

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: The Price Statistics of the Federal Government

Volume Author/Editor: Report of the Price Statistics Review Committee

Volume Publisher: NBER

Volume ISBN: 0-87014-072-8

Volume URL: <http://www.nber.org/books/repo61-1>

Publication Date: 1961

Chapter Title: A Study in Validity: BLS Wholesale Price Quotations

Chapter Author: John Flueck

Chapter URL: <http://www.nber.org/chapters/c6498>

Chapter pages in book: (p. 419 - 458)

STAFF PAPER 9

A STUDY IN VALIDITY: BLS WHOLESALE PRICE QUOTATIONS¹

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I believe these tables will be found, not only confirmatory of the aphorism that "the world is much ruled by the belly," but strongly suggestive of the conclusion that the history of prices . . . may, in the order of practical importance to mankind, take precedence of the history of politics.—J. T. DANSON, *JRSS*, 1850.

Every since Fleetwood² in 1703 became concerned with measuring the purchasing power of the English pound and Dutot³ in 1738, using a more refined total sum method, compared the prices of two periods (reigns of Louis XII and Louis XIV), the precision of index numbers has been seriously questioned. The controversy has ranged from David Ricardo, who expressed doubt about ever being able to measure changes in the average price level, to Irving Fisher, who in 1922 felt the total error of the U.S. Bureau of Labor Statistics Wholesale Price Index was "usually within one or two percent."⁴

The BLS itself has had little to say about the overall precision of the WPI except to invoke the strong law of large numbers⁵ or conspicuously to avoid the subject. Such an omission ought to be warning enough as to the complexity of the problem.

Clearly the precision of a price index number depends in part on the validity of the actual price data. It is with this most important problem, the validity of the individual price observations, that this paper deals.

Upon first note, the importance of this problem may not be realized or at least be greatly underestimated. Fisher himself felt that collected price data might err very little from the actual transaction price, "say, less than 1/10 of 1%"⁶ in the case of the WPI.

Wesley C. Mitchell, on the other hand, in a 1915 BLS Bulletin stated that the collection of accurate price data was not only the most "perplexing" step in constructing an index but also the most important

¹ This is part of a study done as a Fellow of the Walgreen Foundation at the University of Chicago.

² W. Fleetwood, *Chronicon Preciosum* (London, 1707).

³ Dutot, *Reflexions Politiques sur les Finances et le Commerce* (Hague, 1738).

⁴ Irving Fisher, *The Making of Index Numbers* (Cambridge, 1922), p. 344.

⁵ "The Bureau is currently experimenting with several approaches to the problem of measuring the reliability of this index, but results . . . will not be available for some time. However, experience with the index over a long period of time suggests that the index becomes increasingly reliable as the group of prices covered is larger." Bureau of Labor Statistics, Department of Labor, *Techniques of Preparing Major BLS Statistical Series*, Bulletin 1168, December 1954, p. 92.

⁶ The errors of the Bureau of Labor Statistics Wholesale Price Index "are probably the same as for the War Industries Board": (1) formula—"usually less than ¼ of 1% and at most, say ½ of 1%"; (2) assortment—"say, less than 1%"; (3) numbers of commodities—"say, less than 1%"; (4) data—"say, less than ½ of 1%." Fisher, *op. cit.*, pp. 342-344.

irrespective of the quantity of the literature dealing with the other two areas (weighting and form of the index function).⁷

USES AND COLLECTION OF THE WPI

The BLS has claimed three main uses of the index: first, as a measure of general price movements at other than the retail level; second, as a measure of price movements in particular markets or commodities, whereby its utilization as a deflator of certain components of the gross national product estimates and as an escalator in long-term contracts (construction contracts, production contracts, commercial leases, or supply contracts); third, as an indicator of market prices of specific commodities for both buyers and sellers.⁸

From an academic standpoint the WPI, or at least components of it, find great use not only as deflators of many different time series, but also as a measure of the flexibility of prices. This has been the case in some studies of monopoly power. Therefore, any attempt by an industrial group to present a more stable picture of its prices than actually exist might ironically result in strong public policy being directed against the industry.

In 1891 when Professor Roland Falkner, at the behest of the Senate Finance Committee, set out to see if wages or prices had fallen since the Civil War, he not only collected price data from trade journals and manufacturers but also from merchants. Hence it appears he collected both prices offered and prices paid.

By January 1958, the price quotations used in constructing the index were as far as possible taken from "the first significant commercial transaction in the U.S.," by the following methods:

	<i>Percent of Price Quotations</i>
1. Company reports.....	87.85
2. Trade publications.....	7.76
3. Government agencies.....	4.22
4. Trade associations.....	0.17

A company report is a detailed confidential price questionnaire which is mailed monthly from the producer or manufacturer (seller) to the BLS.

Trade publications are supposedly those which are recognized as "reliable" by the industry in question, and the BLS further mentions that "some" independent spot checks are made of the trade publications' printed prices. Nothing is said as to the frequency of these checks. No indication is given as to the method (if any) utilized in checking trade associations. In the case of some commodities (agricultural products, fish, etc.) other government agencies are already officially collecting and publishing prices.

⁷ "The reliability of an index number obviously depends upon the judgment and accuracy with which the original price quotations were collected. This field work is not only fundamental, it is also laborious, expensive, and perplexing beyond any other part of the whole investigation. Only those who have tried to gather from the original sources quotations for many commodities over a long series of years appreciate the difficulties besetting the task. . . . To judge from the literature about index numbers, one would think that the difficult and important problems concern methods of weighting and averaging. But those who are practically concerned with the whole process of making an index number from start to finish rate this office work lightly in comparison with the field work of getting the original data." BLS Bulletin 173, *Index Numbers of Wholesale Prices in the U.S. and Foreign Countries*, Department of Labor, 1915, p. 27.

⁸ BLS Bulletin 1168 pp. 82-83; and H. E. Riley, "The Price Indexes of the Bureau of Labor Statistics." 82nd Congress, 2nd Session Compendium, *The Relationship of Prices to Economic Stability and Growth*, March 31, 1958, p. 114.

Hence, the BLS collects prices as quoted by the sellers themselves, their trade associations, or trade journals. The prices are supposedly samples of quotations which have been extended to public and private enterprises, regional governments, and the Federal Government.⁹

LIST PRICES AND DEPARTURES

Of the two prime sources of price quotations, buyers and sellers, one might expect that there would be no systematic difference between price quotations due to source. However, if sellers quote list prices¹⁰ and buyers quote actual transaction prices, the resulting difference (as will be shown) may be large for many commodity categories.

Rationale for the existence of list prices might take one or more of the following forms:

1. Many areas of the primary market (loosely defined as the first large-volume transaction) are noticeably marked by a high degree of homogeneity of product, relatively little advertising, and relatively few (2-10) sellers. If price changes on the part of one firm have no significant effect upon the prices of other firms in the industry, then the firm faces a demand curve of high elasticity with small changes in price having large effects on sales. If the firms in the industry are involved in a cartel arrangement, it usually pays for a member of the cartel to "shade" prices a bit lower than the cartel (list?) price. In these situations, the use of a list price allows sellers to inform buyers as to their presence in the market, to present a frame of reference (usually an upper bound) from which possible deductions (or in a few cases, additions) may occur, and to achieve these ends without actually disclosing their present transaction price or prices to competitors.

