimates cannot be made with the above data. Thus for mining and quarrying a corporate sample compiled from *Moody's Industrials* had to be used. This will be discussed in more detail in Note C. For construction an index of the ratio of stocks to production of construction materials (for derivation see Note D to Table VI—1) was applied to the 1926 inventory figure as derived from *Statistics of Income.*

Before the remaining branches were estimated, the 1924 estimates as determined for the branches included thus far were totaled and compared with a similar total derived from the capital stock figures in 1924.[1] The ratio of the latter to the former was .98906. Consequently the estimates for the various branches were reduced in accordance with this ratio. Since in 1926 the inventory data were derived directly from *Statistics of Income* a ratio of 1.0000 was naturally assumed in that year. A geometric mean of the two ratios was then calculated and used as a basis for adjusting the 1925 estimates for the various industrial branches.

The completion of the preceding adjustments left four industrial branches in which inventory estimates were still lacking for 1924 and 1925. The technique of estimating these four: transportation and public utilities, service, finance, and nature of business not given is discussed in Note C since the same methods were used for all years prior to 1926.

1 The inventory data as reported were not used directly since they represented only corporations reporting assets. Appropriate raising ratios were calculated from the relationships between the fair values of capital stock of corporations reporting assets and those of all corporations. These ratios were then applied to the inventory figures as reported. The same technique was used for 1923.

Note C to Table VII—1

ESTIMATES OF INVENTORIES OF MANUFACTURING AND TRADE CORPORATIONS, 1918–1923, AND OF CORPORATIONS IN OTHER INDUSTRIAL BRANCHES, 1918–1925

Prior to 1924 lack of inventory data compelled the construction of corporate samples from which the movement of inventories might be ascertained. For this purpose, corporate reports appearing in *Moody's Industrials* were used. Those corporations were selected which gave both inventory and sales figures. Figures closely related to sales, such as gross income and gross revenue, were used if data on actual sales were not available.

Examination of the annual reports revealed the impossibility of constructing for the entire period a constant sample of sufficient size to justify its use. The data were thus assembled by pairs of years, a procedure that made possible the inclusion of any corporation reporting the desired figures for two or more successive years. The following table indicates for the various industrial branches the composition of our sample in each pair of years. Average total sales as shown in the table represent an arithmetic average of the aggregate sales for each two-year period.

Note C to Table VII-1

COMPOSITION OF NATIONAL BUREAU OF ECONOMIC RESEARCH INVENTORY SAMPLE

(millions of dollars)

Industrial Branches	1918 - 19	1919 - 20	1920 - 21	1921 - 22	1922 - 23	1923 - 24	1924 - 25	1925 - 26
Mining and quarrying								
No. of companies	52	60	67	65	63	61	57	55
Av. total sales	482.7	550.1	535.5	458.0	537.9	671.7	612.0	658.1
Sales as percentage of gross income for all corporations	11.1	10.2	10.7	12.1	12.6	13.8	12.5	13.9
Manufacturing								
Food, beverages and tobacco								
No. of companies	25	33	39	40	42	43	40	38
Av. total sales	1996.5	2234.4	1955.9	1659.3	1525.4	1510.5	1619.3	1752.4
Sales as percentage of gross income for all corporations	17.0	17.0	19.0	19.4	16.1	13.8	12.8	13.0
Textiles and textile products								
No. of companies	29	32	37	46	47	39	38	38
Av. total sales	368.3	504.9	471.3	358.2	438.5	351.0	351.8	350.2
Sales as percentage of gross income for all corporations	5.3	6.6	6.8	5.7	6.0	4.7	4.7	4.5
Leather and leather products								
No. of companies	9	13	10	12	13	12	11	10
Av. total sales	392.0	436.9	234.7	271.6	314.8	321.0	313.2	280.6
Sales as percentage of gross income for all corporations	20.0	21.3	14.2	18.8	20.6	20.7	20.7	17.7
Rubber and related products								
No. of companies	16	13	14	13	15	14	14	13
Av. total sales	725.1	814.2	700.9	555.2	623.4	633.0	739.9	692.3
Sales as percentage of gross income for all corporations	65.4	73.8	83.6	70.3	61.7	57.5	57.1	45.1
Lumber and wood products								
No. of companies	5	11	12	13	14	13	13	11
Av. total sales	23.9	99.3	89.9	72.6	84.1	92.3	92.1	88.3
Sales as percentage of gross income for all corporations	1.1	3.4	3.5	3.4	3.1	3.2	3.2	2.9
Paper, pulp and products, and printing and publishing								
No. of companies	10	12	13	16	17	16	15	14
Av. total sales	56.1	91.9	94.7	90.8	98.6	105.5	104.2	96.7
Sales as percentage of gross income for all corporations	2.5	3.0	3.0	3.2	3.1	3.0	2.9	2.4
Chemicals and allied substances								
No. of companies	19	26	34	35	37	34	33	33
Av. total sales	830.8	1527.7	1673.8	1440.7	1525.9	1611.5	2054.1	2717.6
Sales as percentage of gross income for all corporations	19.2	30.2	35.4	30.0	25.8	26.9	31.7	35.9
Stone, clay, glass and related products								
No. of companies	11	13	13	11	13	11	12	12
Av. total sales	74.7	95.7	90.9	80.1	119.4	127.0	136.8	112.9
Sales as percentage of gross income for all corporations	9.8	8.9	8.0	7.5	9.4	9.2	9.5	7.1
Metal products and processes								
No. of companies	88	113	123	130	111	101	101	98
Av. total sales	3570.4	3878.5	3382.6	2685.5	3630.4	3904.2	3685.2	3654.0
Sales as percentage of gross income for all corporations	26.6	27.1	27.2	27.2	27.3	24.0	21.0	19.5
Miscellaneous manufacturing								
No. of companies	3	5	7	9	9	11	8	6
Av. total sales	19.8	42.2	49.7	59.2	63.8	85.5	69.9	46.7
Sales as percentage of gross income for all corporations	0.6	1.0	1.3	1.6	1.3	2.2	2.8	1.9
Construction	See Note D to Table VI-1							
Trade								
No. of companies	25	34	39	48	53	48	47	46
Av. total sales	885.0	1432.0	1476.7	1600.9	1931.6	2140.6	2346.0	2562.6
Sales as percentage of gross income for all corporations	3.8	5.0	5.0	5.7	6.3	6.4	6.3	6.3

Note C to Table VII—1 (concluded)

Ratios of inventories to sales were computed for each industrial branch listed in this table. These ratios were then linked to the actual inventory ratios in 1924 (the 1924 ratios represented the Epstein inventory ratios after having been adjusted as a result of linkage with the 1926 ratios derived from *Statistics of Income*). In two branches—mining and quarrying, and construction—linkage was made directly with the 1926 data. The adjusted linked ratios were then applied to the gross income for the various branches as reported annually in *Statistics of Income*.

The inventory estimates thus calculated were summated, and the 1923 total compared with a similar total for mining, manufacturing, construction and trade as derived from the capital stock tax returns for 1923 (see Note B for derivation of a similar estimate in 1924; the same technique was used in 1923). The ratio of the total based on the capital stock returns to our hypothetical total was .99161. The 1923 estimates by branches were lowered in accordance with this estimate. Prior to 1923 the estimates by branches were adjusted on the basis of the geometric mean of the 1923 and 1924 ratios (for the 1924 ratio see Note B).

Completion of the calculations just described provided final inventory estimates in all but four of the industrial branches. Estimates for the first of these, transportation and public utilities, were obtained by means of special samples. First the annual value of inventories for a group of more than forty large electric light and power, and electric railway companies was obtained for the entire period from corporate reports as given in *Moody's Public Utilities*. The importance of this sample is shown by a comparison of its total for 1922 with that for all such utility companies in the *Census of Electrical Industries, 1922*: the sample represented about one-third of the total inventories reported in that year. The sample was therefore given a weight of three when combined with the other data used to estimate inventory figures for transportation and other public utilities.

The other data to which the weighted sample was added were obtained from two sources. First, from *Statistics of Rail*
ways data on materials and supplies held by Class I steam railroads were obtained back to 1920. Similarly data on ma terials and supplies, including tools in the hands of telephon companies, were obtained back to 1919 from the annual re ports of the Bell Telephone System.

The ratio of the grand total derived from the above t actual corporate inventories in 1926 was then computed, an applied to the totals through 1920. For 1918 and 1919 raisin ratios were calculated on the basis of the available data, e.g electric power, electric railway and telephone companies i 1919, and electric power and electric railways in 1918.

For service the following procedure was adopted. The in ventory data estimated for mining, manufacturing, construc tion and trade were totaled. The ratios of these totals t total gross income for the same groups were obtained. Thes ratios were then used as an index to move the 1926 servic ratio. The hypothetical estimates of service inventories ob tained by the application of the derived ratios were then ad justed in accordance with the 1923 and 1924 relationships t service inventories as derived for those years from the capita stock returns. These figures were .89632 in 1923 and .8582 in 1924 of the hypothetical estimates. Prior to 1923 a geomet ric mean of the two correction factors was used. In 1925 a geo metric mean of the 1924 factor and the 1926 factor (1.0000 since actual data were available in 1926) was used.

The procedure used to estimate inventories for both financ and nature of business not given was as follows. The 1923 1924 and 1926 inventory figures for finance and nature o business not given, as derived from *Statistics of Income*, wer expressed as ratios of the inventory total for mining, manu facturing, construction and trade. Figures for 1925 were es timated by using a geometric mean of the 1924 and 192 ratios. Figures prior to 1923 were estimated on the basis o the application of the geometric mean of the 1923 and 192 ratios.

Table VII—2

ESTIMATES OF NON-CORPORATE INVENTORIES IN MINING AND MANUFACTURING, CURRENT VALUATION, 1918–1933

Of the industrial branches distinguished in Table VII—1 inventories held by unincorporated firms can be estimated directly only for mining and manufacturing; for the measurement of total inventories in agriculture and trade see Tables VII—4 and VII—5. The basis and validity of the estimates in Table VII—2 are discussed in the note following it and in the Preface to Part VII, Section 3a.

Table VII—3

APPORTIONMENT OF INVENTORIES HELD IN THE MINING AND QUARRYING INDUSTRY AMONG SUBDIVISIONS OF THAT INDUSTRY, CURRENT VALUATION, 1918–1933

This more detailed measurement of inventories in the mining and quarrying industry is undertaken in order to enable subsequently a better classification of inventories according to durability. The methods of obtaining the apportionment shown in the table are described in Note A following it.

Comments on the table will be found in the Preface to Part VII, Section 3a.

Table VII-2

ESTIMATES OF NON-CORPORATE INVENTORIES IN MINING AND MANUFACTURING, CURRENT VALUATION, END OF YEAR

(millions of dollars)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Mining and quarrying	36.3	65.0	67.9	45.2	34.7	40.2	42.6	37.9	33.5	34.2	24.7	31.7	20.3	21.6	17.7	18.7
Manufacturing	1326.2	1686.4	1597.6	1300.7	1430.7	1472.4	1367.4	1346.2	1275.5	1234.5	1185.2	1135.4	959.0	744.9	596.6	710.2
Food, beverages and tobacco	242.5	382.5	282.1	171.8	187.3	197.2	226.1	236.9	245.5	249.2	244.2	238.0	207.9	167.9	144.4	171.4
Textiles and leather	595.6	714.8	639.6	630.1	696.7	683.2	638.1	611.4	539.4	548.7	531.5	489.1	378.3	280.4	216.8	293.8
Lumber, stone, clay and glass	126.3	156.6	197.0	137.0	135.8	146.8	145.9	148.8	158.0	147.3	134.6	130.2	121.7	90.0	69.5	70.9
Paper and printing	59.1	61.1	83.8	82.8	79.3	67.7	72.6	62.9	61.4	60.1	56.1	56.6	52.8	45.3	35.9	38.2
Chemicals	38.9	47.9	57.4	41.2	60.9	58.4	49.8	55.1	59.6	44.3	46.2	48.4	48.0	43.1	35.1	35.4
Metal products	109.4	126.4	139.2	107.5	96.0	125.4	131.0	133.4	114.2	102.1	92.1	97.2	86.6	70.5	56.5	59.6
Miscellaneous	154.4	197.1	198.5	130.3	174.7	193.7	103.9	97.7	97.4	82.8	80.5	75.9	63.7	47.7	38.4	40.9

Table VII-3

APPORTIONMENT OF MINING AND QUARRYING INVENTORIES, CURRENT VALUATION, END OF YEAR

(millions of dollars)

Subdivision of Mining and Quarrying	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
1 Coal	183.0	234.2	245.2	270.6	175.0	215.8	239.7	181.7	175.6	241.3	156.9	154.4	102.7	119.4	88.9	90.6
2 Oil and gas	109.9	202.3	224.9	151.6	166.1	217.7	255.6	266.0	253.2	224.9	190.2	282.1	198.7	149.7	137.3	165.1
3 Metal mining	200.9	385.5	404.5	155.3	137.5	165.6	155.2	153.1	131.4	127.3	102.5	161.3	77.9	91.4	58.1	74.5
4 Non-metal mining	56.2	193.5	222.3	178.7	123.3	124.3	145.9	137.0	118.8	132.0	98.9	138.4	92.1	142.3	127.4	104.4
Total	550.0	1015.5	1096.9	756.2	601.9	723.4	796.4	737.8	679.0	725.5	548.5	736.2	471.4	502.8	411.7	434.6

Note A to Table VII—2

DERIVATION OF NON-CORPORATE INVENTORY ESTIMATES

The non-corporate inventory estimates are based on the ratios of corporate to non-corporate values of products. For mining and quarrying such ratios were derived from the 1919 and 1929 *Census of Mines and Quarries*. Straight line interpolation was used to estimate ratios for the intervening years, while for the years since 1929, the 1929 ratio was used. Similarly, data were available in the 1919 and 1929 *Census of Manufactures* for the various branches of manufacturing. Again straight line interpolation was used to obtain ratios for the years between 1919 and 1929, while the 1929 ratio was employed for all later years.

The ratios thus derived were applied to the values of corporate inventories shown in Table VII—1. It will be noted that several of the branches of manufacturing were combined. This was done merely as a matter of convenience in estimating. No non-corporate inventories were estimated for rubber and related products because of the extremely small proportion of business done by non-incorporated establishments.

It will further be noted that no data on construction, trade, service, transportation and other public utilities, finance, and nature of business not given, appear in Table VII—2. Construction inventories have been treated more fully in Part VI; trade will be discussed in Note A to Table VII—5 below. Lack of data prevented the calculation of non-corporate inventories in the remaining branches.

Note A to Table VII–3

METHOD OF APPORTIONING TOTAL MINING AND QUARRYING INVENTORIES

The values for the four subdivisions in Table VII–3 were estimated as follows:

1 Inventory samples were compiled for three groups: coal, oil and gas, and metal mining. The required data, sales or the closest equivalent, and inventories were assembled by pairs of years from annual corporate reports, appearing in *Moody's Industrials*. The period 1918–34 was covered, and the inventory ratios derived from the totals for each sample were assumed to be adequate indexes of the movement of such ratios during this period. Some idea of the size of the samples is given in the following table.