2. On grounds of price discrimination one might justify the use of list prices. By setting a price for some time period equal to or above the highest expected future price, the seller can clandestinely discriminate between individual buyers by the use of discounts, rebates, etc., with no fear of adverse customer repercussions due to comparison with published prices. The seller of course still bears the risk of buyers comparing prices.

3. In attempting to secure collusive action of sellers, a detailed schedule of list prices (either delivered or f.o.b. list prices with rules for determining freight) may be used. While this method of cartelizing has the advantages of simplicity and low operation costs, it encounters the difficulty (except in public auctions) of policing the participants.

4. The use of list prices may be based on costs. In markets where sellers have many agents in widely dispersed areas, the costs of contacting the "price makers," costs of repetitive price calculations for every possible combination of products, services, and terms, and the resultant costs of informing the selling agents of today's price may be prohibitive. Costs of changing list prices are relatively low, as all selling agents are merely notified of new discount terms. Additional discounts may be granted on factors best assessed by the selling agents themselves (i.e., services, likelihood of complaints, promptness of payment, etc.).

⁹ "Normal purchases of civilian goods by the Government (including the military departments), which are produced in the private sector, shall be included in the weight universe." BLS Memorandum, *WPI Universe*, Nov. 18, 1957.

¹⁰ I define list price to be a seller's price which is either publicly announced through trade journals, associations, newsheets, or given in a price schedule circulated to a customer in advance of an actual transaction.

In the above rationales, list prices are usually an upper bound (and not necessarily a least one) on actual transaction prices, the latter varying greatly from the former, as will be seen later. Methods of concealing actual transaction prices are numerous and manifold.

One method is that sellers will quote the highest price they received during the period in question, and usually these prices will apply to small-lot sizes which may or may not be specified. Also the nonstipulation of delivery terms (freight equalized, freight allowed, freight prepaid on specified amounts, f.o.b. destination) allows variability in the actual f.o.b. plant transaction price. Evidence of these practices was brought to public attention by the BLS in its "Supplementary Inquiry on the WPI Price Reports."¹¹

Another common method in steel, petroleum, and no doubt other markets is to ship more than the invoiced quantity, thereby reducing the actual transaction price per unit.¹²

In the chemical industry, the use of different trade names for the exact same commodity allows price discrimination to go undetected.¹³

Apparently the most popular and widely used method is to offer discounts of varying degrees (depending on the market supply and demand situation) from the list price which is quoted in trade journals, newspapers, by trade associations, and, unfortunately for many commodities, the WPI. For discounting appears to be very common in normal markets, rampant in weak (buyers') markets, and zero or negative in strong (sellers') markets. Examples of these practices are legion:

Gasoline is going through a period of "watchful waiting," refiners say. There are unconfirmed reports that most grades would find sellers to bids of "0.5¢ off" (per gallon). One source declares buyers' bids for quantities for shipment over balance of the year likely could get even wider discounts.—*Platts Daily Oilgram*, March 10, 1958.

A petroleum trade journal gives details of discounting:

"One can no longer pretend that present postings even remotely reflect the true market price," mentions an important oil executive. . . . It would still be foolhardy, of course, to predict an actual imminent cut in world crude postings—if only because no large oil company has any real desire to take such a lead. . . . Nor is anyone anxious to face the uproar such a move would undoubtedly precipitate in the producing countries of the Middle East and in Venezuela. . . .

Sales at substantial discounts below posted prices are nothing new at either of these two main world oil export centers. Offerings at 75¢ to 85¢ a barrel off postings in Venezuela have become routine. So have discounts of 20¢ to 35¢ at the Persian Gulf. . . . Sharp discounting is no longer confined

¹¹ "For about 9% of the reports covered by the special questionnaire, minor changes, corrections, or clarifications were reported in the terms of sale, principally by the description of the lot size to which the reported price applied and in the description of the delivery terms." BLS, *Wholesale Prices and Price Indexes 1958*, Bulletin 1257, p. 10.

¹² "Don't buy at discounts off a large sellers' published barge or cargo price. Big sellers are fed up with being undercut this way. They will keep customers alive by methods that don't show up on the invoice." *Platts Daily Oilgram*, July 31, 1958.

¹³ One large Eastern chemical company, when faced with the imminent possibility of losing a very large buyer of Synthetic Resin A2 to a competitor, established another product class, Synthetic Resin D1, which differed from the former in only two important aspects—price and trade name.

largely to sellers with limited sources of supply. New, and bigger, cut-price forces have entered the market. And everybody is now getting into the act, even major suppliers, in an ever-sharpening fight for outlets. . . .

At least two major oil companies have made deals for delivery of Middle East crude to Italy at discounts of 58¢ and 91¢ per barrel, respectively (that is, below Middle East postings plus Afra tanker rates).

Or look at Japan, by far the biggest crude market in the Far East. A tremendous amount of discounting is going on there now . . . the size of the discounts can no longer be kept secret (or hidden in "free transportation" and other gimmicks). The net result is that each new, bigger discount almost automatically starts with a new round of cuts. "If it was still just a case of price cuttings by some independents with limited crude supplies, it would be one thing, but when discounts are being offered openly by just about all major companies with unlimited supplies of crude at the Persian Gulf, the situation is altogether different." And in India after Russia offered crude "at a price substantially below the level at which these companies were importing from their parent companies" . . . as of mid-week, at least one major supplier had offered to reduce the delivered cost of its Middle East crude by an average of 27¢ a barrel.—*Petroleum Week*, July 22, 1960, p. 14.

In the chemical industry :

Chemical executives report greater price firmness even where there are no actual list price changes. This takes the form of fewer price discounts, freight rebates and similar arrangements. . . . Sulfuric acid, for example, "is firmer at its base price than it has been in 18 months," declares the president of one major producer. He doesn't anticipate an increase in the base price, but he makes no secret of the fact that selling the acid at list price is an "improvement over the situation several months ago."—*Wall Street Journal*, February 2, 1960. [All this time, in fact since June 1953, the WPI quoted sulfuric acid unchanged at \$22.35 per ton, no doubt the seller's list price.]

Another interesting example in the chemical field was fumaric acid, which during the steel strike became greatly reduced in supply due to the fact that it was a joint product of steelmaking. "One fumaric acid buyer says that at the end of 1959 he was offered 'spot' fumaric at 70¢ a pound, against a list price of 28.5¢. . . . Ironically, on January 1, the base price of fumaric was cut 4 to 4.5 cents a pound, despite the short supply and high spot prices. This price cut was viewed by many chemical industry observers as an attempt on the part of established producers to keep new competitors from entering the field."—*Wall Street Journal*, *loc. cit.*

Listing only a portion or none of a special discount or allowance is another method of disguising the actual transaction price.¹⁴

Still another scheme, which involves either an affiliate, agent, or "trusted" partner, seems to be widely used in the oil, coal, and steel industries. In a weak market, the steel producer merely finds a "trusted" warehouse who is willing to purchase the rest of a product run at a large discount, holding to sell in a more "profitable" market. In the oil industry the method is a bit different,¹⁵ but the result is again that the true transaction price is hidden.