Size of Inventory Samples Used as a Basis for the Breakdown of Total Mining Inventories
(*sales in millions of dollars*)

	COAL		OIL AND GAS		METAL MINING	
	No. of companies	Average total sales	No. of companies	Average total sales	No. of companies	Average total sales
1918–1919	18	244.3	5	96.6	32	232.3
1919–1920	20	270.7	8	194.3	36	248.2
1920–1921	25	300.9	17	260.8	35	192.3
1921–1922	24	216.3	19	271.1	33	196.9
1922–1923	21	178.7	18	291.6	34	313.9
1923–1924	19	257.0	18	291.6	34	365.5
1924–1925	17	209.7	15	297.2	33	355.4
1925–1926	18	217.7	14	341.4	31	381.5
1926–1927	18	228.5	15	366.1	31	419.0
1927–1928	21	309.4	14	486.2	32	484.1
1928–1929	20	306.6	10	445.3	29	548.6
1929–1930	18	238.4	11	422.9	28	498.3
1930–1931	17	260.0	11	321.8	24	308.2
1931–1932	14	128.1	11	269.2	23	166.4
1932–1933	15	144.2	10	249.5	21	137.0
1933–1934	13	150.5	11	294.8	21	181.8

2 Although the inventory ratios derived from the use of the above data were assumed to be satisfactory as indicators of year-to-year changes, no such assumption could be made regarding the level of the ratios in any given year. But it was possible to relate the levels shown in the sample to an approximate actual level for all corporations. Ratios representing all corporations by subgroups were available from the 1923 and 1924 capital stock returns as reported in *Statistics of Income*. Since the ratios for either of these years taken separately might well be at an abnormal level, it was decided to use the geometric means of the two sets of ratios. These were then related to the respective geometric means of the samples, the resultant percentage providing an adjustment factor used for all the years. For non-metal mining it was necessary to apply the geometric means of the ratios obtained for non-metal mining from the *Statistics of Income* data to the metal mining sample, i.e., to use the metal mining sample as an index.

3 The procedure described in step (2) provided estimates of the inventory ratios for each subdivision from 1918 to 1934. It was next essential to secure totals to which the ratios might be applied. In the decennial Census years, 1919 and 1929, such totals were taken directly from the *Census of Mines and Quarries*, the figures there given for value of product being utilized (for oil and gas only a 1919 total was available). For the years other than 1919 and 1929 estimates were made on the basis of data on value of products reported annually in *Mineral Resources of the U. S.* The 1919 and 1929 relationships to the Census figures were ascertained and straight line interpolations used to estimate adjustment ratios for the intervening years. For 1918 the 1919 ratio was used; for the years since 1929 the 1929 ratio was used. For oil and gas the 1919 ratio was used in all years.

4 The preceding calculations yielded preliminary measures of inventories, preliminary because they had still to be adjusted in order to yield totals equal to total mining inventories as previously estimated. The figures in Table VII–3 represent the final estimates after such adjustment to the controlling totals.

Table VII—4

INVENTORIES OF CROPS AND LIVESTOCK IN HANDS OF FARMERS, CURRENT AND 1929 PRICES, 1918–1933

The crops for which continous data on farm inventories were available and which are, therefore, covered by this table are wheat, corn and oats. Only such livestock is here included as cannot be classified as capital livestock (for the measurement of capital livestock see Table V—9). The estimates of the various component parts of total farm inventories of crops and livestock are given in detail in the notes following the table.

Comments on this table will be found in the Preface to Part VII, Section 3b.

Table VII-4

INVENTORIES IN HANDS OF FARMERS, END OF YEAR

(millions of dollars)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Value in Current Prices																
Crops (wheat, corn and oats)	2,832	3,252	2,496	1,233	1,625	1,735	1,923	1,963	1,479	1,622	1,702	1,593	1,098	821	533	892
Livestock	4,442	3,999	2,787	2,189	2,534	2,361	2,391	2,652	2,812	2,979	3,261	3,188	2,310	1,551	1,211	1,190
Total	7,274	7,251	5,283	3,422	4,159	4,096	4,314	4,615	4,291	4,601	4,963	4,781	3,408	2,372	1,744	2,082
Value in 1929 Prices																
Crops (wheat, corn and oats)	1,587	1,759	2,690	2,027	1,804	1,869	1,400	2,120	1,660	1,617	1,724	1,593	1,438	1,847	2,072	1,519
Livestock	3,628	3,548	3,433	3,432	3,515	3,441	3,158	3,014	3,007	3,105	3,123	3,184	3,186	3,277	3,401	3,419
Total	5,215	5,307	6,123	5,459	5,319	5,310	4,558	5,134	4,667	4,722	4,847	4,777	4,624	5,124	5,473	4,938
Net Changes in Value in 1929 Prices																
Crops (wheat, corn and oats)		+171	+931	-663	-223	+65	-469	+720	-460	-43	+107	-131	-155	+409	+225	-553
Livestock		-80	-115	-1	+83	-74	-283	-144	-7	+98	+19	+61	+2	+90	+124	+18
Total		+91	+816	-664	-140	-9	-752	+576	-467	+55	+126	-70	-153	+499	+349	-535
Net Changes in Value in Current Prices																
Crops (wheat, corn and oats)		+356	+1,573	-527	-139	+59	-488	+811	-351	-44	+119	-131	-144	+226	+74	-262
Livestock		-112	-106	+13	+92	-44	-207	-98	+36	+117	+20	+61	-2	+54	+51	+7
Total		+244	+1,467	-514	-47	+15	-695	+713	-315	+73	+139	-70	-146	+280	+125	-255

Note A to Table VII-4

WHEAT: STOCKS ON FARMS AND CHANGES FROM YEAR TO YEAR

(quantities in thousands of bushels; values in thousands of dollars)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
1 Quantity on farms, Jan. 1 of fol. year									208,266	199,481	253,710	218,044	254,045	318,082	271,608	189,837
2 Quantity on farms, Mar. 1 of fol. year	128,703	169,904	217,037	134,253	156,087	137,721	112,095	100,174	130,274	130,944	151,396	129,402	161,442	207,323		
3 Estimated quantity on farms, Jan. 1 of fol. year[2]	205,719	271,575	346,912	214,590	249,489	220,133	179,173	160,118								
4 Year-to-year changes in quantities on farms		+65,856	+75,337	-132,322	+34,899	-29,356	-40,960	-19,055	+48,148	-8,785	+54,229	-35,666	+36,001	+64,037	-46,474	-81,771
5 Price per bushel received by producers, annual average, cents		215.8	220.2	116.7	103.7	98.5	110.5	151.0	135.1	120.4	113.4	102.7	80.9	48.8	38.8	58.1
6 Changes in value of wheat stocks in 1929 prices (line 4 x 1929 price in line 5)		+67,634	+77,371	-135,895	+35,841	-30,149	-42,066	-19,569	+49,448	-9,022	+55,693	-36,629	+36,973	+65,766	-47,729	-83,979
7 Changes in value of wheat stocks in current prices (line 4 x line 5)		+142,117	+165,892	-154,420	+36,190	-28,916	-45,261	-28,773	+65,048	-10,577	+61,496	-36,629	+29,125	+31,250	-18,032	-47,509
8 Price per bushel received by producers, Dec.-Jan. average, cents	205.4	228.6	147.8	94.1	103.9	95.6	151.6	155.9	122.5	114.6	98.4	107.8	60.2	44.1	32.2	68.4
9 Total value of wheat stocks on farms in current prices (line 1 or line 3 x line 8)	422,547	620,820	512,736	201,929	259,219	210,447	271,626	249,624	255,126	228,605	249,651	235,051	152,935	140,274	87,458	129,849
10 Total value of wheat on farms in 1929 prices	222,394	290,028	367,399	231,504	267,345	237,196	195,130	175,561	225,009	215,987	271,680	235,051	272,024	337,790	290,061	206,082

[1]Basic data from various issues of Yearbook of Agriculture and Crops and Markets.

[2]Based on average ratio from 1926-31 of line 1 to line 2, 1.5984.

Note B to Table VII-4

CORN FOR GRAIN: STOCKS ON FARMS AND CHANGES FROM YEAR TO YEAR

(quantities in thousands of bushels; values in thousands of dollars)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
1 Quantity on farms, Jan. 1 of fol. year									1,459,153	1,446,780	1,435,316	1,389,764	1,118,424	1,556,349	1,813,479	1,433,740
2 Quantity on farms, Mar. 1 of fol. year	855,269	1,045,575	1,564,832	1,305,559	1,093,306	1,153,847	757,890	1,329,281	1,134,191	1,011,908	1,021,873	958,111	703,529	1,103,691		
3 Estimated quantity on farms, Jan. 1 of fol. year[2]	1,221,752	1,493,604	2,235,363	1,864,991	1,561,788	1,648,270	1,082,646	1,898,878								
4 Year-to-year changes in quantities on farms		+271,852	+741,759	-370,372	-303,203	+86,482	-565,624	+816,232	-439,725	-12,373	-11,464	-45,552	-271,340	+437,925	+257,130	-379,739
5 Price per bushel received by producers, annual average, cents		156.3	141.1	56.8	59.6	80.2	91.2	99.9	69.9	78.8	89.1	87.6	78.0	49.8	28.1	36.5
6 Changes in value of corn stocks in 1929 prices (line 4 x 1929 price in line 5)		+238,142	+649,781	-324,446	-265,606	+75,758	-495,487	+715,019	-385,199	-10,839	-10,042	-39,904	-237,694	+383,622	+225,246	-332,651

Note B to Table VII-4 (Concluded)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
7 Changes in value in current prices (line 4 x line 5)		+424,905	+1,046,622	-210,371	-180,709	+69,359	-515,849	+815,416	-307,368	-9,750	-10,214	-39,904	-211,645	+218,087	+72,254	-138,605
8 Price per bushel received by producers, Dec.-Jan. average, cents	141.0	140.5	65.7	43.7	68.9	72.9	108.8	70.2	64.4	75.2	78.2	77.6	63.3	34.1	19.0	43.0
9 Total value of corn stocks on farms in current prices (line 1 or line 3 x line 8)	1,722,670	2,098,514	1,468,633	815,001	1,076,072	1,201,589	1,177,919	1,333,012	939,695	1,087,979	1,122,417	1,078,457	707,962	530,715	344,561	616,508
10 Total value of corn on farms in 1929 prices	931,280	1,169,422	1,819,203	1,494,757	1,229,151	1,304,909	809,422	1,524,441	1,139,242	1,128,403	1,118,361	1,078,457	840,763	1,224,385	1,449,631	1,116,980

[1]Basic data from various issues of Yearbook of Agriculture and Crops and Markets.

[2]Basic on average ratio from 1926-31 of line 1 to line 2, 1.4285.

Note C to Table VII-4

OATS: STOCKS ON FARMS AND CHANGES FROM YEAR TO YEAR[1]

(quantities in thousands of bushels; values in thousands of dollars)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
1 Quantity on farms, Jan. 1 of fol. year									680,422	628,045	766,567	644,029	746,977	655,804	763,195	456,283
2 Quantity on farms, Mar. 1 of fol. year	590,251	409,730	683,759	411,934	421,118	447,366	538,832	571,248	421,897	373,167	497,335	368,356	429,616	372,136		
3 Estimated quantity on farms, Jan. 1 of fol. year[2]	992,271	688,797	1,149,467	692,502	707,941	752,067	905,830	960,325								
4 Year-to-year changes in quantities on farms		-303,474	+460,670	-456,965	+15,439	+44,126	+153,763	+54,495	-279,903	-52,377	+138,522	-122,538	+102,948	-91,173	+107,391	-306,912
5 Price per bushel received by producers, annual average, cents		69.6	78.2	35.5	36.3	41.6	47.3	44.5	38.9	44.9	49.0	44.3	37.8	25.5	18.2	24.7
6 Changes in value of oat stocks in 1929 prices (line 4 x 1929 price in line 5)		-134,439	+204,077	-202,435	+6,839	+19,548	+68,117	+24,141	-123,997	-23,203	+61,365	-54,284	+45,606	-40,390	+47,574	-135,962
7 Changes in value of oat stocks in current prices (line 4 x line 5)		-211,218	+360,244	-162,223	+5,604	+18,356	+72,730	+24,250	-108,882	-23,517	+67,876	-54,284	+38,914	-23,249	+19,545	-75,807
8 Price per bushel received by producers, Dec.-Jan. average, cents	69.2	77.4	44.8	31.2	40.9	43.0	52.3	39.6	41.8	48.7	43.1	43.4	31.7	22.8	13.2	32.0
9 Total value of oats on farms in current prices (line 1 or line 3 x line 8)	686,652	533.129	514,961	216,061	289,548	323,389	473,749	380,289	284,416	305,858	330,390	279,509	236,792	149,523	100,742	146,011
10 Total value of oats on farms in 1929 prices	433,780	299,341	503,418	300,983	307,822	327,370	395,487	419,628	295,631	272,428	333,793	279,509	325,115	284,725	332,299	196,337

[1]Basic data from various issues of Yearbook of Agriculture and Crops and Markets.

Note D to Table VII-4

CATTLE, OTHER THAN MILK COWS, ON FARMS AND CHANGES FROM YEAR TO YEAR[1]

(numbers in thousands; values in thousands of dollars)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
1 No. on farms, Jan. 1 of fol. year	49,042	48,870	47,193	46,841	45,285	43,544	40,610	37,666	35,369	34,572	35,548	36,820	37,411	38,181	40,419	42,105
2 Changes in no. during year		-172	-1,677	-352	-1,556	-1,741	-2,934	-2,944	-2,297	-797	+976	+1,272	+591	+770	+2,238	+1,686
3 Average price per head (av. of two Jan. 1 figures)		40.90	34.53	25.47	22.65	23.22	22.80	24.48	27.26	32.21	39.62	41.68	34.26	23.20	16.22	13.44
4 Changes in value during year in 1929 prices (line 2 x 1929 price from line 3)		-7,169	-69,897	-14,671	-64,854	-72,565	-122,289	-122,706	-95,739	-33,219	+40,680	+53,017	+24,633	+32,094	+93,280	+70,272
5 Changes in value during year, in current prices (line 2 x line 3)		-7,035	-57,907	-8,965	-35,243	-40,426	-66,895	-72,069	-62,616	-25,671	+38,669	+53,017	+20,248	+17,864	+36,300	+22,660
6 Average price per head as of Jan. 1 of fol. year	41.79	40.01	29.05	21.89	23.41	23.03	22.57	27.40	28.12	36.30	42.93	40.44	28.08	18.32	14.11	12.77
7 Value of no. on farms, Jan. 1 of fol. year, in current prices (line 1 x line 6)	2,049,465	1,955,289	1,370,957	1,025,349	1,060,122	1,002,818	916,568	994,382	994,576	1,254,964	1,526,076	1,489,001	1,050,501	699,476	570,312	537,681
8 Value of no. on farms in 1929 prices	1,998,413	1,991,244	1,921,347	1,906,676	1,841,822	1,769,257	1,646,968	1,524,262	1,428,523	1,395,304	1,435,984	1,489,001	1,513,634	1,545,728	1,639,008	1,709,280

[1]Basic data from Yearbook of Agriculture.