In the coal industry and possibly in others, the agent device is sometimes employed to conceal transaction prices. For not only does the agent bear the onus of selling substantially below list price, but he probably submits no price data to the BLS.

And finally, there is always the possibility that the price quotation given to the BLS resembles neither actual transaction price nor seller's list price, but rather is a price *sans fond*.

No doubt other methods of hiding actual transaction prices exist, but these few examples should suffice to illustrate the point—that actual transaction prices can be well hidden and may differ from the seller's list prices.

One becomes concerned about the validity of seller's list prices when he looks back through the individual price indexes (Chart 1) and discovers either years of no change, as in the case of crude petroleum, cigarettes, synthetic rubber, cigars, typewriter ribbons, and many organic and inorganic chemicals; or at least very orderly step functions, as in the case of all the steels, billets, slabs, pig iron, anthracite coal, gasoline, coke, paints, drugs and pharmaceuticals, woodpulp, tires, tubes, power transformers, incandescent lamps, plate and safety glass, golf balls, baseball gloves, and even ball point pens, to mention only a few.

The BLS supplied evidence of the possible difference between sellers' quoted and actual transaction prices in a study of steel prices for the OPA and WPB in 1943. This study showed that actual delivered prices frequently deviated from delivered list prices and that base prices alone were not adequate measures of steel prices on account of the large "extra" costs present today in steel products.¹⁶ Despite its own findings, the BLS today still publishes only base prices for steel.

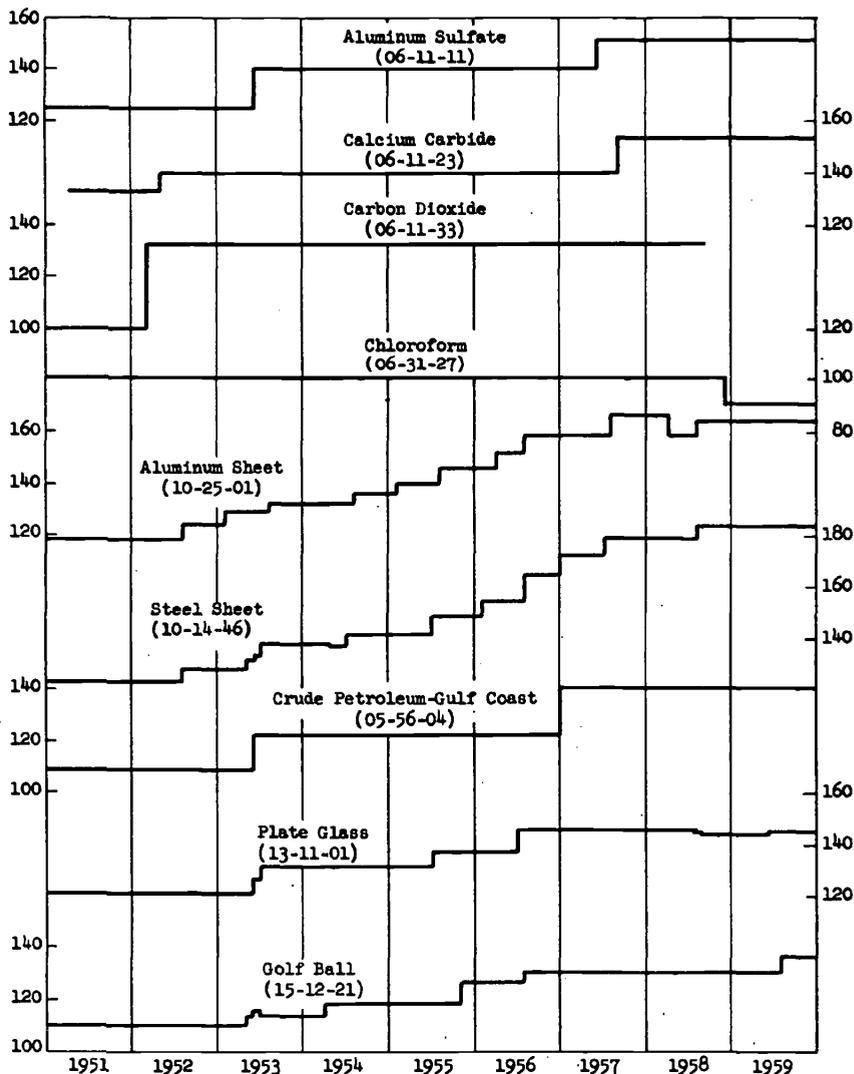
¹⁴ This is reported in the BLS's 1957 "Supplementary Inquiry on WPI Price Reports." "An interesting example of a pricing practice which has not been reflected in current indexes is a volume rebate system, under which a seller credits his customers at the end of a year with amounts which depend upon the customer's cumulative purchases during the year. Only at the end of the year is it possible to know the price reduction effected under such a system." BLS Bulletin 1257, p. 11.

¹⁵ "Price discounting has been restricted to third parties, while crude sales to wholly owned affiliates have been maintained at full posted prices. This system of selling crude to affiliates at full posted prices has been essential in holding up these postings in the current weak market." *Petroleum Week*, *loc. cit.*

¹⁶ "Actual delivered prices paid by steel consumers deviate frequently from published delivered prices. . . . Actual prices varied from 50 to 135% of April 1942 published delivered prices during the period covered, while published prices remained stable. . . . The BLS used certain base prices to represent steel mill products in its WPI. However, base prices alone are neither good measures of the price of steel nor adequate indicators of the relative prices of different steel products. . . . Today, when extras are an important part of the price of steel, sometimes more important than the base price itself, base prices have lost much of their sensitivity as measures of steel prices. . . . The extent of price concessions shown by this survey is probably understated. First, it is likely that certain big customers, not included in the study, receive large concessions, and second, the price series obtained, with few exceptions, do not include those concessions which take the form of rebates based upon the volume of steel purchased during a given period." "Labor Department Examines Consumer's Prices of Steel Products," *Iron Age*, Vol. 157, April 25, 1946, p. 115.

CHART 1

Individual BLS Commodity Indexes, 1951-1959



APPLICABILITY OF THE DATA

In order to form an estimate of the difference between transaction and list prices, and the manner in which this difference changes over time, data have been collected on a considerable number of commodities purchased by the Federal Government or its agencies.¹⁷ These

¹⁷I am greatly indebted to the following organizations from which price data were collected: General Services Administration, General Stores Supply Office (U.S. Navy), Military Petroleum Supply Agency (U.S. Navy), Naval Fuel and Supply Office, and Argonne National Laboratories.

purchasing organizations all presently employ a competitive bid process in awarding spot and term contracts (excluding negotiated contracts which are less than 1 percent of the total): this means the organization solicits for bids, receives offers, compiles them, and then accepts one of the offers—the lowest, if all other conditions are fulfilled.

Although the BLS includes in the weight universe of the WPI “normal purchases of civilian goods by the government,”¹⁸ the basic question as to the relevance of these price data is whether price quotations to the government under competitive bidding are representative of a large number of commodity transaction prices at the first “large-volume stage” as intended to be measured by the BLS. Differences might arise due to one or more of the following reasons:

1. **Commodity difference.** It is possible that commodities purchased by the government differ significantly from the standard commercial commodities due to advertising, services, or quality itself. However, the level of transactions that the BLS is attempting to measure (first significant commercial transaction or “primary market”) is characterized by very little advertising. Services may vary slightly among classes of customers, but, in general, the Federal Government is considered a more difficult customer with which to deal than private firms. Furthermore, an attempt was made to take account of any quality differences that exist between government purchased and standard commercial commodities as described in the WPI. Thus, steel sheet and plate have been adjusted to conform with WPI quality specifications. In many cases it is stated that the government purchases standard commercial commodities. Only where commodities have wide quality ranges, and where the WPI gives no indication of quality content, is there a serious possibility of price reflecting quality differences. But even in such cases, if the quality differential does not change rapidly over time, comparisons of flexibility should still be valid.

2. **Distress sales.** Distress sales to government or its agencies at prices less than marginal cost do not appear to be important. Not only is the Federal Government a continuous buyer but, due to the procedure of identifying and publicly posting all prices offered to the Government, there appears to be less incentive to sell at distress prices in the government market than in the private market. This is in full accord with the “trusted” (no price disclosure) customers mentioned earlier.¹⁹

3. **Entry attempts.** New firms seeking to establish businesses and possibly lacking distribution systems or established products might use the government market where (other conditions fulfilled) only price is important. However, upon checking both the companies that offer price quotations and those whose bids are accepted, one finds that not only are the large corporations of the various industries represented but they also are heavily represented among the successful bidders. Very few successful bidders appear to be new entrants in an industry.

4. **Competitive bidding.** It could be argued that the government’s procedure of competitive bidding results in lower prices than nongov-

¹⁸ BLS Memorandum, *WPI Universe*. See footnote 9 above.

¹⁹ Numerous companies in widely different industries have stated to government purchasing officers that lower prices could be offered provided prices were not publicly posted.

ernment buyers achieve. But a claim of this sort simply denies the profit motive in private business.

5. Order quantity. The government often purchases smaller lots of those commodities for which the BLS stipulates minimum lot sizes.²⁰ For all commodities, the BLS gives no indication of an upper limit on the number of lots (order quantity). Surely whether one purchases 1 or 100 carloads of a commodity should have some effect on price. Since most government transactions are for smaller quantities than many private transactions at this level (i.e., steel, aluminum, chemicals, plate glass, plywood, linoleum, auto storage batteries, etc.), the bias is often upward relative to the average market transaction price.

6. Primary producers. Because almost anyone can submit a price offer to a government purchasing organization irrespective of level of supply, some price quotations come from levels other than the "primary market." Only in cases where all primary producers or suppliers are known can nonprimary market quotations be separated.²¹ This again produces an upward bias in the mean (\bar{X}) of government price quotations as compared with average transaction prices from the private market.

Hence it appears that if government price quotations are biased at all, they are probably biased upward with respect to the average of the population of market transaction prices at the "primary level." Table C-1 offers some support of this conclusion. Note that the relative rankings, from highest to lowest, are usually in this order: Bureau of Census price, offered contract price, and BLS price. For oxygen and acetylene, the BLS data are in the form of index numbers²² and cannot be directly compared with the price quotations in the other two series. Nonetheless, it may be noted that the movements of the latter are usually in accord and both differ from that of the BLS series. Calcium carbide comparisons involve delivered prices, and again the relative movements of the first two series are similar and different from the BLS series. These particular commodities were chosen so as to minimize product and quality differences between the price series.

RESULTS

The major results of the simple statistical comparisons of the BLS wholesale price and index series with the prices bid on government contracts (henceforth called contract prices)²³ are:

- a. The average levels of the BLS series are above those of the contract price series (Tables 2 and 3),
- b. The BLS series change less frequently than the contract price series (Table 1),

²⁰ The BLS specifications on quantity lots are not very precise. Many minimum lot sizes are given (30,000 lbs. for aluminum sheet; base quantity, 40,000 lbs., for steel sheet; car lots for calcium carbide; minimum, 20,000 bbl. for gasoline Gulf Coast, etc.), but in too many areas (all of processed foods, farm products, apparel, coal, drugs, hardboard, handtools, machinery and motive products, furniture and other household durables, etc.) lot sizes are seldom given. And even when minimum lot size is given, no maximum number of lots (order quantity) is given.

²¹ Such an example in steel is A. M. Castle, which is well known to be only a warehouse and not a producer. Unfortunately few such obvious cases exist.

²² Note that the BLS publishes both a Wholesale Price Index for all commodities and Average Wholesale Prices for some commodities.

²³ The designation "contract price" has been selected because price bids to the government are offers to contract at a particular price and under a competitive bid system cannot be withdrawn after they are publicly stated.

c. The BLS series change by smaller magnitudes in the short run than the contract price series (Table 1).

Table 1 demonstrates that in 22 out of 30 commodities the number of price changes between successive monthly observations was greater for the contract price series than for the BLS series. This finding is all the more impressive in that our procedure exaggerates the number of price changes in the BLS series on two counts. First, to compare government term contract prices with BLS prices, the means of the BLS monthly prices for the term contract period are calculated. If prices are constant during term 1, rise during term 2, and are constant during term 3, the method of averaging will show two price changes in the BLS series when in effect only one has occurred. Second, the same problem occurred in the basic BLS series when a monthly price was an average of weekly prices. Also, the BLS method of collecting prices of particular firms at particular moments can show as many price changes as there are firms.²⁴

Adjusting coke and anthracite (buckwheat No. 1) for the first source of overstatement would result in both commodities showing more price changes in the contract price series than in the BLS series. There are 13 commodities which have term contract price data.

In commodity areas such as chemicals, nonferrous metals, pulp, paper, rubber and rubber products, etc., where BLS prices are given as f.o.b. shipping point, freight allowed, absorbed, or equalized, one would not expect BLS prices to be good indicators of short-run price flexibility, for no deduction is made by the BLS from the f.o.b. price for the allowed, absorbed, or equalized freight. This seriously limits the BLS series as a reliable measure of short-run price change magnitudes.

Table 1 exhibits 60 out of 64 cases where the contract price series showed greater mean magnitude of change than the BLS series. In only two cases out of 64 (steel plate and anthracite chestnut) did the BLS series show greater mean magnitude of movement. Two cases showed no change. Note that in all cases the mean percentage decrease of the data surpassed that of the BLS. This would certainly be an important characteristic of a comparison between list and transaction prices. Magnitude differences may be due in some part to differences in quantities purchased. Although some minimum quantity limit is often given in the BLS specifications (unfortunately there are numerous commodities where none is given), no maximum quantity limit is stated for any commodity. And even if maximum limits were given, some difference in prices might be expected because of variations in quantity within the stated limits. Tables B-2, B-10, B-14, B-23, and B-26 all present excellent examples of quantity-price difference in the same month.