Note E to Table VII-4

HOGS ON FARMS AND CHANGES FROM YEAR TO YEAR[1]

(numbers in thousands; values in thousands of dollars)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
1 No. on farms, Jan. 1 of fol. year	63,800	60,159	58,942	59,849	69,304	66,576	55,770	52,085	55,468	61,772	58,789	55,301	54,399	58,988	61,598	57,177
2 Changes in no. during year		-3,641	-1,217	+907	+9,455	-2,728	-10,806	-3,685	+3,383	+6,304	-2,983	-3,488	-902	+4,589	+2,610	-4,421
3 Average price per head (av. of two Jan. 1 figures)		21.64	16.82	12.10	11.44	11.30	11.72	14.40	16.42	15.18	13.06	13.20	12.41	8.74	5.18	4.18
4 Changes in value during year in 1929 prices (line 2 x 1929 price from line 3)		-48,061	-16,064	+11,972	+124,806	-36,010	-142,639	-48,642	+44,656	+83,213	-39,376	-46,042	-11,906	+60,575	+34,452	-58,357
5 Changes in value during year, in current prices (line 2 x line 3)		-78,791	-20,470	+10,975	+108,165	-30,826	-126,646	-53,064	+55,549	+95,695	-38,928	-46,042	-11,194	+40,108	+13,520	-18,480
6 Average price per head as of Jan. 1 of fol. year	23.28	20.00	13.63	10.58	12.29	10.30	13.15	15.66	17.19	13.17	12.94	13.46	11.36	6.13	4.22	4.14
7 Value of no. on farms, Jan. 1 of fol. year, in current prices (line 1 x line 6)	1,485,264	1,203,180	803,379	633,202	851,746	685,733	733,376	815,651	953,495	813,537	760,730	744,351	617,973	361,596	259,944	236,713
8 Value of no. on farms in 1929 prices	856,538	808,477	792,413	804,385	929,191	893,181	750,542	701,900	746,556	829,769	790,393	744,351	732,445	793,020	827,472	769,115

[1]Basic data from Yearbook of Agriculture.

Note F to Table VII-4

SHEEP AND LAMBS ON FARMS AND CHANGES FROM YEAR TO YEAR

(numbers in thousands; values in thousands of dollars)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
1 No. on farms, Jan. 1 of fol. year	41,000	40,643	39,378	36,821	36,695	37,020	38,392	40,183	42,302	45,121	48,249	51,233	52,599	53,155	51,762	52,212
2 Changes in no. during year		-357	-1,265	-2,557	-126	+325	+1,372	+1,791	+2,119	+2,819	+3,128	+2,984	+1,366	+556	-1,393	+450
3 Average price per head (av. of two Jan. 1 figures)		11.04	8.36	5.53	6.14	7.68	8.78	10.08	10.08	9.94	10.40	9.76	7.15	4.38	3.15	3.34
4 Changes in value during year in 1929 prices (line 2 x 1929 price from line 3)		-3,484	-12,346	-24,956	-1,230	+3,172	+13,391	+17,480	+20,681	+27,513	+30,529	+29,124	+13,332	+5,427	-13,596	+4,392
5 Changes in value during year, in current prices (line 2 x line 3)		-3,941	-10,575	-14,140	-774	+2,496	+12,046	+18,053	+21,360	+28,021	+32,531	+29,124	+9,767	+2,435	-4,388	+1,503
6 Average price per head as of Jan. 1 of fol. year	11.63	10.45	6.27	4.79	7.49	7.88	9.68	10.48	9.67	10.22	10.59	8.94	5.36	3.40	2.90	3.79
7 Value of no. on farms, Jan. 1 of fol. year, in current prices (line 1 x line 6)	476,830	424,719	246,900	176,373	274,846	291,718	371,635	421,118	409,060	461,137	510,957	458,023	281,931	180,727	150,110	197,883
8 Value of no. on farms in 1929 prices	358,149	354,665	342,319	317,363	316,133	319,305	332,696	350,176	370,857	398,370	428,899	458,023	471,355	476,782	463,186	467,578

[1]Basic data from Yearbook of Agriculture.

Note G to Table VII-4

VALUE OF MISCELLANEOUS LIVESTOCK ON FARMS AND CHANGES FROM YEAR TO YEAR

(millions of dollars)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
1 Total value of all livestock on farms as of Jan. 1 of fol. year[1]	8,815	8,525	6,413	5,104	5,400	5,117	5,041	5,403	5,537	6,041	6,578	6,490	4,814	3,500	2,910	3,095
2 Value of livestock excl. misc. livestock[2]	8,384	8,109	6,047	4,749	5,053	4,737	4,672	4,982	5,082	5,592	6,115	5,993	4,455	3,191	2,679	2,878
3 Value of misc. livestock on farms (line 1 - line 2)	431	416	366	355	347	380	369	421	455	449	463	497	359	309	231	217
4 Index of chicken prices, Jan. 1 of fol. year, 1929 = 100[3]	103.8[4]	105.7	97.1	87.8	81.1	82.7	86.2	96.2	98.6	93.3	99.0	100.9	76.5	67.1	49.0	45.9
5 Value of misc. livestock on farms in 1929 prices (line 3 ÷ line 4)	415	394	377	404	428	459	428	438	461	481	468	493	469	461	471	473
6 Changes in value in 1929 prices		-21	-17	+27	+24	+31	-31	+10	+23	+20	-13	+25	-24	-8	+10	+2
7 Index of chicken prices, av. for year, 1929 = 100[3]		104.8	101.3	92.4	84.5	82.0	84.5	91.2	97.4	95.9	96.1	100.0	88.7	71.7	58.0	47.4
8 Changes in value of misc. livestock on farms in current prices (line 6 x line 7)		-22	-17	+25	+20	+25	-26	+9	+22	+19	-12	+25	-21	-6	+6	+1

[1]Crops and Markets, July 1935, p. 273.

[2]Based on calculations made in the National Bureau study of National Income; includes cattle other than milk cows, hogs, sheep and lambs, horses, mules, and milk cows.

[3]Chicken price index used for entire miscellaneous since chickens make up the largest portion and no price data are available for goats, bees, etc. Chicken prices obtained from Yearbook of Agriculture, 1932 and 1935.

[4]Estimated on basis of 1918-19 relationship of Dec.-Jan. averages of chicken prices per pound received by producers. Data from Yearbook of Agriculture, 1925.

Table VII—5

INVENTORIES OF ALL COMMODITIES, WHOLESALE AND RETAIL TRADE, CURRENT VALUATION, 1918–1933

In distinction from Table V—5, which measures distributive inventories of finished commodities alone, this table assembles estimates of inventories of all commodities held by wholesalers and retailers. The procedure followed in obtaining these estimates is analogous to that employed in Table V—5.

The methods of deriving the estimates are described in Notes A through E following the table. For further discussion see the Preface to Part VII, Section 3b.

Table VII-5

INVENTORIES OF ALL COMMODITIES, WHOLESALE AND RETAIL TRADE, END OF YEAR

(dollar values in millions)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
I Wholesale																
A Perishable																
1 Volume of sales, first approximation	27,663.5	35,145.9	34,318.5	25,397.1	26,512.3	28,634.7	30,109.7	32,196.1	33,059.5	33,059.5	34,174.6	35,973.3	33,503.2	24,185.4	19,218.2	19,245.7
2 Inventory-sales ratio, percent	6.05	6.14	6.01	6.26	6.84	6.26	6.13	5.68	5.95	5.99	6.03	6.12	5.71	6.61	6.60	6.95
3 Inventories, first approximation, line 1 x line 2	1,673.6	2,158.0	2,062.5	1,589.9	1,813.4	1,792.5	1,845.7	1,828.7	1,967.0	1,980.3	2,060.7	2,201.6	1,913.0	1,598.7	1,268.4	1,337.6
4 Net difference in inventories, first approximation		+484.4	-95.5	-472.6	+223.5	-20.9	+53.2	-17.0	+138.3	+13.3	+80.4	+140.9	-288.6	-314.3	-330.3	+69.2
5 Net difference expressed in terms of sales value (i.e., multiplied by mark-up shown in Note C)		+529.4	-103.2	-513.7	+244.3	-22.9	+58.2	-18.6	+151.3	+14.6	+88.0	+154.3	-316.3	-345.1	-363.0	+76.6
6 Volume of sales, second approximation, line 1 - line 5	27,243.2[1]	34,616.5	34,421.7	25,910.8	26,268.0	28,657.6	30,051.5	32,214.7	32,908.2	33,044.9	34,086.6	35,973.3	33,819.5	24,530.5	19,581.2	19,245.7
7 Inventories, second approximation, line 6 x line 2	1,648.2	2,125.5	2,068.7	1,622.0	1,796.7	1,794.0	1,842.2	1,829.8	1,958.0	1,979.4	2,055.4	2,201.6	1,931.1	1,621.5	1,292.4	1,337.6
8 Net difference in inventories, second approximation		+477.3	-56.8	-446.7	+174.7	-2.7	+48.2	-12.4	+128.2	+21.4	+76.0	+146.2	-270.5	-309.6	-329.1	+45.2
9 Final (second) approximation of inventories	1,648.2	2,125.5	2,068.7	1,622.0	1,796.7	1,794.0	1,842.2	1,829.8	1,958.0	1,979.4	2,055.4	2,201.6	1,931.1	1,621.5	1,292.4	1,337.6
B Semidurable																
1 Volume of sales, first approximation	13,195.5	14,660.2	14,740.8	10,279.6	11,824.9	13,370.2	12,550.5	13,397.1	13,209.0	13,235.8	13,114.9	13,437.4	9,899.7	7,735.6	5,401.4	6,073.7
2 Inventory-sales ratio, percent	10.34	11.20	10.04	13.54	13.11	11.79	12.27	11.80	10.46	11.41	10.75	9.53	10.39	9.63	10.24	11.63
3 Inventories, first approximation, line 1 x line 2	1,364.4	1,641.9	1,480.0	1,391.9	1,550.2	1,576.3	1,539.9	1,580.9	1,381.7	1,510.2	1,409.9	1,280.6	1,028.6	744.9	553.1	706.4
4 Net difference in inventories, first approximation		+277.5	-161.9	-88.1	+158.3	+26.1	-36.4	+41.0	-199.2	+128.5	-100.3	-129.3	-252.0	-283.7	-191.8	+153.3
5 Net difference expressed in terms of sales value (i.e., multiplied by mark-up shown in Note C)		+302.8	-174.7	-95.6	+172.7	+28.5	-39.7	+44.8	-217.5	+140.5	-109.6	-141.3	-275.7	-310.7	-210.2	+169.4
6 Volume of sales, second approximation, line 1 - line 5	12,921.7[2]	14,357.4	14,915.5	10,375.2	11,652.2	13,341.7	12,590.2	13,352.3	13,426.5	13,095.3	13,224.5	13,437.4	10,175.4	8,046.3	5,611.6	6,073.7
7 Inventories, second approximation, line 6 x line 2	1,336.1	1,608.0	1,497.5	1,404.8	1,527.6	1,573.0	1,544.8	1,575.6	1,404.4	1,494.2	1,421.6	1,280.6	1,057.2	774.9	574.6	706.4

Table VII-5 (Continued)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
8 Net difference in inventories, second approximation		+271.9	-110.5	-92.7	+122.8	+45.4	-28.2	+30.8	-171.2	+89.8	-72.6	-141.0	-223.4	-282.3	-200.3	+131.8
9 Net difference expressed in terms of sales value		+296.6	-119.2	-100.6	+134.0	+49.6	-30.8	+33.6	-187.0	+98.2	-79.4	-154.1	-244.4	-309.1	-219.5	+145.6
10 Volume of sales, third approximation, line 1 - line 9	12,927.2[2]	14,363.6	14,860.0	10,380.2	11,690.9	13,320.6	12,581.3	13,363.5	13,396.0	13,137.6	13,194.3	13,437.4	10,144.1	8,044.7	5,620.9	6,073.7
11 Final (third) approximation of inventories	1,336.7	1,608.7	1,491.9	1,405.5	1,532.7	1,570.5	1,543.7	1,576.9	1,401.2	1,499.0	1,418.4	1,280.6	1,054.0	774.7	575.6	706.4
C Durable																
1 Volume of sales, first approximation	14,366.4	15,777.2	17,287.3	11,127.5	12,538.3	17,545.7	15,578.5	17,843.7	17,664.9	17,545.7	18,618.7	19,870.5	14,412.0	9,806.2	5,794.3	6,895.1
2 Inventory-sales ratio, percent	9.33	10.46	10.37	12.34	11.36	9.90	10.70	9.75	9.08	8.89	8.98	8.88	9.63	11.59	16.40	14.17
3 Inventories, first approximation, line 1 x line 2	1,340.4	1,650.3	1,792.7	1,373.1	1,424.4	1,737.0	1,666.9	1,739.8	1,604.0	1,559.8	1,672.0	1,764.5	1,387.9	1,136.5	950.3	977.0
4 Net difference in inventories, first approximation		+309.9	+142.4	-419.6	+51.3	+312.6	-70.1	+72.9	-135.8	-44.2	+112.2	+92.5	-376.6	-251.4	-186.2	+26.7
5 Net difference expressed in terms of sales value (i.e., multiplied by mark-up shown in Note C)		+351.7	+158.9	-472.1	+58.2	+354.8	-79.6	+82.8	-154.3	-50.2	+127.7	+105.3	-428.9	-286.6	-212.8	+30.9
6 Volume of sales, second approximation, line 1 - line 5	14,052.6[3]	15,425.5	17,128.4	11,599.6	12,480.1	17,190.9	15,658.1	17,760.9	17,819.2	17,595.9	18,491.0	19,870.5	14,840.9	10,092.8	6,007.1	6,895.1
7 Inventories, second approximation, line 6 x line 2	1,311.1	1,613.5	1,776.2	1,431.4	1,417.7	1,701.9	1,675.4	1,731.7	1,618.0	1,564.3	1,660.5	1,764.5	1,429.2	1,169.8	985.2	977.0
8 Net difference in inventories, second approximation		+302.4	+162.7	-344.8	-13.7	+284.2	-26.5	+56.3	-113.7	-53.7	+96.2	+104.0	-335.3	-259.4	-184.6	-8.2
9 Net difference expressed in terms of sales value		+343.2	+181.6	-387.9	-15.5	+322.6	-30.1	+64.0	-129.2	-61.0	+109.5	+118.4	-381.9	-295.7	-211.0	-9.5
10 Volume of sales, third approximation, line 1 - line 9	14,060.4[3]	15,434.0	17,105.7	11,515.4	12,553.8	17,223.1	15,608.6	17,779.7	17,794.1	17,606.7	18,509.2	19,870.5	14,793.9	10,101.9	6,005.3	6,895.1
11 Final (third) approximation of inventories	1,311.8	1,614.4	1,773.9	1,421.0	1,426.1	1,705.1	1,670.1	1,733.5	1,615.7	1,565.2	1,662.1	1,764.5	1,424.7	1,170.8	984.9	977.0
II Retail																
A Perishable																
1 Volume of sales, first approximation[4]	18,600.0	23,634.0	25,514.9	19,517.8	20,035.7	21,507.7	22,380.0	23,961.1	25,433.1	24,860.7	25,923.8	27,259.5	24,588.1	20,199.3	16,710.1	17,391.6
2 Inventory-sales ratio, percent	13.75	13.21	12.32	12.04	12.29	12.14	12.05	11.81	10.74	10.15	9.97	9.76	9.22	10.39	10.14	10.41
3 Inventories, first approximation, line 1 x line 2	2,557.5	3,122.1	3,143.4	2,349.9	2,462.4	2,611.0	2,696.8	2,829.8	2,731.5	2,523.4	2,584.6	2,660.5	2,267.0	2,098.7	1,694.4	1,810.5
4 Net difference in inventories, first approximation		+564.6	+21.3	-793.5	+112.5	+148.6	+85.8	+133.0	-98.3	-208.1	+61.2	+75.9	-393.5	-168.3	-404.3	+116.1