The comparisons in Table 2 document the fact that on the average the BLS series are higher than the contract price series. For not only in 31 out of 32 commodities are the BLS series on the average above the mean of the contract series, but for all commodities the BLS series

²⁴ This second point is stated by George Stigler in "The Kinky Oligopoly Demand Curve and Rigid Prices," *Journal of Political Economy*, Vol. LV, Oct. 1947, p. 442.

TABLE 1.—Flexibility and Magnitude Comparisons of Price Changes Between Successive Observations

Commodity	Period of comparison	Number of observations ¹	Number of price changes		Mean (\bar{X}) number of months between BLS price changes	Mean percent DATA	Increase (+) : BLS	Mean percent DATA	Decrease (-) : BLS
			DATA	BLS					
1. Aluminum sulfate.....	July 1949 to November 1956.....	16	15	2	27.3	10.498	1.111	10.050	+1.732
2. Calcium carbide (a and b).....	April 1951 to September 1954.....	14	13	1	13.5	13.134	4.455	16.703	-4.714
3. Calcium hypochlorite.....	February 1949 to March 1956.....	11	6	5	24.0	4.972	1.302	4.250	+4.488
6. Xylene.....	December 1954 to February 1957.....	5	4	0	38.0	2.190	0.000	2.117	.000
7. Acetylene.....	November 1953 to October 1957.....	4	3	0	34.6	4.807	3.145	7.212	.000
8. Carbon dioxide (gas).....	November 1954 to October 1957.....	4	3	0	30.0	8.985	0.000	26.531	.000
9a. Oxygen.....	November 1954 to October 1957.....	3	2	0	22.0	9.886	5.033	5.735	.000
9b. Oxygen.....	July 1954 to July 1960.....	3	2	1	22.0	12.308	8.547	7.397	.000
10. Laundry soap (bar).....	July 1954 to December 1959.....	21	20	1	6.5	26.288	7.699	10.913	.695
11. Laundry soap (powder).....	March 1949 to December 1955.....	18	17	1	1.67	21.674	11.428	18.643	12.940
12. Paint interior.....	March 1951 to February 1959.....	19	18	1	3.31	4.799	1.186	6.287	+ .928
13. Enamel.....	December 1956 to June 1957.....	4	3	1	1.75	14.010	0.000	8.161	+ .490
14. Gasoline.....	April 1954 to April 1958.....	10	9	1	4.9	6.188	5.440	11.034	3.005
15. Anthracite, buckwheat No. 1.....	April 1951 to April 1959.....	17	16	1	2.04	9.429	3.586	6.392	3.641
16. Anthracite, chestnut.....	April 1951 to April 1959.....	19	18	1	1.69	3.239	0.000	12.053	5.393
17. Anthracite, pea.....	April 1953 to May 1955.....	3	2	1	2.12	0.000	0.000	0.000	+2.644
18. Bituminous coal, egg.....	March 1953 to June 1960.....	7	6	1	1.09	13.966	4.128	5.682	.000
19. Coke (Birmingham).....	July 1957 to June 1960.....	3	1	2	15.0	2.830	2.567	0.000	.000
20. Aluminum alloy sheet.....	January 1955 to June 1959.....	12	10	2	7.0	15.805	2.833	11.502	+1.025
21. Aluminum ingot.....	December 1953 to May 1956.....	6	4	2	5.6	8.601	4.644	1.724	+5.172
22. Brass bar.....	January 1954 to September 1959.....	12	11	1	1.703	12.642	8.987	10.203	7.250
23a. Steel sheet.....	February 1949 to August 1954.....	14	13	1	6.8	5.951	3.051	6.513	+1.108
23b. Steel sheet.....	July 1954 to April 1955.....	3	2	1	6.0	8.58	-205	1.815	.000
24. Steel plate.....	May 1955 to June 1957.....	3	2	1	4.8	10.827	13.102	2.24	.000
25. Plywood A-C.....	January 1952 to May 1957.....	17	16	1	2.24	4.352	4.344	9.037	6.815
26. Plywood A-D.....	December 1951 to August 1955.....	8	8	0	2.00	5.098	4.161	8.308	7.271
27. Gummed tape.....	September 1951 to January 1959.....	22	21	1	4.00	15.819	-1.400	10.650	+ .387
28. Auto tubes.....	April 1956 to December 1959.....	6	4	2	10.00	3.35	0.883	2.97	+1.868
29. Storage batteries.....	February 1949 to February 1959.....	6	5	1	3.32	5.086	-589	11.829	+6.307
30. Lithium.....	August 1950 to November 1959.....	16	15	1	4.72	4.953	1.130	6.765	+1.137
31. Glass, plate.....	July 1949 to February 1959.....	15	14	1	15.57	9.985	3.994	6.370	+ .687
32. Golf balls.....	July 1949 to February 1960.....	17	16	1	10.17	5.770	1.955	7.730	+1.787
Total.....		346	306	188					

Note.—Possible number of price changes, 312.

¹ This is the number of months in which there is at least one price observation. Months in which more than one price observation occurs are represented by mean prices in all calculations.

² This is the mean increase (decrease) between successive price observations (based on the data) as compared with the BLS series for the same period. Minus (-) and plus (+) are only used for movements contrary to the data series and signify decrease (-) and increase (+), respectively.
³ The a, b designation specifies independently collected price series for the same commodity.

are above the low of the contract series. In any given contract, the low price in the distribution of prices is the actual transaction price, provided other conditions are fulfilled. Note that many of these comparisons are over a 7- to 9-year period.

TABLE 2.—Average Level Comparisons of Price Series

Commodity	Period of comparison	Number of observations	BLS \bar{X}	BLS Low
5b. Acetone.....	August 1958.....	1	1.061	1.174
1. Aluminum sulfate.....	July 1949 to November 1956.....	16	1.039	1.161
2. Calcium carbide (a and b).....	April 1951 to September 1954.....	21	1.099	
3. Calcium hypochlorite.....	February 1949 to March 1956.....	11	1.206	
5a. Hydrochloric acid.....	July 1958.....	1	1.177	1.667
6. Xylene.....	December 1954 to February 1957.....	5	1.018	
8. Carbon dioxide.....	November 1954 to October 1957.....	4	1.907	2.039
10. Laundry soap (bar).....	July 1954 to December 1959.....	21	2.838	
11. Laundry soap (powder).....	March 1949 to December 1955.....	18	1.273	
12. Paint interior.....	March 1951 to February 1959.....	19	2.079	
13. Enamel.....	December 1956 to June 1957.....	4	2.236	2.566
14. Gasoline.....	April 1954 to April 1953.....	10	1.027	1.069
15. Anthracite, buckwheat No. 1.....	April 1951 to April 1959.....	17	1.135	1.190
16. Anthracite, chestnut.....	April 1951 to April 1959.....	19	1.192	1.279
17. Anthracite, pea.....	April 1953 to May 1955.....	3	1.219	1.230
18. Bituminous coal, egg.....	March 1953 to June 1960.....	7	1.363	1.450
19. Coke (Birmingham).....	July 1957 to June 1960.....	3	1.097	
20. Aluminum alloy sheet.....	January 1955 to June 1959.....	12	1.137	
21. Aluminum ingot.....	December 1953 to May 1956.....	5	1.044	1.081
22. Brass bar.....	January 1954 to September 1959.....	12	1.054	
23a. Steel sheet.....	February 1949 to August 1954.....	14	1.084	
23b. Steel sheet.....	July 1954 to April 1955.....	3	1.050	1.137
24. Steel plate.....	May 1955 to June 1957.....	3	1.059	1.078
25. Plywood A-C.....	January 1952 to May 1957.....	17	1.082	
26. Plywood A-D.....	December 1951 to August 1955.....	16	1.045	
27. Gummed tape.....	September 1951 to January 1959.....	22	1.1438	