Table VII-5 (Concluded)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
5 Net difference expressed in terms of sales value (i.e., multiplied by mark-up shown in Table V-3)		+731.2	+26.6	-1,009.3	+145.7	+192.7	+111.5	+172.8	-127.8	-270.9	+79.8	+99.0	-514.3	-220.8	-532.1	+157.1
6 Volume of sales, second approximation, line 1 - line 5	18,024.5[4]	22,902.8	25,488.3	20,527.1	19,890.0	21,315.0	22,268.5	23,788.3	25,560.9	25,131.6	25,844.0	27,160.5	25,102.4	20,420.1	17,242.2	17,234.5
7 Inventories, second approximation, line 6 x line 2	2,478.4	3,025.5	3,140.2	2,471.5	2,444.5	2,587.6	2,683.4	2,809.4	2,745.2	2,550.9	2,576.6	2,650.9	2,314.4	2,121.6	1,748.4	1,794.1
8 Net difference in inventories, second approximation		+547.1	+114.7	-668.7	-27.0	+143.1	+95.8	+126.0	-64.2	-194.3	+25.7	+74.3	-336.5	-192.8	-372.2	+45.7
9 Net difference expressed in terms of sales value		+708.5	+143.4	-850.6	-35.0	+185.6	+124.4	+163.7	-83.5	-253.0	+33.5	+96.9	-439.8	-253.0	-491.1	+61.8
10 Volume of sales, third approximation, line 1 - line 9	18,042.4[4]	22,925.5	25,371.5	20,368.4	20,070.7	21,352.1	22,255.6	23,797.4	25,516.6	25,113.7	25,890.3	27,162.6	25,027.9	20,452.3	17,201.2	17,329.8
11 Final (third) approximation of inventories	2,480.8	3,028.5	3,125.8	2,452.4	2,466.7	2,592.1	2,681.8	2,810.5	2,740.5	2,549.0	2,581.3	2,651.1	2,307.6	2,125.0	1,744.2	1,804.0
B Semidurable	Same as retail finished semidurable, Table V-5.															
C Durable	Summation of retail finished consumers' durable and producers' durable, Table V-5, and stocks of construction materials in the hands of retailers, Table VI-3.															

[1]1918 figure estimated at 78.7% of 1919 figure on basis of 1918-19 relationship in line 1, perishable.

[2]1918 figure estimated at 90.0% of 1919 figure on basis of 1918-19 relationship in line 1, semidurable.

[3]1918 figure estimated at 91.1% of 1919 figure on basis of 1918-19 relationship in line 1, durable.

[4]1918 figure estimated at 78.7% of 1919 figure on basis of 1918-19 relationship in line 1, total wholesale perishable. For the other years, an index derived from Table V-6, line 3d was applied to the 1929 figure as estimated (see Note D to this table).

DERIVATION OF ESTIMATES OF TOTAL WHOLESALE SALES, FIRST APPROXIMATION

(dollar values in millions)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
A Perishable																
1 Output of finished perishable (Table II-3, mfd. only)		14,311.9		10,189.2		11,481.8		13,039.5		13,241.9		14,517.5		10,597.6		8,698.0
2 Unfinished, Census Groups I, IV, V, VI (Table I-7)		1,757.9		1,104.4		1,235.6		1,537.6		1,694.3		1,841.6		1,150.5		949.1
		1,074.6		923.3		1,248.8		1,301.3		1,522.3		1,626.7		1,179.2		1,013.4
		1,290.1		1,506.1		1,724.3		1,951.0		2,159.2		2,403.1		1,847.9		1,220.4
		2,230.0		1,303.3		1,737.4		1,886.3		1,913.2		2,221.9		1,500.7		1,243.4
Poultry killing		41.7		34.7		26.4		45.5		-		130.2		97.6		66.2
3 Total, line 1 + line 2		20,706.2		15,061.0		17,454.3		19,761.2		20,530.9		22,741.0		16,373.5		13,190.5
4 Gross income of mfg. corporations, perishable (Statistics of Income)	15,486.5	21,069.4	21,410.7	14,873.9	17,585.9	19,615.2	21,267.6	24,238.8	25,766.3	26,918.4	28,207.3	29,722.4	29,405.3	21,420.4	17,585.4	17,920.0
5 Estimated output of mfd. products, perishable	15,219.5	20,706.2	21,358.5	15,061.0	16,453.9	17,454.3	18,278.8	19,761.2	20,199.9	20,530.9	21,546.9	22,741.0	22,497.8	16,373.5	13,190.8	13,190.5
6 Gross farm income, perishable	12,063.0	13,675.0	11,959.0	8,372.0	8,043.0	8,937.0	9,523.0	10,161.0	10,259.0	10,042.0	10,298.0	10,573.0	8,977.0	6,431.0	4,742.0	5,158.0
7 Mining income, perishable	1,035.8	1,295.9	2,017.4	1,433.5	1,376.5	1,716.2	1,743.5	1,915.7	2,262.3	1,905.4	1,788.7	2,056.5	1,760.2	1,062.4	1,090.3	1,001.4
8 Total production of perishable commodities, line 5 + line 6 + line 7	28,318.3	35,677.1	35,334.9	24,866.5	25,873.4	28,107.5	29,545.3	31,837.9	32,721.2	32,478.3	33,633.6	35,370.5	33,235.0	23,866.9	19,023.1	19,349.9
9 Transportation charges in current prices	1,320.2	1,897.2	1,754.1	2,415.9	2,451.8	2,457.8	2,611.7	2,531.1	2,596.3	2,774.5	2,822.5	3,006.5	3,071.9	2,740.0	2,465.7	2,390.9
10 Total production incl. transportation charges	29,638.5	37,574.3	37,089.0	27,282.4	28,325.2	30,565.3	32,157.0	34,369.0	35,317.5	35,252.8	36,456.1	38,377.0	36,306.9	26,606.9	21,488.8	21,740.8
11 Wholesale mark-up, percent	9.1	9.3	8.1	8.7	9.3	9.4	9.4	9.4	9.4	9.5	9.5	9.5	9.6	9.8	9.9	10.7
12 Total production incl. transportation charges expressed in terms of wholesale sales value	32,335.6	41,068.7	40,093.2	29,656.0	30,959.4	33,438.4	35,179.8	37,599.7	38,637.3	38,601.8	39,919.4	42,022.8	39,792.4	29,214.4	23,616.2	24,067.0
13 Index, line 12, 1929 = 100	76.9	97.7	95.4	70.6	73.7	79.6	83.7	89.5	91.9	91.9	95.0	100.0	94.7	69.5	56.2	57.3
14 Wholesale sales, 1929 and 1933												35,973.3				19,245.7
15 Estimated wholesale sales, first approximation	27,663.5	35,145.9	34,318.5	25,397.1	26,512.3	28,634.7	30,109.7	32,196.1	33,059.5	33,059.5	34,174.6	35,973.3	33,503.2	24,185.4	19,218.2	19,245.7
B Semidurable																
1 Output of mfd. finished semidurable (Table II-3)		7,522.2		5,893.8		7,546.3		7,435.9		7,668.4		7,718.4		5,076.0		3,926.8
2 Unfinished, Census Groups II, VIII, IX, XVI (Table I-7)		4,073.5		2,749.2		3,893.1		3,769.4		3,491.9		3,576.2		2,116.5		1,888.4
		380.8		215.9		389.5		479.2		410.3		463.9		227.1		187.3
		1,160.8		506.0		651.6		612.9		688.2		691.3		398.0		336.6
		331.6		229.0		309.7		316.7		370.3		393.2		260.9		171.2
3 Total, line 1 + line 2		13,468.9		9,593.9		12,790.2		12,614.1		12,629.1		12,843.0		8,078.5		6,510.3

Note A to Table VII-5 (Continued)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
4 Gross income of mfg.corporations, semidurable (Statistics of Income)	9,534.9	10,501.6	11,137.4	7,741.9	9,202.1	10,532.9	9,818.6	10,700.4	11,014.3	10,985.5	10,945.3	11,401.6	8,905.8	7,227.6	5,360.4	6,358.8
5 Estimated output of mfd. products, semidurable	12,229.1	13,468.9	14,040.9	9,593.9	11,266.2	12,790.2	11,747.4	12,614.1	12,822.2	12,629.1	12,455.3	12,843.0	9,994.3	8,078.5	5,734.3	6,510.3
6 Gross farm income, semidurable	2,064.0	2,340.0	2,046.0	1,432.0	1,376.0	1,529.0	1,668.0	1,696.0	1,242.0	1,413.0	1,447.0	1,370.0	772.0	553.0	450.0	698.0
7 Total production of semidurable commodities, line 5 + line 6	14,293.1	15,808.9	16,086.9	11,025.9	12,642.2	14,319.2	13,415.4	14,310.1	14,064.2	14,042.1	13,902.3	14,213.0	10,766.3	8,631.5	6,184.3	7,208.3
8 Transportation charges in current prices	136.5	171.7	171.0	243.0	257.8	252.3	261.5	285.6	328.9	362.3	371.3	412.2	358.5	353.9	308.7	302.4
9 Total production, incl. transportation charges	14,429.6	15,980.6	16,257.9	11,268.9	12,900.0	14,571.5	13,676.9	14,595.7	14,393.1	14,404.4	14,273.6	14,625.2	11,124.8	8,985.4	6,493.0	7,510.7
10 Wholesale mark-up, percent	8.8	9.1	7.9	8.5	9.1	9.2	9.2	9.2	9.2	9.3	9.3	9.3	9.4	9.5	9.6	10.5
11 Total production, incl. transportation charges, expressed in terms of wholesale sales value	15,699.4	17,434.8	17,542.3	12,226.8	14,073.9	15,912.1	14,935.2	15,938.5	15,717.3	15,744.0	15,601.0	15,985.3	12,170.5	9.839.0	7,116.3	8,299.3
12 Index, line 11, 1929 = 100	98.2	109.1	109.7	76.5	88.0	99.5	93.4	99.7	98.3	98.5	97.6	100.0	76.1	61.6	44.5	51.9
13 Wholesale sales, 1929 and 1933												13,437.4				6,073.7
14 Estimated wholesale sales, first approximation	13,195.5	14,660.2	14,740.8	10,279.6	11,824.9	13,370.2	12,550.5	13,397.1	13,209.0	13,235.8	13,114.9	13,437.4	9,899.7	7,735.6	5,401.4	6,073.7
C Durable																
1 Output of finished consumers' durable (Table II-3)		3,938.6		3,196.5		5,289.1		5,801.7		6,105.2		6,018.3		3,228.6		2,291.8
2 Output of finished producers' durable (Table II-3)		5,641.0		3,222.8		4,682.1		4,634.2		4,756.1		6,230.8		2,878.7		1,622.9
3 Servicing of durable commodities (Table II-3)		1,899.1		1,606.0		1,970.8		1,684.0		1,689.3		1,704.5		973.7		657.6
4 Output of construction materials (Table I-5)		3,704.9		3,063.1		4,807.0		5,094.7		4,956.1		5,010.7		2,528.1		1,533.3
5 Unfinished, Census Groups III, VII, X, XI, XII, XIII, XIV (Table I-7)		1,036.2		778.8		1,148.9		1,187.0		1,134.4		1,271.2		602.8		430.5
		1,293.5		1,196.8		1,490.0		1,692.8		1,495.3		1,711.1		973.7		798.7
		283.8		216.1		332.5		344.8		349.6		376.4		230.6		187.8
		4,020.1		2,078.9		4,542.0		4,042.4		3,741.8		4,611.9		1,984.0		1,652.2
		1,832.1		924.5		1,889.8		2,111.0		1,964.7		2,729.2		1,021.2		784.2
		1,588.7		1,079.8		1,649.2		1,645.4		1,674.8		2,046.4		931.2		631.2
		1,192.0		536.7		1,051.9		1,294.6		981.3		1,292.0		789.6		607.7
Motion pictures (Table I-8		36.7		77.4		86.4		93.6		134.3		184.1		154.4		119.3
6 Total, line 1 through line 5		26,466.7		17,977.4		28,939.7		29,626.2		28,982.9		33,186.6		16,296.6		11,317.2
7 Gross income of mfg.corporations, durable (Statistics of Income)	19,145.7	20,718.7	24,101.0	15,826.1	17,895.4	26,072.8	22,824.8	25,890.5	25,714.3	25,819.0	28,120.3	31,008.2	22,589.1	15,385.3	9,030.6	10,871.9
8 Estimated output of mfd. products, durable	24,457.3	26,466.7	29,032.1	17,977.4	20,190.7	28,939.7	25,723.3	29,626.2	29,143.6	28,982.9	30,847.2	33,186.6	24,084.6	16,296.6	9,482.7	11,317.2
9 Gross farm income, durable	392.0	445.0	389.0	272.0	262.0	291.0	311.0	329.0	331.0	306.0	314.0	182.0	148.0	106.0	106.0	113.0
10 Mining income, durable	1,751.5	1,901.5	3,121.6	1,690.2	1,949.2	2,490.2	1,939.5	2,030.8	2,183.3	1,957.0	1,889.2	2,008.0	1,560.6	1,083.8	694.5	798.3

Note A to Table VII-5 (Concluded)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
11 Total production of durable commodities line 8 + line 9 + line 10	26,600.8	28,813.2	32,542.7	19,939.6	22,401.9	31,720.9	27,973.8	31,986.0	31,657.9	31,245.9	33,050.4	35,376.6	25,793.2	17,486.4	10,283.2	12,228.5
12 Transportation charges in current prices	1,697.3	2,109.4	1,921.3	2,048.4	2,168.8	2,672.7	2,547.8	2,974.0	2,950.3	3,099.5	3,341.7	3,466.9	2,565.7	1,937.7	1,250.7	1,434.4
13 Total production, incl. transportation charges	28,298.1	30,922.6	34,464.0	21,988.0	24,570.7	34,393.6	30,521.6	34,960.0	34,608.2	34,345.4	36,392.1	38,843.5	28,358.9	19,424.1	11,533.9	13,662.9
14 Wholesale mark-up, percent	13.0	13.5	11.6	12.5	13.5	13.5	13.5	13.6	13.6	13.6	13.8	13.8	13.9	14.0	14.3	15.7
15 Total production, incl. transportation charges, expressed in terms of wholesale sales value	31,976.9	35,097.2	38,461.8	24,736.5	27,887.7	39,036.7	34,642.0	39,714.6	39,314.9	39,016.4	41,414.2	44,203.9	32,300.8	22,143.5	13,183.2	15,808.0
16 Index, line 15, 1929 = 100	72.3	79.4	87.0	56.0	63.1	88.3	78.4	89.8	88.9	88.3	93.7	100.0	73.1	50.1	29.8	35.8
17 Wholesale sales, 1929 and 1933												19,870.5				6,895.1
18 Estimated wholesale sales, first approximation	14,366.4	15,777.2	17,287.3	11,127.5	12,538.3	17,545.7	15,578.5	17,843.7	17,664.9	17,545.7	18,618.7	19,870.5	14,412.0	9,806.2	5,794.3	6,895.1

Note B to Table VII-5

DERIVATION OF TRANSPORTATION CHARGES FOR PERISHABLE, SEMIDURABLE AND DURABLE COMMODITIES

(dollar values in millions)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
A Perishable																
1 Railroad transportation charge for 1929 as percentage of producers' value[1]												8.5				
2 Total production in 1929 prices	20,490.8	24,827.5	21,519.4	24,523.2	26,536.8	28,857.8	30,271.8	29,425.0	30,666.5	32,641.5	32,941.8	35,370.5	36,764.4	32,560.6	29,631.0	30,376.6
3 Transportation charges in 1929 prices, line 1 x line 2	1,741.7	2,110.3	1,829.1	2,084.5	2,255.6	2,452.9	2,573.1	2,501.1	2,606.7	2,774.5	2,800.1	3,006.5	3,125.0	2,767.7	2,518.6	2,582.0
4 Index of transportation cost (freight revenue per ton)	75.8	89.9	95.9	115.9	108.7	100.2	101.5	101.2	99.6	100.0	100.8	100.0	98.3	99.0	97.9	92.6
5 Transportation charges in current prices, line 3 x line 4	1,320.2	1,897.2	1,754.1	2,415.9	2,451.8	2,457.8	2,611.7	2,531.1	2,596.3	2,774.5	2,822.5	3,006.5	3,071.9	2,740.0	2,465.7	2,390.9
B Semidurable																
1 Railroad transportation charge for 1929 as percentage of producers' value[1]												2.9				
2 Total production in 1929 prices	8,388.0	8,876.4	8,305.1	9,740.2	11,041.2	11,108.8	10,810.2	11,294.5	12,613.6	13,234.8	12,908.4	14,213.0	12,475.4	12,313.1	10,644.2	10,616.1
3 Transportation charges in 1929 prices, line 1 x line 2	243.3	257.4	240.8	282.5	320.2	322.2	313.5	327.5	365.8	383.8	374.3	412.2	361.8	357.1	308.7	307.9
4 Index of transportation cost (freight revenue per ton)	56.1	66.7	71.0	86.0	80.5	78.3	83.4	87.2	89.9	94.4	99.2	100.0	99.1	99.1	100.0	98.2
5 Transportation charges in current prices, line 3 x line 4	136.5	171.7	171.0	243.0	257.8	252.3	261.5	285.6	328.9	362.3	371.3	412.2	358.5	353.9	308.7	302.4
C Durable																
1 Railroad transportation charge for 1929 as percentage of producers' value[1]												9.8				
2 Total production in 1929 prices	23,436.8	24,542.8	20,968.2	18,496.8	20,858.4	27,801.0	25,998.0	30,347.2	30,440.3	31,754.0	33,828.5	35,376.6	27,675.1	20,966.9	13,116.3	15,343.2
3 Transportation charges in 1929 prices, line 1 x line 2	2,296.8	2,405.2	2,054.9	1,812.7	2,044.1	2,724.5	2,547.8	2,974.0	2,983.1	3,111.9	3,315.2	3,466.9	2,712.2	2,054.8	1,285.4	1,503.6
4 Index of transportation cost (freight revenue per ton)	73.9	87.7	93.5	113.0	106.1	98.1	100.0	100.0	98.9	99.6	100.8	100.0	94.6	94.3	97.3	95.4
5 Transportation charges in current prices, line 3 x line 4	1,697.3	2,109.4	1,921.3	2,048.4	2,168.8	2,672.7	2,547.8	2,974.0	2,950.3	3,099.5	3,341.7	3,466.9	2,565.7	1,937.7	1,250.7	1,434.4

[1]

Note C to Table VII-5

WHOLESALE MARGINS AND MARK-UPS FOR ALL COMMODITIES

(margins as percentage of volume of sales, mark-ups as percentage of cost of goods sold)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
1 General index of distributive margins	95.0	98.0	86.0	92.0	98.0	98.3	98.6	98.9	99.2	99.5	99.8	100.0	101.0	102.0	103.0	112.0
Margins																
2 Perishable[1]	8.3	8.5	7.5	8.0	8.5	8.6	8.6	8.6	8.6	8.7	8.7	8.7	8.8	8.9	9.0	9.7
3 Semidurable[1]	8.1	8.3	7.3	7.8	8.3	8.4	8.4	8.4	8.4	8.5	8.5	8.5	8.6	8.7	8.8	9.5
4 Durable[1]	11.5	11.9	10.4	11.1	11.9	11.9	11.9	12.0	12.0	12.0	12.1	12.1	12.2	12.3	12.5	13.6
Mark-ups																
5 Perishable	9.1	9.3	8.1	8.7	9.3	9.4	9.4	9.4	9.4	9.5	9.5	9.5	9.6	9.8	9.9	10.7
6 Semidurable	8.8	9.1	7.9	8.5	9.1	9.2	9.2	9.2	9.2	9.3	9.3	9.3	9.4	9.5	9.6	10.5
7 Durable	13.0	13.5	11.6	12.5	13.5	13.5	13.5	13.6	13.6	13.6	13.8	13.8	13.9	14.0	14.3	15.7

[1]The 1929 figures are the operating expense ratios derived from Table 3, U.S. Summary of Wholesale Distribution, plus an allowance for profit based on the proportion of profit to all other operating expenses for finished commodities as derived from the data in Table III-3, and Note B to it.

Note D to Table VII–5

DERIVATION OF INVENTORY-SALES RATIOS FOR 1929

(dollar figures in thousands)

I Wholesale Trade [1]

A Perishable

Lines of trade included: Insecticides; other chemicals; drugs and drug sundries (general line); drugs and drug sundries (specialty) excl. rubber goods (druggists'); toilet preparations; flowers and nursery stock; grain; livestock (other than horses and mules); tobacco (leaf); cottonseed; cotton, cottonseed and fertilizer; farm products n.e.c; farm supplies (except machinery and equipment); food products n.e.s; boxes, shooks and cooperage; firewood; other forest products; sheet music; groceries and food specialties; paper (waste); rags; florists' supplies; printers' and lithographers' supplies; art supplies; pharmacists' supplies; dry cleaners' supplies and allied products; undertakers' supplies; coal, anthracite; fuel; paper and paper products, excl. wallpaper; petroleum and petroleum products, excl. fuel oil; tobacco and tobacco products (except leaf); newspapers and magazines; oils and greases (animal and vegetable); bags and bagging; burlap; cordage and twine; baskets; flour, feed and coal; ice; smokers' supplies.

Total sales	35,973,267
Total inventories	2,200,081
Inventory-sales ratio	6.12%

B Semidurable

Lines of trade included: Amusement and sporting goods (except cameras and motion picture equipment and supplies), excl. bicycles and supplies; cameras and photographic supplies; tires and tubes; dyestuffs; dyes, dry-cleaning supplies and allied products; rubber goods (druggists'); toilet articles; dry goods and apparel, excl. clothing, secondhand; cotton; hides, skins and furs; silk (raw); wool and mohair; bristles and hair; feathers; house furnishings, excl. china, glassware and crockery, and floor coverings; general mdse; rubber (scrap); leather and leather goods (except gloves and shoes), excl. belting (leather), and luggage; rubber goods (general line); tents and awnings; textiles and textile materials, other than dry goods (general line); yarn; other textiles (excl. dry goods); artificial flowers, plants, etc; novelties; rubber, crude; misc. kinds of business (other than specified).

Total sales	13,437,395
Total inventories	1,281,113
Inventory-sales ratio	9.53%

C Durable

Lines of trade included: Bicycles and supplies; cameras and motion picture equipment and supplies, excl. cameras and photographic supplies; automobiles and other motor vehicles, excl. automobiles (used); automotive equipment; automobile parts (new); chemicals, industrial; explosives; naval stores; paints, varnishes, lacquers and enamels; electrical; horses and mules; logs, piles and posts; railroad ties; furniture; china, glassware and crockery; floor coverings; musical instruments; hardware; iron and steel scrap; junk and scrap; jewelry and optical goods; belting (leather); luggage; lumber and building materials (other than metal); machinery, equipment and supplies (except electrical), excl. florists' supplies, printers' and lithographers' supplies, art supplies, pharmacists' supplies, dry cleaners' supplies and allied products; undertakers' supplies metals and minerals (except petroleum and scrap), excl. coal anthracite and fuel; wall paper; fuel oil; plumbing and heating equipment and supplies; books and periodicals; advertising goods; boats.

Total sales	19,870,525
Total inventories	1,764,391
Inventory-sales ratio	8.88%

II Retail Trade [2]

A Perishable

Lines of trade included: The lines of trade given under finished retail perishable and also the following: feed stores (flour feed, grain, fertilizer); fertilizer dealers; farmers' supply stores; seed stores, bulbs, and nursery stock; cooperages (barrels, boxes crates, casks); coal and feed stores; grain elevators (sales at retail); office and school supply dealers; farm implement dealers with hay, grain and feed; dealers in accounting and legal forms and blank books; printers and lithographers.

Total sales	20,588,725 [3]
Total inventories	2,008,548
Inventory-sales ratio	9.76%

B Semidurable

Lines of trade included: Same as finished retail semidurable (see Note B to Table V–5).

Total sales	11,032,816 [3]
Total inventories	2,374,420
Inventory-sales ratio	21.52%

C Durable

Lines of trade included: Summation of finished consumers' durable and finished producers' durable (see Note B to Table V–5).

Total sales	11,325,623 [3]
Total inventories	2,031,391
Inventory-sales ratio	17.94%

1 Data from Table 3, *U. S. Summary of Wholesale Distribution.*

2 Data from Table 1A, *U. S. Summary of Retail Distribution.*

3 The retail sales figures here given were not used in Table VII–5 to represent the first approximation of sales in 1929. In their place were substituted figures taken from the estimates for finished commodities in Part V. It was assumed that no unfinished semidurable commodities were sold at retail. Thus the entire set of inventory calculations in Part V could be used directly. For durable the sales of producers' durable and consumers' durable commodities as estimated in Part V were combined. This procedure omitted unfinished durable, which classification was assumed to consist entirely of construction materials. Since retail inventory estimates for construction materials had been made in Part VI, they had only to be added to the durable inventories as already estimated in order to arrive at a figure representing inventories of all durable commodities.

Only in the perishable group was there a significant amount of retail sales of unfinished commodities (fertilizer, etc.). In this group the total volume of retail sales in 1929 was estimated by applying to the total summated from the Census (see above) a raising ratio obtained from the relationship between sales of finished perishable commodities as derived from the Census and our estimate for 1929 given in Part V.

Note E to Table VII–5

DERIVATION OF INVENTORY-SALES RATIOS FOR YEARS OTHER THAN 1929

For a description of the technique involved in the construction of these indexes see Note C to Table V–5.

COMMODITY GROUP	PERIODS		
	1919–1923	1924–1928	1930–1933
I Wholesale Trade			
A Perishable	The index of ratios derived from *Statistics of Income* data was adjusted by means of the average difference from 1924–26 between it and the index derived from the *Epstein* data.	The index of ratios derived from the *Epstein* data was used. The sample included coal, fuel and wood, drugs, groceries, paper, stationery, bookstores, etc., and miscellaneous wholesale trading corporations.	The index of ratios derived from *Statistics of Income* data was used after being adjusted to conform with the ratio obtained from the 1933 Census.
B Semidurable	The same index as derived for wholesale trade, semidurable finished commodities was used.		
C Durable	The same index as derived for wholesale trade, consumers' and producers' durable finished commodities was used.		
II Retail Trade			
A Perishable	The same index as derived for retail trade, perishable finished commodities was used.		
B Semidurable C Durable	No indexes were needed since the estimates of finished inventories were used as calculated in Table V–5; see also footnote 3 to Note D to Table VII–5.		

Table VII—6

BUSINESS INVENTORIES, CURRENT VALUATION, 1918–1933

The measures in this table summarize the estimates in Tables VII—1 through VII—5. A discussion of the table will be found in the Preface to Part VII, Section 4.

Table VII-6

BUSINESS INVENTORIES, CURRENT VALUATION, END OF YEAR

(millions of dollars)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
A Perishable																
1 Farmers' stocks																
a Crops (wheat, corn and oats)	2,832	3,252	2,496	1,233	1,625	1,735	1,923	1,963	1,479	1,622	1,702	1,593	1,098	821	533	892
b. Livestock	4,442	3,999	2,787	2,189	2,534	2,361	2,391	2,652	2,812	2,979	3,261	3,188	2,310	1,551	1,211	1,190
2 Mining stocks																
a Coal	183	234	245	271	175	216	240	182	176	241	157	154	103	119	89	91
b Oil and gas	110	202	225	152	166	218	256	266	253	225	190	282	199	150	137	165
3 Manufacturers' stocks																
a Food products, beverages and tobacco	1,492	2,354	1,791	1,132	1,276	1,399	1,666	1,827	1,974	2,095	2,152	2,205	1,926	1,556	1,338	1,588
b Paper, pulp and products, and printing and publishing	415	429	643	588	594	548	595	550	573	587	576	611	571	489	388	413
c. Chemicals and allied substances	923	1,137	1,423	1,047	1,622	1,638	1,472	1,725	1,922	1,522	1,697	1,911	1,894	1,700	1,386	1,399
4 Distributive stocks																
a Wholesale trade	1,648	2,126	2,069	1,622	1,797	1,794	1,842	1,830	1,958	1,979	2,055	2,202	1,931	1,622	1,292	1,338
b. Retail trade	2,481	3,028	3,126	2,452	2,467	2,592	2,682	2,810	2,740	2,549	2,581	2,651	2,308	2,125	1,744	1,804
Total stocks, perishable	14,526	16,761	14,805	10,686	12,256	12,501	13,067	13,805	13,887	13,799	14,371	14,797	12,340	10,133	8,118	8,880
B Semidurable																
1 Manufacturers' stocks																
a Textiles and textile products, and leather and leather products	2,499	2,998	2,744	2,780	3,159	3,186	3,064	3,018	2,750	2,884	2,883	2,743	2,121	1,572	1,216	1,648
b Rubber and related products	240	294	320	170	206	228	220	320	344	333	297	285	232	164	132	161
2 Distributive stocks																
a Wholesale trade	1,337	1,609	1,492	1,406	1,533	1,570	1,544	1,577	1,401	1,499	1,418	1,281	1,054	775	576	706
b Retail trade	2,174	2,887	2,860	2,274	2,394	2,673	2,481	2,640	2,654	2,652	2,608	2,560	2,145	1,697	1,267	1,392
Total stocks, semidurable	6,250	7,788	7,416	6,630	7,292	7,657	7,309	7,555	7,149	7,368	7,206	6,869	5,552	4,208	3,191	3,907
C Durable																
1 Mining stocks																
a. Metal mining	201	386	404	155	138	166	155	153	131	127	102	161	78	91	58	74
b. Non-metal mining	56	194	222	179	123	124	146	137	119	132	99	138	92	142	127	104
2 Manufacturers' stocks																
a Lumber and wood products, and stone, clay and glass products	778	964	1,256	902	930	1,042	1,075	1,141	1,263	1,231	1,178	1,189	1,111	821	635	648
b Metal products and processes	2,915	3,367	3,901	3,092	2,918	4,045	4,358	4,733	4,192	4,028	3,931	4,323	3,853	3,136	2,512	2,650
c Miscellaneous manu-																