Because of the different time periods over which the commodities were sampled, a meaningful mean value calculation of the difference in level between the BLS and contract data for all commodities is unavailable. However, for 18 commodities in 1953, the average level ratio BLS/contract \bar{X} was 1.187, and for a different set of 22 commodities the average level ratio was 1.281 in 1954.

The contract price series unfortunately include some nonprimary market prices, and if they could be excluded, the differences in level would be still larger. Furthermore, the government often purchases in smaller lot sizes than private market buyers and in some cases in lots smaller than the WPI lot specifications (i.e., aluminum alloy sheet, steel sheet, brass bar, aluminum ingot, laundry soap (bar), plate glass, etc.). This results in a smaller difference between the two series than would otherwise exist if no such deviations from the WPI specifications were present.

For those commodities for which the BLS provides only index series, the contract prices were transformed into indexes at the same level as the initial BLS indexes for comparison (Table 3). Again, on the average, the BLS level for the period of comparison is higher, which reflects a difference in magnitudes of the movements.

TABLE 3.—Average Level Comparisons of Index Series, Selected Periods, 1949-60

Commodity	Period of comparison	Number of observations ¹	$\frac{\text{BLS}^2}{\bar{X}}$	BLS Low
7. Acetylene.....	November 1953 to October 1957....	4	1.062	1.298
9a. Oxygen.....	January 1956 to November 1959....	5	1.058	1.344
9b. Oxygen.....	July 1954 to July 1960.....	3	1.005	1.404
31. Glass, plate.....	July 1949 to February 1959.....	15	.986	1.069
30. Linoleum.....	August 1950 to November 1959.....	16	1.110	
28. Auto tubes.....	April 1956 to December 1959.....	6	1.063	1.209
29. Storage battery.....	February 1949 to February 1959....	6	1.466	1.558
32. Golf balls.....	June 1949 to February 1960.....	17	1.284	1.542

¹ This is the number of months in which there is at least 1 price observation. Those months in which more than 1 observation falls are represented by mean prices in all calculations.

² Mean of the BLS/DATA figures for the entire period of comparison. Due to different periods of comparison, no mean is calculated for all commodities.

Clearly, if over time the comparisons show the BLS series above the contract series, then on the average the short-run comparisons (month to month) will certainly exhibit the same difference.

The evidence of Tables 1 to 3 is of course limited in time, frequency of observations, and in commodity coverage. But within these limits there are important differences in level, frequency, and magnitude of change between the BLS series and the contract price series. That would be the difference between list and transaction prices.

APPENDIX A

CONSTRUCTION OF THE TABLES

The flexibility and magnitude comparisons were constructed in the following manner. For the period of comparison, the total number of contract price observations was tabulated. Then the number of price changes between successive monthly observations was noted (successive in time; June, October, not necessarily adjacent) and compared with the corresponding number of changes between BLS price quotations for the same period. In situations where more than one observation was present for the month, the mean of the observations was used as the month's price quotation.

The mean (\bar{X}) number of months between BLS price changes commences with the first price change in the comparison period and terminates with the end of the last run of identical prices started within the period, whether it extended 1, 2, or 36 months beyond the comparison period.

The measure of the magnitudes of fluctuation, mean percentage increase and mean percentage decrease (Table 1), was the mean of all successive percentage price changes for the comparison period. Increasing and decreasing price changes were segregated, then, if three increasing observations were present for the period of comparison, the mean of the two price changes expressed as percentages of their former value was tabulated as Mean Percentage Increase, Data. The mean of the price changes in the BLS for the same period was tabulated under BLS. The decreasing (-) price changes were handled similarly. Note that (+) and (-) refer to movements which were opposite those of the contract data.

In all comparisons between contract price observations and the BLS series, either delivered or f.o.b. data were used for the comparisons over time. No mixing of the two was tolerated.

Only on term contracts (delivery rate > 150 days) were the means of the BLS monthly price quotations utilized.

For the average long-run level comparisons (Table 2), the sum of the applicable BLS monthly price quotations for the period of comparison was divided by the sum of the contract price observations. This comparison was made for both mean (\bar{X}) contract prices as well as low prices. In long-run level comparisons involving term contracts (delivery data > 150 days), both the means and the lows of the contract series were compared to the BLS lows and means for the particular term contract periods.

In situations where the BLS reports only an index of price changes (Table 3), the original contract price series was transformed into an index based on the mean of the first year of comparison. The index was then adjusted to match the base of the BLS index and the comparisons then made as to long-run level for both the means and the low price observations.

Empirical support of the hypothesis concerning the bias of the contract price data is offered in Table C-1. The Bureau of Census yearly average price is calculated from the quantity and value data prepared by the Industry Division, Bureau of Census, as found in the *Facts for Industry*²⁵ series.

DATA ADJUSTMENTS

In order to present more meaningful comparisons between contract price data and the BLS data, some contract price series were adjusted to alleviate possible price differences due to commodity specification differences.

1. Aluminum sulfate (Table 1). The majority of the price quotations were f.o.b. plant. In a few cases the applicable freight (exact freight cost from plant to destination for the particular date as figured by the government) was deducted.

Also \$.05 per 100 lbs. was deducted from all price quotations (as suggested by the sellers) to adjust for the special multiwall bag required by the Navy. Octagon was not considered a primary producer and hence its quotations, though included in the table, were not used.

2. Sulfuric acid (Table B-4). The majority of the price quotations were on a delivered basis. Hence exact freight costs from plant to destination as given by past rate schedules were needed, but, unfortunately, not available. Consequently, the commodity was *not* used in any comparison.

3. Gasoline (Table B-14). The government requires at *least* 86 octane and at times receives offers of 87 and 88 octane gas. Due to no systematic notification of the exact octane rating, *all* price quotations were subjected to the adjustment of \$.002 per gal. by deduction from the WPI price series. This figure was twice the magnitude suggested by a large midwestern oil company.