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
3 Distributive stocks																
a Wholesale trade	1,312	1,614	1,774	1,421	1,426	1,705	1,670	1,734	1,616	1,565	1,662	1,764	1,425	1,171	985	977
b Retail trade	1,732	2,121	2,360	1,830	1,857	2,269	2,309	2,398	2,557	2,368	2,543	2,771	2,158	1,653	1,287	1,367
4 Construction stocks	905	1,094	1,361	1,212	1,132	1,233	1,282	1,453	1,591	1,607	1,400	1,670	1,081	826	931	1,128
5 Transportation and other public utilities	775	741	1,147	1,019	869	1,081	939	906	950	1,033	1,008	1,129	982	897	749	779
Total stocks, durable	9,732	11,844	13,831	10,804	10,806	13,300	12,754	13,346	13,128	12,695	12,571	13,798	11,336	9,163	7,627	8,072
D Miscellaneous																
1 Service	63	85	112	103	129	134	139	154	194	187	188	202	255	210	152	148
2 Finance	251	295	337	255	278	314	444	687	1,004	1,160	733	1,001	502	271	162	153
3 Nature of business not given	71	83	95	72	78	89	104	40	15	24	18	10	6	7	8	2
Total stocks, miscellaneous	385	463	544	430	485	537	687	881	1,213	1,371	939	1,213	763	488	322	303
Total stocks, all commodities	30,893	36,856	36,596	28,550	30,839	33,995	33,817	35,587	35,377	35,233	35,087	36,677	29,991	23,992	19,258	21,162
Total farmers' stocks	7,274	7,251	5,283	3,422	4,159	4,096	4,314	4,615	4,291	4,601	4,963	4,781	3,408	2,372	1,744	2,082
Total mining stocks	550	1,016	1,096	757	602	724	797	738	679	725	548	735	472	502	411	434
Total manufacturers' stocks	10,320	12,906	13,484	10,705	12,118	13,721	13,270	14,005	13,727	13,284	13,362	13,920	12,264	9,864	7,950	8,852
Total distributive stocks	10,684	13,385	13,681	11,005	11,474	12,603	12,528	12,989	12,926	12,612	12,867	13,229	11,021	9,043	7,151	7,584
Total all other stocks	2,065	2,298	3,052	2,661	2,486	2,851	2,908	3,240	3,754	4,011	3,347	4,012	2,826	2,211	2,002	2,210
Grand total excluding farmers' stocks	23,619	29,605	31,313	25,128	26,680	29,899	29,503	30,972	31,086	30,632	30,124	31,896	26,583	21,620	17,514	19,080
Grand total	30,893	36,856	36,596	28,550	30,839	33,995	33,817	35,587	35,377	35,233	35,087	36,677	29,991	23,992	19,258	21,162

Table VII—7

INDEXES USED TO ADJUST BUSINESS INVENTORIES FOR CHANGES IN CURRENT VALUATION, 1918–1933

On the assumption that inventories recorded in the available data are valued at cost or market, whichever lower, the price indexes needed for converting inventories to a constant price basis must refer to prices at several dates or periods within each year. For this reason, price indexes for several dates or periods are presented for each inventory group distinguished in this table.

Note A following this table describes the composition of the price indexes. Further comments on the table will be found in the Preface to Part VII, Section 4.

Table VII-7

INDEXES USED TO ADJUST BUSINESS INVENTORIES FOR CHANGES IN CURRENT VALUATION, 1929=100

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
A Perishable																
1 Farmers' stocks																
a Crops (wheat, corn and oats)				See Note A following this table												
b Livestock				See Note A following this table												
2 Mining stocks																
a Coal																
Av. Dec. and fol. Jan.	91.2	89.9	118.8	83.3	134.9	113.4	108.6	114.1	114.1	105.9	102.0	101.0	97.6	95.8	90.8	96.7
October	90.7	99.8	213.6	87.5	140.9	115.5	108.9	111.2	112.7	108.6	102.3	100.9	98.1	95.3	91.5	96.2
Av. last 6 months of year	91.7	91.1	200.6	86.5	149.1	115.1	108.1	109.4	111.9	108.6	101.6	100.2	97.8	95.1	91.1	93.4
Annual average	89.8	86.4	158.5	90.1	118.6	120.5	109.2	107.0	109.9	108.9	102.2	100.0	98.1	95.1	92.2	90.8
b Oil and gas																
Av. Dec. and fol. Jan.	192.4	211.2	232.5	152.0	120.8	104.3	114.7	129.0	131.0	92.4	102.2	96.2	71.2	55.0	58.6	72.1
October	194.2	174.2	258.3	137.0	127.9	97.6	102.7	122.6	141.5	94.7	107.0	99.3	83.3	55.0	66.5	73.9
Av. last 6 months of year	194.7	180.4	261.4	130.7	131.6	99.4	108.4	129.9	140.7	93.8	105.9	99.4	81.3	53.3	66.8	67.3
Annual average	189.8	179.5	257.4	146.4	144.3	115.8	117.1	133.2	140.3	102.0	101.0	100.0	86.3	55.4	63.7	57.5
3 Manufacturers' stocks																
a Food products, beverages and tobacco																
Av. Dec. and fol. Jan.	134.8	149.4	108.2	94.2	93.6	91.5	105.0	104.4	99.1	101.3	98.7	98.3	81.2	66.9	57.2	65.5
Av. Oct. and Nov.	132.5	136.3	126.5	87.7	92.6	95.0	99.1	105.5	100.3	100.7	100.6	100.2	87.6	71.4	60.3	65.7
Av. last 6 months of year	130.8	139.1	133.9	88.3	90.3	92.5	96.9	104.0	99.8	99.1	101.8	101.5	87.0	71.7	60.6	66.2
Annual average	126.7	136.8	143.6	90.8	87.6	92.5	92.8	103.2	100.5	98.3	102.5	100.0	90.3	74.3	61.6	61.9
b Paper, pulp and products, and printing and publishing																
Av. Dec. and fol. Jan.	136.8	148.1	183.0	100.9	117.1	113.2	121.8	117.9	106.6	104.2	100.3	99.2	94.3	89.3	81.6	93.1
October	135.6	137.2	237.8	105.9	112.4	116.6	115.8	118.8	105.4	104.9	102.5	99.8	95.7	90.6	82.6	92.7
Av. last 6 months of year	132.0	134.1	228.6	107.2	108.7	115.5	116.1	120.1	108.5	104.9	102.1	99.8	95.5	90.8	83.9	91.6
Annual average	120.0	129.4	204.4	121.0	103.0	115.7	113.3	118.3	112.5	105.5	102.8	100.0	96.9	91.6	84.9	86.2
c Chemicals and allied substances																
Av. Dec. and fol. Jan.	181.6	196.9	199.8	136.0	115.0	102.9	111.7	121.5	120.9	95.7	101.3	97.5	77.9	64.5	64.6	75.1
Annual av. x 1 + Oct. x 2	183.8	168.7	225.0	128.5	122.1	102.1	104.6	119.0	127.7	98.9	102.9	100.1	87.3	65.1	69.2	72.0
Av. last 6 months of year	184.9	172.8	226.5	121.6	121.0	99.0	105.3	121.4	127.6	96.6	103.7	99.9	85.3	63.9	69.8	71.7
Annual average	181.4	170.3	226.2	133.4	129.4	110.8	111.0	123.5	127.2	102.0	100.6	100 0	89.4	66.2	68.6	64.9
4 Distributive stocks																
Av. Dec. and fol. Jan.	145.0	159.6	131.6	96.2	99.2	94.9	107.1	108.6	104.1	100.3	99.4	98.2	81.1	67.6	60.0	68.8
November	145.2	145.6	147.8	100.5	99.3	94.8	101.9	110.0	104.9	100.4	100.6	99.3	84.6	71.1	63.4	69.2
Av. Nov. and Dec.	145.5	150.6	141.3	99.1	99.2	93.9	103.8	108.9	105.0	100.3	99.9	99.3	83.2	70.0	62.3	68.6
Av. last 6 months of year	142.4	145.8	157.8	96.2	97.6	94.6	99.3	108.2	106.0	98.8	102.2	101.1	87.0	71.0	63.6	68.6
Annual average	138.2	143.7	164.2	101.4	97.5	97.4	97.6	108.2	106.7	99.5	102.1	100.0	90.4	73.3	64.2	63.7
B Semidurable																
1 Manufacturers' stocks																
a Textiles and textile products																
Av. Dec. and fol. Jan.	149.6	199.2	104.3	100.8	122.6	137.0	121.5	112.5	97.7	105.8	104.1	95.5	74.1	59.5	52.2	78.8
Annual av. x 1 + Oct. x 2	167.6	174.5	156.0	105.8	116.6	134.0	126.8	122.5	102.5	106.8	105.1	99.1	79.5	63.6	55.0	74.1
Annual average	161.8	161.4	184.0	97.8	111.8	132.5	129.6	123.7	106.6	103.1	105.9	100.0	84.6	67.2	54.8	66.1
b Leather and leather products																
Av. Dec. and fol. Jan.	121.8	183.2	112.3	96.5	99.2	91.3	99.1	94.7	92.2	108.7	104.9	97.3	82.5	73.0	63.4	81.9
Annual av. x 1 + Oct. x 2	119.0	177.6	141.3	97.9	98.3	93.0	93.2	95.1	92.2	101.7	108.7	100.7	89.6	76.7	66.7	79.1
Annual average	115.2	159.6	157.1	100.1	95.9	95.5	93.0	96.5	91.7	98.7	111.3	100.0	91.7	78.9	66.8	74.2

Table VII-7 (Concluded)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
c Rubber and related products																
Av. Dec. and fol. Jan.	374.4	332.4	307.3	190.3	174.2	164.1	154.8	272.6	150.2	140.2	101.7	93.4	80.7	64.5	69.9	72.8
Annual av. x 1 + Oct. x 2	387.0	328.2	353.3	252.4	164.0	173.7	153.3	264.9	181.7	141.9	107.5	99.0	84.2	73.7	68.3	70.5
Annual average	378.0	337.1	350.4	256.6	174.0	181.7	155.2	222.0	193.1	145.9	115.1	100.0	87.5	74.5	64.9	68.3
2 Distributive stocks (wholesale only)																
Av. Dec. and fol. Jan.	167.9	214.4	127.9	111.5	125.9	132.9	123.6	126.2	101.3	109.5	104.1	95.7	76.4	62.7	56.1	78.8
Av. Oct. and Nov.	176.1	200.0	150.7	116.1	120.9	129.6	121.2	129.5	104.3	109.9	105.0	98.1	79.4	65.3	58.2	78.1
Annual average	170.4	178.1	193.7	113.2	114.5	128.9	124.1	126.7	111.5	106.1	107.7	100.0	86.3	70.1	58.1	67.9
C Durable																
1 Mining stocks																
a Metal mining																
Av. Dec. and fol. Jan.	144.7	135.6	122.4	89.6	103.8	111.2	107.5	103.9	100.3	95.4	98.3	97.4	85.0	76.9	73.9	82.0
Annual average	150.3	130.1	149.3	102.7	96.2	113.7	107.3	104.9	102.8	96.5	96.2	100.0	90.1	80.9	75.0	76.6
b Non-metal mining																
Av. Dec. and fol. Jan.	112.8	115.0	126.8	99.3	103.8	105.7	103.8	101.0	99.5	95.2	101.6	98.7	94.3	82.2	84.7	94.8
Annual average	108.5	110.3	126.9	111.7	100.0	107.3	105.4	102.1	100.6	96.0	99.2	100.0	97.0	86.0	82.2	88.3
2 Manufacturers' stocks																
a Lumber and wood products																
Av. Dec. and fol. Jan.	95.1	170.6	131.2	103.6	121.8	111.2	109.7	108.8	104.1	97.9	99.8	98.9	87.7	75.2	65.8	89.8
Annual av. x 2 + Oct. x 1	92.7	127.1	171.1	106.1	112.9	118.6	107.5	107.8	105.6	100.1	98.6	100.5	92.7	79.0	67.5	80.4
Annual average	92.0	120.5	175.5	108.2	110.4	120.4	108.3	108.2	106.2	100.5	98.4	100.0	94.2	80.7	68.3	76.8
b Stone, clay and glass products																
Av. Dec. and fol. Jan.	88.9	101.7	120.6	98.5	103.2	103.1	101.0	99.2	97.1	93.5	102.2	99.6	95.9	84.1	85.9	91.4
Annual av. x 1 + Oct. x 2	83.3	97.3	120.5	101.9	103.1	104.6	103.2	99.6	97.8	93.1	101.1	98.5	97.9	87.5	84.9	92.4
Annual average	79.8	95.4	115.4	106.2	99.5	103.7	102.5	99.3	98.0	93.8	99.8	100.0	99.2	89.2	84.3	89.5
c Metal products and processes																
Av. Dec. and fol. Jan.	136.5	136.9	130.3	103.1	102.5	106.0	104.5	99.2	98.2	95.5	99.3	97.3	87.0	81.6	78.4	84.1
Annual av. x 1 + Oct. x 2	140.1	132.4	146.5	110.0	102.8	106.8	103.8	100.7	100.0	95.3	97.2	99.5	88.9	83.0	79.9	81.5
Annual average	135.7	130.2	148.6	116.8	102.4	108.7	105.7	102.7	99.5	95.8	96.5	100.0	91.6	84.1	79.8	79.4
d Miscellaneous manufacturing																
Av. Dec. and fol. Jan.	115.8	153.8	130.8	103.4	112.2	108.6	107.1	104.0	101.2	96.7	99.6	98.1	87.4	78.4	72.1	87.0
Annual av. x 1 + Oct. x 2	116.7	133.0	156.6	107.0	109.0	111.8	105.2	104.1	102.6	97.6	98.0	100.2	90.1	80.2	73.4	82.8
Annual average	113.8	125.4	162.0	112.5	106.4	114.6	107.0	105.4	102.8	98.2	97.4	100.0	92.9	82.4	74.0	78.1
3 Distributive stocks (wholesale only)																
Av. Dec. and fol. Jan.	114.6	132.6	126.0	97.4	113.3	108.7	106.4	104.8	103.1	96.9	99.8	98.5	88.3	81.1	76.7	86.9
Av. Oct. and Nov.	117.8	126.5	152.9	100.4	113.4	109.6	105.4	104.9	105.4	97.1	99.0	99.4	89.4	81.4	78.0	85.9
Annual average	113.5	117.4	155.2	107.8	107.4	114.1	107.6	105.4	104.0	98.4	97.7	100.0	93.2	83.4	78.4	79.7
4 Construction stocks	See Note A following this table															
5 Transportation and other public utilities																
Av. Dec. and fol. Jan.	128.6	142.2	128.1	101.6	105.2	107.2	105.7	101.6	99.8	95.8	99.6	97.8	87.4	80.8	77.0	85.8
Annual average	127.0	127.8	151.0	112.9	102.2	110.1	106.2	103.8	101.0	96.8	97.2	100.0	92.4	83.8	78.4	79.8
D Miscellaneous																
1 Service																
Av. Dec. and fol. Jan.	104.5	136.8	136.0	111.3	113.9	113.1	110.6	107.7	104.0	102.9	99.7	99.9	94.0	82.8	77.6	85.8
Av. Oct. and Nov.	105.7	124.3	151.8	113.0	111.1	114.7	111.0	109.1	105.6	103.3	99.8	100.3	97.3	85.9	78.2	86.0
Annual average	98.9	112.3	150.3	119.8	109.7	115.4	111.2	109.3	106.0	103.4	100.8	100.0	98.3	90.0	79.6	80.4
2 Finance																
Av. Dec. and fol. Jan.	102.1	149.8	157.0	117.1	120.9	111.7	109.8	104.0	100.5	100.5	100.0	100.0	99.5	88.1	79.6	88.0
Av. Oct., Nov. and Dec.	99.4	133.3	173.6	116.1	117.1	113.0	108.5	103.9	100.5	100.5	100.0	100.0	99.5	88.3	80.6	87.8
Annual average	93.7	115.3	166.4	130.5	115.2	117.3	108.4	105.1	100.5	100.5	100.4	100.0	99.9	94.2	87.2	80.0
3 Nature of business not given																
Av. Dec. and fol. Jan.	142.1	161.7	123.2	96.7	106.4	103.7	107.2	108.6	102.0	101.2	100.5	97.5	82.8	71.4	64.8	75.0
Av. Oct., Nov. and Dec.	143.0	151.6	139.3	98.3	105.2	103.5	104.5	108.9	103.6	101.2	100.8	98.6	85.3	73.1	66.7	74.5
Annual average	137.8	145.4	162.0	102.4	101.5	105.6	102.9	108.6	104.9	100.1	101.5	100.0	90.7	76.6	68.0	69.2

Note A to Table VII—7

COMPOSITION OF THE INDEXES USED TO ADJUST INVENTORIES FOR CHANGES IN CURRENT VALUATION

For a description of the technique used in assembling these indexes see Note A to Table V—7, and Note A to Table II—6.