4. Steel sheet (Table B-23 a and b). A deduction of \$1.05 per 100 lbs. for quality and inspection extras was made for all price quotations in order to match the WPI specification. The adjustment and magni-

²⁵ Now called *Current Industrial Reports*.

tude were suggested by government steel buyers and specification experts. In Table B-23a, a further adjustment was suggested by the specification experts with respect to delivered prices. In f.o.b. plant purchases after 1952, the government added an average delivered transportation cost in order to compare the price quotations with other delivered prices. Adjustment 2 gives the price quotations after deducting the average delivered transportation cost. Prices under adjustment 2 were *not* used in this study. Only adjustment 1 was used.

5. Steel plate (Table B-24). A deduction of \$1.10 per 100 lbs. for quality and inspection extras was again made at the suggestion of the government buyers and specification experts.

6. Plywood (Tables B-25 and B-26). Price quotations that contained an average delivered transportation cost added by the government were adjusted to their former f.o.b. basis by subtracting the government-calculated increment.

In regard to the other price series, a few general comments are desirable. In a few commodities (steel sheet, storage batteries, aluminum sulfate, etc.) *some* nonprimary market price quotations were recognized and did not enter into the final analysis. No doubt others still remained, for only the most obvious were segregated.

In some commodities (brass bar, xylene, linoleum, etc.) the WPI specifications were given as f.o.b. plant, whereas the price quotations were on a delivered basis. And in a few commodities (aluminum sheet, brass bar, calcium carbide, etc.) the quantities of the quotations were less than the WPI specified minimum quantity.

All these factors tended to minimize the difference in level between the WPI and the contract price data and possibly bias the flexibility comparisons.

APPENDIX B
TABLE B-1.—Aluminum Sulfate, Hydrated, Technical, 100-Pound Bags, F.O.B. Plant

Bid opening date	Delivery date	Number of bidders	Quantity (pounds)	Sellers offered prices (dollars per 100 pounds, no time discounts)			BLS prices from opening to delivery date		
				Low	\bar{X}	High	Opening	\bar{X}	Delivery
July 26, 1949.....	A, S, O, N, D.....	5	160,000	\$1.375	\$1.60	\$1.70	\$1.50	\$1.50	\$1.50
Feb. 7, 1951.....	60 days.....	2½	20,000	1.55	2.03	2.51	1.65	1.65	1.65
Apr. 16, 1951.....	30.....	2½	40,000	1.60	1.60	1.60	1.65	1.65	1.65
Oct. 17, 1951.....	O, N, D.....	2	200,000	1.35	1.47	1.59	1.65	1.65	1.65
June 6, 1952.....	J.A.S.....	2	240,000	1.60	1.60	1.60	1.65	1.65	1.65
Jan. 7, 1953.....	150.....	2½	50,000	1.10	1.40	1.70	1.65	1.65	1.65
Mar. 3, 1953.....	60.....	3	80,000	1.28	1.51	1.66	1.65	1.65	1.65
May 25, 1953.....	120.....	2	180,000	1.48	2.01	2.54	1.65	1.65	1.65
Mar. 8, 1955.....	60.....	2½	450,000	1.46	1.67	1.78	1.85	1.85	1.85
Sept. 30, 1955.....	45.....	3	80,000	1.45	1.56	1.78	1.85	1.85	1.85
Oct. 5, 1955.....	30.....	3	270,000	1.60	1.73	1.80	1.85	1.85	1.85
Apr. 3, 1956.....	45.....	3¼	84,000	1.60	1.78	1.90	1.85	1.85	1.85
May 9, 1956.....	60.....	2	231,000	1.60	2.18	3.37	1.85	1.85	1.85
July 19, 1956.....	30.....	3	518,000	1.60	1.71	1.825	1.85	1.85	1.85
Aug. 7, 1956.....	60.....	2½	82,000	1.78	1.80	1.90	1.85	1.85	1.85
Nov. 6, 1956.....	60.....	6½	20,000-250,000	1.71	3.44	6.45	1.85	1.85	1.85
Nov. 14, 1956.....	60.....	1¼	51,000	1.90	1.79	1.90	1.85	1.85	1.85
					3.06	9.95	1.85	1.85	1.85
					1.90	1.90	1.85	1.85	1.85
					2.46	3.01	1.85	1.85	1.85

¹ Calculated by omitting most obvious nonprimary market producers.

² Delivery period assumed to be 60 days.

06-11-11 WPI Spec. 1949-56: Aluminum sulfate, commercial, bulk, cartlots; f.o.b. works, freight equalized.

TABLE B-2(a).—Calcium Carbide, Quarter, 100-Pound Drums, Delivered Various Destinations East of the Rocky Mountains

Contract date	Delivery date	Destination area ¹	Company	Quantity (pounds)	Actual transaction price (dollars per ton, no time discount)	BLS price as of contract date
April 1951	September 1951	Brooklyn, N. Y.	National Carbide	120,000	\$116.60	\$128.00
Do.	do.	do.	Linde Air Products	240,000	106.00	128.00
June 1951	June 1951	Portsmouth, N. H.	Air Reduction	3,500	144.20	128.00
August 1951	September 1951	Brooklyn, N. Y.	National Carbide	200,000	117.60	128.00
October 1951	December 1951	do.	do.	240,000	97.00	128.00
Do.	October 1951	do.	Shawinigan	20,000	125.93	128.00
February 1952	August 1952	do.	do.	400,000	97.00	128.00
Do.	do.	do.	Pacific Carbide	1,000,000	110.00	128.00
Do.	do.	do.	Linde Air Products	595,000	117.20	134.40
Do.	do.	do.	Shawinigan	295,000	114.80	134.40
Do.	do.	do.	National Carbide	300,000	115.20	134.40
October 1952	July 1952	do.	do.	190,000	116.00	134.40
Do.	do.	do.	Linde Air Products	350,000	116.00	134.40
Do.	do.	do.	National Carbide	120,000	120.80	134.40
January 1953	April 1953	Charleston, S. C.	Shawinigan	80,000	97.00	134.40
September 1953	September 1953	do.	National Carbide	15,000	122.00	134.40
October 1953	October 1953	do.	Shawinigan	330,000	97.00	134.40
Do.	November 1953	do.	National Carbide	12,500	116.20	134.40
March 1954	March 1954	Great Lakes, Ill.	do.	100,000	137.40	134.40
May 1954	June 1954	Brooklyn, N. Y.	National Carbide	100,000	137.40	134.40
June 1954	do.	Norfolk, Va.	do.	27,200	106.88	134.40

¹ Destination of shipment is approximately within 50 miles of listed city.

: Price often includes cost of drums.

* F.o.b. plant prices.