INVENTORY GROUP	SOURCE OF PRICE INDEX
A Perishable	
1 Farmers' stocks	
a Crops (wheat, corn and oats)	No price indexes were needed since it was possible to get quantities or numbers on farms, January 1, and prices per head as of same date from *Yearbook of Agriculture;* see Table VII—4 for actual computations.
b Livestock	
2 Mining stocks	
a Coal	Bureau of Labor Statistics wholesale price indexes for anthracite and bituminous coal.
b Oil and gas	Bureau of Labor Statistics wholesale price index for petroleum products.
3 Manufacturers' stocks	
a Food products, beverages and tobacco	Bureau of Labor Statistics wholesale price indexes: for 1918–25 indexes for grains and foods; for 1926 to date indexes for grains, foods, tobacco leaf, Ky., and tobacco products.
b Paper, pulp and products, and printing and publishing	Bureau of Labor Statistics wholesale price index for paper and pulp.
c Chemicals and allied substances	Bureau of Labor Statistics wholesale price indexes: for 1918–25 indexes for petroleum products, paint materials, chemicals and drugs; for 1926 to date for petroleum products, chemicals and drugs, paint and paint materials.
4 Distributive stocks	Combination of the Bureau of Labor Statistics wholesale price indexes derived for A—3a, b and c above.
B Semidurable	
1 Manufacturers' stocks	
a Textiles and textile products	Bureau of Labor Statistics wholesale price indexes: for 1918–25 indexes for textiles, cotton, Galveston (weighted by all cotton) and wool, Australian (weighted by all wool); for 1926 to date, indexes for textiles, cotton and wool.
b Leather and leather products	Bureau of Labor Statistics wholesale price index for hides and leather products.
c Rubber and related products	Bureau of Labor Statistics wholesale price indexes for rubber, crude, and automobile tires.
2 Distributive stocks	Combination of the Bureau of Labor Statistics wholesale price indexes as derived for B—1a, b and c. Retail indexes shown in Note A to Table V—7.
C Durable	
1 Mining stocks	
a Metal mining	Bureau of Labor Statistics wholesale price indexes for iron and steel and non-ferrous metals.
b Non-metal mining	Bureau of Labor Statistics wholesale price indexes: for 1918–30 indexes for cement and other building materials weighted equally; for 1931 to date indexes for cement and other building materials weighted by Bureau of Labor Statistics weights. The derived figures for 1931 to date were spliced to the earlier series on the basis of comparisons in 1930.
2 Manufacturers' stocks	
a Lumber and wood products	Bureau of Labor Statistics wholesale price indexes for lumber and furniture.
b Stone, clay and glass products	Bureau of Labor Statistics wholesale price indexes: for 1918–25 indexes for cement and other building materials weighted brick and tile, cement, glass, plate and window, gravel, sand and crushed stone.

INVENTORY GROUP	SOURCE OF PRICE INDEX
c Metal products and processes	Bureau of Labor Statistics wholesale price index for metals and metal products.
d Miscellaneous manufacturing	Arithmetic average of the indexes derived for the lumber and wood products, and metal products and processes groups.
) Distributive stocks	A combination of the indexes derived for A—2a, C—2a, b and c and C—3. Retail indexes shown in Note A to Table V—7 and in Note C to Table VI—1.
) Construction stocks	The derivation of the figures for stocks of construction materials in the hands of contractors, etc., and the price index used will be found in Table VI—4.
) Transportation and other public utilities	Bureau of Labor Statistics wholesale price indexes for metals and metal products and building materials.
scellaneous) Servicing	Bureau of Labor Statistics wholesale price indexes for house furnishings.
) Finance	Bureau of Labor Statistics wholesale price indexes: for 1918–25 index for furniture; for 1926 to date indexes for office furniture.
) Nature of business not given	Bureau of Labor Statistics wholesale price index for all commodities.

Table VII—8

VALUE OF BUSINESS INVENTORIES, 1929 PRICES, 1918–1933

Three different measures of the value of inventories in 1929 prices are presented in this table, resulting from the varying assumptions concerning the basis on which inventories currently reported are evaluated. The table is discussed in the Preface to Part VII, Section 4.

Table VII—9

NET CHANGES IN BUSINESS INVENTORIES, 1929 PRICES, 1919–1933

These changes are the differences between inventories at successive year-ends, obtained by direct subtraction (Table VII—8).

For discussion of this table see the Preface to Part VII, Section 5.

Table VII—10

NET CHANGES IN BUSINESS INVENTORIES, CURRENT PRICES, 1919–1933

A more exact title for this table would be: value in current prices of the net change in inventories, measured in 1929 prices. Most of the estimates are obtained by applying to the net changes in inventories in 1929 (Table VII—9) the annual average price indexes for the various commodity groups (Table VII—7). Changes in farm stocks, however, are taken directly from Table VII—4.

Comments on this table will be found in the Preface to Part VII, Section 5.

Table VII-8

VALUE OF BUSINESS INVENTORIES, 1929 PRICES

(millions of dollars)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Perishable																
1 At cost or market, whichever lower	10,262	11,888	13,091	12,818	13,201	13,984	13,038	13,454	13,656	13,942	14,281	14,984	15,643	16,573	15,827	14,646
2 At cost only	10,250	11,862	12,222	12,617	13,102	13,911	13,037	13,394	13,496	13,874	14,151	14,824	14,983	16,156	15,293	14,617
3 At cost or market, whichever lower, second variant	10,335	11,884	13,091	12,861	13,325	14,023	13,201	13,439	13,651	14,044	14,282	14,985	15,643	16,606	15,827	14,687
Semidurable																
1 At cost or market, whichever lower	3,984	4,262	5,818	6,073	6,237	6,092	6,171	6,267	6,938	6,817	6,952	7,136	7,039	6,414	5,408	5,022
2 At cost only	3,760	4,262	4,483	5,760	6,237	6,063	6,083	6,046	6,618	6,768	6,840	6,930	6,645	6,026	5,202	5,022
3 At cost or market, whichever lower, second variant	4,003	4,600	5,818	6,137	6,419	6,120	6,139	6,330	6,941	6,939	6,952	7,136	7,039	6,414	5,418	5,576
Durable																
1 At cost or market, whichever lower	8,265	9,300	10,835	10,691	10,352	12,449	12,198	13,122	13,100	13,229	12,816	14,072	12,811	11,278	9,922	9,762
2 At cost only	8,167	9,297	9,564	10,146	10,329	12,244	12,158	12,980	12,936	13,165	12,815	13,853	12,489	11,025	9,781	9,759
3 At cost or market, whichever lower, second variant	8,380	9,580	10,847	10,691	10,479	12,449	12,138	13,119	13,110	13,216	12,889	14,067	12,811	11,278	9,924	10,003
Miscellaneous																
1 At cost or market, whichever lower	362	345	375	387	427	485	634	842	1,198	1,360	938	1,213	782	571	413	348
2 At cost only	362	345	336	384	427	481	634	840	1,196	1,359	939	1,212	773	561	407	348
3 At cost or market, whichever lower, second variant	384	389	375	385	436	485	636	841	1,198	1,361	938	1,213	782	571	413	378
Total																
1 At cost or market, whichever lower	22,873	25,795	30,119	29,969	30,217	33,010	32,041	33,685	34,902	35,348	34,987	37,405	36,275	34,836	31,570	29,778
2 At cost only	22,539	25,766	26,605	28,907	30,095	32,699	31,912	33,260	34,246	35,166	34,745	36,819	34,890	33,768	30,683	29,746
3 At cost or market, whichever lower, second variant	23,102	26,453	30,131	30,074	30,659	33,077	32,114	33,729	34,900	35,560	35,061	37,401	36,275	34,869	31,582	30,644
Farmers'																
1 At cost or market, whichever lower	5,215	5,307	6,123	5,459	5,319	5,310	4,558	5,134	4,667	4,722	4,847	4,777	4,624	5,124	5,473	4,928
2 At cost only	5,215	5,307	6,123	5,459	5,319	5,310	4,558	5,134	4,667	4,722	4,847	4,777	4,624	5,124	5,473	4,938
3 At cost or market, whichever lower, second variant	5,215	5,307	6,123	5,459	5,319	5,310	4,558	5,134	4,667	4,722	4,847	4,777	4,624	5,124	5,473	4,938

Table VII-8 (Concluded)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Mining																
1 At cost or market, whichever lower	450	847	808	789	534	680	756	663	599	743	546	752	574	689	566	538
2 At cost only	445	821	648	732	520	672	753	660	580	730	537	736	526	674	535	532
3 At cost or market, whichever lower, second variant	449	843	808	794	534	676	744	655	600	743	547	753	574	698	566	557
Manufacturers'																
1 At cost or market, whichever lower	7,702	8,892	10,447	10,412	11,244	12,625	12,389	13,067	13,408	13,346	13,379	14,301	14,793	13,733	11,956	11,675
2 At cost only	7,501	8,892	8,597	10,007	11,154	12,416	12,295	12,785	13,050	13,242	13,244	13,957	13,975	13,242	11,490	11,664
3 At cost or market, whichever lower, second variant	7,787	9,143	10,459	10,514	11,457	12,698	12,369	13,065	13,405	13,443	13,418	14,296	14,793	13,757	11,968	12,082
Trade																
1 At cost or market, whichever lower	7,664	8,928	10,331	10,611	10,714	11,777	11,599	11,737	12,535	12,414	12,815	13,521	13,156	12,555	10,912	9,949
2 At cost only	7,536	8,925	9,001	10,114	10,696	11,714	11,571	11,618	12,269	12,362	12,716	13,321	12,706	12,043	10,545	9,934
3 At cost or market, whichever lower, second variant	7,787	9,295	10,331	10,611	10,934	11,775	11,702	11,792	12,535	12,528	12,849	13,521	13,156	12,555	10,912	10,359
All Other																
1 At cost or market, whichever lower	1,842	1,821	2,410	2,698	2,406	2,618	2,739	3,084	3,693	4,123	3,400	4,054	3,128	2,735	2,663	2,678
2 At cost only	1,842	1,821	2,236	2,595	2,406	2,587	2,735	3,063	3,680	4,110	3,401	4,028	3,059	2,685	2,640	2,678
3 At cost or market, whichever lower, second variant	1,864	1,865	2,410	2,696	2,415	2,618	2,741	3,083	3,693	4,124	3,400	4,054	3,128	2,735	2,663	2,708
Total excl. Farmers'																
1 At cost or market, whichever lower	17,658	20,488	23,996	24,510	24,898	27,700	27,483	28,551	30,235	30,626	30,140	32,628	31,651	29,712	26,097	24,840
2 At cost only	17,324	20,459	20,482	23,448	24,776	27,389	27,354	28,126	29,579	30,444	29,898	32,042	30,266	28,644	25,210	24,808
3 At cost or market, whichever lower, second variant	17,887	21,146	24,008	24,615	25,340	27,767	27,556	28,595	30,233	30,838	30,214	32,624	31,651	29,745	26,109	25,706
Total																
1 At cost or market, whichever lower	22,873	25,795	30,119	29,969	30,217	33,010	32,041	33,685	34,902	35,348	34,987	37,405	36,275	34,836	31,570	29,778
2 At cost only	22,539	25,766	26,605	28,907	30,095	32,699	31,912	33,260	34,246	35,166	34,745	36,819	34,890	33,768	30,683	29,746
3 At cost or market, whichever lower, second variant	23,102	26,453	30,131	30,074	30,659	33,077	32,114	33,729	34,900	35,560	35,061	37,401	36,275	34,869	31,582	30,644

Table VII-9

NET CHANGES IN BUSINESS INVENTORIES, 1929 PRICES

(millions of dollars)

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Perishable															
1 At cost or market, whichever lower	+1,626	+1,203	-275	+384	+785	-949	+416	+202	+287	+341	+702	+660	+929	-746	-1,181
2 At cost only	+1,611	+360	+395	+485	+809	-874	+357	+102	+378	+278	+673	+160	+1,172	-863	-677
3 At cost or market, whichever lower, second variant	+1,548	+1,207	-230	+464	+698	-822	+238	+212	+393	+239	+703	+659	+961	-778	-1,140
Semidurable															
1 At cost or market, whichever lower	+277	+1,556	+254	+163	-145	+80	+90	+671	-121	+136	+183	-97	-624	-1,006	-386
2 At cost only	+502	+222	+1,276	+477	-174	+20	-37	+572	+150	+72	+90	-284	-619	-824	-180
3 At cost or market, whichever lower, second variant	+597	+1,218	+319	+281	-299	+19	+192	+611	-2	+12	+184	-97	-624	-997	+158
Durable															
1 At cost or market, whichever lower	+1,038	+1,534	-143	-339	+2,095	-250	+925	-10	+116	-412	+1,255	-1,263	-1,535	-1,355	-159
2 At cost only	+1,130	+267	+583	+182	+1,915	-86	+823	-44	+229	-350	+1,038	-1,365	-1,463	-1,244	-23
3 At cost or market, whichever lower, second variant	+1,202	+1,267	-155	-213	+1,969	-310	+982	-7	+104	-326	+1,177	-1,258	-1,534	-1,353	+80
Miscellaneous															
1 At cost or market, whichever lower	-18	+30	+22	+40	+58	+149	+207	+357	+160	-421	+274	-431	-211	-158	-64
2 At cost only	-17	-9	+48	+43	+54	+153	+206	+356	+163	-420	+273	-439	-212	-154	-59
3 At cost or market, whichever lower, second variant	+5	-14	+10	+51	+49	+151	+205	+357	+163	-423	+275	-431	-211	-158	-35
Total															
1 At cost or market, whichever lower	+2,923	+4,323	-142	+248	+2,793	-970	+1,644	+1,220	+442	-356	+2,414	-1,131	-1,441	-3,265	-1,790
2 At cost only	+3,226	+840	+2,302	+1,187	+2,604	-787	+1,349	+986	+920	-420	+2,074	-1,928	-1,122	-3,085	-939
3 At cost or market, whichever lower, second variant	+3,352	+3,678	-56	+583	+2,417	-962	+1,617	+1,173	+658	-498	+2,339	-1,127	-1,408	-3,286	-937
Farmers'															
1 At cost or market, whichever lower	+91	+816	-664	-140	-9	-752	+576	-467	+55	+126	-70	-153	+499	+349	-535
2 At cost only	+91	+816	-664	-140	-9	-752	+576	-467	+55	+126	-70	-153	+499	+349	-535
3 At cost or market, whichever lower, second variant	+91	+816	-664	-140	-9	-752	+576	-467	+55	+126	-70	-153	+499	+349	-535
Mining															
1 At cost or market, whichever lower	+400	-39	-20	-255	+147	+75	-91	-64	+143	-197	+205	-178	+115	-123	-27
2 At cost only	+376	-173	+84	-212	+152	+81	-93	-80	+150	-193	+199	-210	+148	-139	-3

TABLE VII-9 (Concluded)

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
3 At cost or market, whichever lower, second variant	+396	-35	-14	-260	+141	+68	-88	-54	+142	-196	+205	-179	+124	-132	-8
Manufacturers'															
1 At cost or market, whichever lower	+1,188	+1,555	-37	+835	+1,379	-236	+676	+342	-63	+34	+920	+492	-1,060	-1,777	-279
2 At cost only	+1,391	-295	+1,410	+1,147	+1,262	-121	+490	+265	+192	+2	+713	+18	-733	-1,752	+174
3 At cost or market, whichever lower, second variant	+1,356	+1,316	+55	+943	+1,241	-329	+696	+340	+38	-25	+878	+497	-1,036	-1,789	+114
Trade															
1 At cost or market, whichever lower	+1,266	+1,402	+280	+101	+1,064	-179	+139	+798	-120	+402	+706	-366	-601	-1,643	-963
2 At cost only	+1,389	+77	+1,112	+582	+1,018	-143	+47	+651	+93	+354	+605	-614	-662	-1,498	-612
3 At cost or market, whichever lower, second variant	+1,508	+1,036	+280	+322	+841	-73	+91	+743	-7	+320	+672	-366	-601	-1,643	-553
All Other															
1 At cost or market, whichever lower	-22	+589	+299	-293	+212	+122	+344	+611	+427	-721	+653	-926	-394	-71	+14
2 At cost only	-21	+415	+360	-190	+181	+148	+329	+617	+430	-709	+627	-969	-374	-45	+37
3 At cost or market, whichever lower, second variant	+1	+545	+287	-282	+203	+124	+342	+611	+430	-723	+654	-926	-394	-71	+45
Total excl. Farmers'															
1 At cost or market, whichever lower	+2,832	+3,507	+522	+388	+2,802	-218	+1,068	+1,687	+387	-482	+2,484	-978	-1,940	-3,614	-1,255
2 At cost only	+3,135	+24	+2,966	+1,327	+2,613	-35	+773	+1,453	+865	-546	+2,144	-1,775	-1,621	-3,434	-404
3 At cost or market, whichever lower, second variant	+3,261	+2,862	+608	+723	+2,426	-210	+1,041	+1,640	+603	-624	+2,409	-974	-1,907	-3,635	-402
Total															
1 At cost or market, whichever lower	+2,923	+4,323	-142	+248	+2,793	-970	+1,644	+1,220	+442	-356	+2,414	-1,131	-1,441	-3,265	-1,790
2 At cost only	+3,226	+840	+2,302	+1,187	+2,604	-787	+1,349	+986	+920	-420	+2,074	-1,928	-1,122	-3,085	-939
3 At cost or market, whichever lower, second variant	+3,352	+3,678	-56	+583	+2,417	-962	+1,617	+1,173	+658	-498	+2,339	-1,127	-1,408	-3,286	-937

Table VII-10

NET CHANGES IN BUSINESS INVENTORIES, CURRENT PRICES

(millions of dollars)

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Perishable															
1 At cost or market, whichever lower	+2,438	+2,143	-9	+614	+828	-907	+533	+410	+310	+358	+702	+580	+574	-623	-678
2 At cost only	+2,434	+717	+677	+685	+866	-836	+468	+280	+402	+293	+673	+130	+730	-701	-357
3 At cost or market, whichever lower, second variant	+2,325	+2,150	+54	+672	+747	-795	+337	+429	+416	+253	+703	+579	+595	-644	-653
Semidurable															
1 At cost or market, whichever lower	+425	+2,845	+237	+204	-182	+103	+83	+817	-121	+146	+183	-87	-451	-613	-277
2 At cost only	+786	+427	+1,287	+566	-221	+34	-73	+671	+175	+78	+90	-253	-450	-500	-134
3 At cost or market, whichever lower, second variant	+938	+2,231	+302	+331	-370	+29	+222	+731	+3	+14	+184	-88	-451	-607	+103
Durable															
1 At cost or market, whichever lower	+1,289	+2,340	-189	-329	+2,303	-274	+955	-2	+114	-403	+1,255	-1,191	-1,300	-1,091	-123
2 At cost only	+1,405	+385	+606	+204	+2,095	-99	+854	-39	+223	-341	+1,037	-1,285	-1,244	-1,004	-15
3 At cost or market, whichever lower, second variant	+1,486	+1,928	-200	-195	+2,158	-340	+1,016	+1	+103	-319	+1,177	-1,186	-1,300	-1,089	+66
Miscellaneous															
1 At cost or market, whichever lower	-20	+47	+15	+45	+67	+161	+217	+361	+161	-422	+274	-430	-198	-134	-51
2 At cost only	-19	-17	+59	+48	+62	+165	+215	+360	+164	-422	+273	-440	-200	-131	-47
3 At cost or market, whichever lower, second variant	+6	-25	+13	+56	+57	+163	+214	+362	+164	-425	+275	-432	-199	-134	-27
Total															
1 At cost or market, whichever lower	+4,132	+7,375	+54	+534	+3,016	-917	+1,788	+1,586	+464	-321	+2,414	-1,128	-1,375	-2,461	-1,129
2 At cost only	+4,606	+1,512	+2,629	+1,503	+2,802	-736	+1,464	+1,272	+964	-392	+2,073	-1,848	-1,164	-2,336	-553
3 At cost or market, whichever lower, second variant	+4,755	+6,284	+169	+864	+2,592	-943	+1,789	+1,523	+686	-477	+2,339	-1,127	-1,355	-2,474	-511
Farmers'															
1 At cost or market, whichever lower	+244	+1,467	-514	-47	+15	-695	+713	-315	+73	+139	-70	-146	+280	+125	-255
2 At cost only	+244	+1,467	-514	-47	+15	-695	+713	-315	+73	+139	-70	-146	+280	+125	-255
3 At cost or market, whichever lower, second variant	+244	+1,467	-514	-47	+15	-695	+713	-315	+73	+139	-70	-146	+280	+125	-255
Mining															
1 At cost or market, whichever lower	+498	-85	-29	-278	+173	+82	-105	-74	+149	-199	+205	-167	+102	-94	-24
2 At cost only	+481	-301	+71	-239	+179	+89	-108	-97	+156	-195	+199	-195	+117	-102	-11

TABLE VII-10 (Concluded)

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
3 At cost or market, whichever lower, second variant	+491	-74	-21	-285	+167	+74	-102	-61	+148	-198	+205	-168	+107	-100	-13
Manufacturers'															
1 At cost or market, whichever lower	+1,684	+2,678	+34	+1,041	+1,474	-275	+684	+504	-60	+53	+920	+442	-883	-1,281	-209
2 At cost only	+1,997	-535	+1,529	+1,363	+1,342	-167	+480	+368	+212	+16	+713	+17	-657	-1,267	+98
3 At cost or market, whichever lower, second variant	+1,927	+2,273	+143	+1,132	+1,317	-386	+729	+488	+42	-13	+878	+446	-867	-1,288	+73
Trade															
1 At cost or market, whichever lower	+1,732	+2,416	+261	+109	+1,118	-160	+132	+848	-120	+402	+706	-360	-526	-1,134	-656
2 At cost only	+1,910	+180	+1,158	+612	+1,065	-122	+31	+686	+98	+353	+604	-585	-571	-1,036	-418
3 At cost or market, whichever lower, second variant	+2,093	+1,791	+261	+344	+867	-69	+88	+787	-2	+314	+672	-360	-526	-1,134	-355
All Other															
1 At cost or market, whichever lower	-26	+899	+302	-291	+236	+131	+364	+623	+422	-716	+653	-897	-348	-77	+15
2 At cost only	-26	+631	+385	-186	+201	+159	+348	+630	+425	-705	+627	-939	-333	-56	+33
3 At cost or market, whichever lower, second variant	less than 0.5	+827	+300	-280	+226	+133	+361	+624	+425	-719	+654	-899	-349	-77	+39
Total excl. Farmers'															
1 At cost or market, whichever lower	+3,888	+5,908	+568	+581	+3,001	-222	+1,075	+1,901	+391	-460	+2,484	-982	-1,655	-2,586	-874
2 At cost only	+4,362	+45	+3,143	+1,550	+2,787	-41	+751	+1,587	+891	-531	+2,143	-1,702	-1,444	-2,461	-298
3 At cost or market, whichever lower, second variant	+4,511	+4,817	+683	+911	+2,577	-248	+1,076	+1,838	+613	-616	+2,409	-981	-1,635	-2,599	-256
Total															
1 At cost or market, whichever lower	+4,132	+7,375	+54	+534	+3,016	-917	+1,788	+1,586	+464	-321	+2,414	-1,128	-1,375	-2,461	-1,129
2 At cost only	+4,606	+1,512	+2,629	+1,503	+2,802	-736	+1,464	+1,272	+964	-392	+2,073	-1,848	-1,164	-2,336	-553
3 At cost or market, whichever lower, second variant	+4,755	+6,284	+169	+864	+2,592	-943	+1,789	+1,523	+686	-477	+2,339	-1,127	-1,355	-2,474	-511

Table VII—11

CHANGES IN STOCKS OF MONETARY METALS, CURRENT AND 1929 PRICES, 1919–1933

This table shows the changes in the stocks of gold and silver not included under business inventories. The derivation of the estimates is described in Note A following the table. For comments see Preface to Part VII, Section 6.

Table VII-11

CHANGES IN STOCKS OF MONETARY METALS

(millions of dollars)

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Current Prices															
1 Changes in stocks of gold	-166.0	-68.0	+734.0	+269.0	+315.0	+255.0	-100.0	+93.0	-113.0	-238.0	+143.0	+309.0	-133.0	+53.0	-190.0
2 Changes in stocks of silver bullion held in mints and assay offices	+1.5	+17.3	-2.8	-5.4	+3.7	-.6	-11.9	-3.4	-.3	-.3	-.4	+1.4	+1.6	+.8	+10.0
3 Changes in stocks of silver coin	-91.6	+9.1	+43.9	+38.7	+32.2	+10.0	+9.6	+8.6	+3.6	+2.5	+2.5	+.3	-.7	-.4	-1.8
Total	-256.1	-41.6	+775.1	+302.3	+350.9	+264.4	-102.3	+98.2	-109.7	-235.8	+145.1	+310.7	-132.1	+53.4	-181.8
1929 Prices															
1 Changes in stocks of gold	-166.0	-68.0	+734.0	+269.0	+315.0	+255.0	-100.0	+93.0	-113.0	-238.0	+143.0	+309.0	-133.0	+53.0	-190.0
2 Changes in stocks of silver bullion held in mints and assay offices	+.7	+13.9	-2.4	-4.4	+3.1	-.5	-9.2	-3.3	-.3	-.3	-.5	+2.4	+2.9	+1.7	+15.2
3 Changes in stocks of silver coin	-43.2	+4.7	+36.7	+29.9	+26.4	+7.9	+7.3	+7.4	+3.4	+2.3	+2.5	+.5	-1.4	-.7	-2.8
Total	-208.5	-49.4	+768.3	+294.5	+344.5	+262.4	-101.9	+97.1	-109.9	-236.0	+145.0	+311.9	-131.5	+54.0	-177.6

DERIVATION OF CHANGES IN STOCKS OF MONETARY METALS[1]

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
I Stocks of gold (millions of dollars)																
1 Total stocks of gold, Dec. 31	3,160	2,994	2,926	3,660	3,929	4,244	4,499	4,399	4,492	4,379	4,141	4,284	4,593	4,460	4,513	4,323
2 Changes in total stocks of gold[2]		-166	-68	+734	+269	+315	+255	-100	+93	-113	-238	+143	+309	-133	+53	-190
II Stocks of silver bullion held in mints and assay offices																
1 Stocks of silver bullion, Dec. 31 (thousands of fine ounces)	14,078	15,465	41,650	37,154	28,772	34,630	33,744	16,461	10,213	9,703	9,231	8,361	12,835	18,328	21,565	50,241
2 Changes in stocks of silver bullion (thousands of ounces)		+1,387	+26,185	-4,496	-8,382	+5,858	-886	-17,283	-6,248	-510	-472	-870	+4,474	+5,493	+3,237	+28,676
3 Av. annual price per fine ounce of silver in N.Y. (dollars)		1.12	1.02	.63	.68	.65	.67	.69	.62	.57	.58	.53	.38	.29	.28	.35
4 Av. Dec. and fol. Jan. price (dollars)		1.33	.66	.66	.65	.64	.69	.69	.55	.58	.57	.47	.31	.30	.26	.44
5 Changes in current prices, line 2 x line 3 or 4 whichever lower (thousands of dollars)		+1,553	+17,282	-2,832	-5,448	+3,749	-594	-11,925	-3,436	-291	-269	-409	+1,387	+1,593	+842	+10,037
6 Changes in 1929 prices line 2 x 1929 av. price shown in line 3 (thousands of dollars)		+735	+13,878	-2,383	-4,442	+3,105	-470	-9,160	-3,311	-270	-250	-461	+2,371	+2,911	+1,716	+15,198
III Stocks of silver coin																
1 Stocks of silver coin, Dec. 31 (thousands of dollars)	642,391	537,056	548,558	638,085	711,073	775,396	794,628	812,481	830,500	838,706	844,360	850,553	851,676	848,322	846,702	839,961
2 Changes in stocks of silver coin (thousands of dollars)		-105,335	+11,502	+89,527	+72,988	+64,323	+19,232	+17,853	+18,019	+8,206	+5,654	+6,193	+1,123	-3,354	-1,620	-6,741
3 Bullion value of the silver dollar at annual av. price of silver (dollars)		.87	.79	.49	.53	.50	.52	.54	.48	.44	.45	.41	.30	.22	.22	.27
4 Changes expressed in av. current bullion values, line 2 x line 3 (thousands of dollars)		-91,641	+9,087	+43,868	+38,684	+32,162	+10,001	+9,641	+8,649	+3,611	+2,544	+2,539	+337	-738	-356	-1,820
5 Changes expressed in av. 1929 bullion value, line 2 x 1929 value in line 3 (thousands of dollars)		-43,187	+4,716	+36,706	+29,925	+26,372	+7,885	+7,320	+7,388	+3,364	+2,318	+2,539	+460	-1,375	-664	-2,764

[1] The basic data on gold and silver were obtained from the Annual Reports of the Director of the Mint.

[2] Since the official price of gold remained constant from 1918 to 1933, the changes in current and in 1929 prices are identical.