TABLE B-2(b).—Calcium Carbide, Quarter, 100-Pound Drums, Delivered Various Destinations on West Coast

Contract date	Delivery date	Destination area ¹	Company	Quantity (pounds)	Actual transaction price (dollars per ton, no time discount):	BLS price as of contract date
April 1951	April 1951	Los Angeles, Calif.	Linde Air Products	100,000	\$127.30	\$128.00
August 1951	September 1951	do	Stuart Oxygen	150,000	121.00	128.00
October 1951	November 1951	Puget Sound, Wash.	Linde Air	140,000	\$ 106.00	128.00
Do	do	Oakland, Calif.	National Carbide	134,800	141.12	128.00
November 1951	December 1951	Puget Sound, Wash.	Linde Air	300,000	\$ 106.00	128.00
January 1952	February 1952	Los Angeles, Calif.	Pacific Carbide	200,000	125.28	128.00
February 1952	February 1952	Oakland, Calif.	Shawinigan Products	170,000	97.00	134.40
September 1953	September 1953	do	Pacific Carbide	153,000	129.60	134.40
Do	do	do	Shawinigan Products	100,000	122.00	134.40
June 1954	July 1954	do	National Carbide	96,700	143.40	134.40
September 1954	October 1954	do	Pacific Carbide	117,500	143.40	134.40

¹ Destination of shipment is approximately within 50 miles of listed city.² Price often includes cost of drums.³ F. o. b. plant prices.

09-11-23 WPI Spec. 1949-56: Calcium carbide, standard generator size, carlots, delivered.

TABLE B-3.—*Calcium Hypochlorite, Technical, Type I, 100-Pound Drums, Delivered East of the Rockies*

Contract date	Delivery date	Company	Quantity (pounds)	Actual transaction price (dollars per 100 pounds, including drum cost)	BLS prices as of contract and delivery date	
					Contract	Delivery
February 1949.....	June 1949.....	Pennsylvania Salt Manufacturing.	73,300	\$20.25	\$24.00	\$24.00
June 1949.....	November 1949.....	Cole Labs.....	20,000	20.29	24.00	24.00
Do.....	February 1950.....	Pennsylvania Salt Manufacturing.	40,000	20.69	24.00	24.00
August 1949.....	September 1949.....	Pittsburgh Plate Glass..	30,000	20.55	24.00	24.00
November 1949.....	February 1950.....	Pennsylvania Salt Manufacturing.	240,000	18.50	24.00	24.00
April 1951.....	June 1951.....	Mathieson Chemical Corp.	50,000	21.75	25.25	25.25
July 1951.....	October 1951.....	do.....	20,000	21.75	25.25	25.25
October 1951.....	December 1951.....	Columbia Southern.....	50,000	21.75	25.25	25.25
April 1952.....	May 1952.....	Pennsylvania Salt Manufacturing.	50,000	19.10	25.25	25.25
May 1952.....	June 1952.....	Columbia Southern.....	25,000	21.75	25.25	25.25
June 1953.....	August 1953.....	Pennsylvania Salt Manufacturing.	40,000	18.08	25.25	25.25
September 1953.....	November 1953.....	Columbia Southern.....	60,000	21.72	28.65	28.65
January 1954.....	January 1954.....	Pennsylvania Salt Manufacturing.	45,000	24.30	28.65	28.65
July 1954.....	August 1954.....	Braun-Knecht-Helman..	60,000	24.75	28.65	28.65
February 1955.....	May 1955.....	Pennsylvania Salt Manufacturing.	26,000	21.40	28.65	28.65
March 1956.....	May 1956.....	do.....	7,900	21.40	28.65	28.65

¹ F.o.b. plant.

² Delivered west of Rockies—San Francisco—and not including cost of drums.

06-11-27 WPI Spec. 1949-56: Calcium hypochlorite, 100-pound drums, delivered east of Rockies.

TABLE B-4.—*Sulfuric Acid, Technical, Specific Gravity 1.8287, 30-50-Ton Tank Cars, Delivered Various Destinations*

Contract date	Delivery date	Destination area	Company	Quantity (pounds)	Actual transaction price (dollars per ton, no time discount)	BLS price as of contract date
November 1948...	December 1948...	do.	Allied Chemical...	100,000	17.12	17.00
February 1949.....	June 1949.....	Portsmouth, N.H.	General Chemical.	100,000	23.50	17.00
August 1949.....	October 1949.....	Brooklyn, N.Y.	do.....	100,000	22.00	17.00
January 1950.....	January 1950.....	Portsmouth, N.H.	Monsanto Chemical.	115,000	22.50	17.00
March 1950.....	April 1950.....	do.	do.....	115,000	22.50	17.00
June 1951.....	June 1951.....	do.	do.....	115,000	25.70	20.00
June 1947.....	10 days.....	Oakland, Calif.	General Chemical.	120,000	¹ 15.40	16.50
November 1948.....	December 1948.....	do.	Stauffer Chemical.	160,000	22.35	17.00
May 1949.....	June 1949.....	do.	do.....	100,000	18.60	17.00
June 1950.....	July 1950.....	do.	do.....	100,000	18.72	17.75
April 1951.....	April 1951.....	do.	Allied Chemical.	104,000	21.24	20.00
July 1951.....	do.....	do.	Stauffer Chemical.	212,000	21.24	20.00
July 1953.....	July 1953.....	do.	do.....	100,000	26.00	22.35
February 1954.....	February 1954.....	do.	do.....	100,000	26.60	22.35

¹ F.o.b. plant price.

06-11-09 WPI Spec 1947-56: Sulfuric acid, 66° Be, tanks, f.o.b. works.

GOVERNMENT PRICE STATISTICS

TABLE B-5

A. ACETONE, DELIVERED OAK RIDGE, TENN.

Contract date	Terms	Company	Location	Quantity	Sellers' offered price (dollars per gallon)	BLS price at contract date
Aug. 12, 1958.	Net 30 days..	Allied Chemical Corp.	New York City...	Tank-car lots.	\$0.477	-----
Do.....	do.....	Chemical Compound- ing Corp.	Perth Amboy, N.J.	do.....	.559	-----
Do.....	do.....	C. P. Chemical Solvents.	New York City...	do.....	.561	-----
Do.....	do.....	Eastman Chemical Products.	Kingsport, Tenn.	do.....	.495	-----
Do.....	Net 10 days..	Enjoy Co.....	New York City...	do.....	.56	-----
Do.....	Net 30 days..	Octogon Process..	Staten Island, N.Y.	do.....	.559	-----
Do.....	5 percent, 10 days.	Phipps Products Corp.	Boston, Mass.....	do.....	.50369	-----
Do.....	Net 30 days..	Shell Chemical Corp..	New York City...	do.....	.561	-----
Do.....	do.....	Union Carbide Chemical Co.	do.....	do.....	.478	\$0.56015
					\bar{X} = 528	-----

¹ Translated from dollars per pound to dollars per gallon at 6.59 pounds per gallon.

06-12-01 WPI Spec 1958: Acetone, Chem. pure, tankcars, producer to first buyer, delivered. Friday price.

B. HYDROCHLORIC ACID, DELIVERED OAK RIDGE, TENN.

Contract date	Terms	Company	Location	Quantity	Sellers' offered price (dollars per ton)	BLS price at contract date
July 31, 1958..	Net 30 days..	Columbia Southern Chemical.	Charlotte, N.C....	Tank-car lots.	\$30.10	-----
Do.....	do.....	Dow Chemical Co....	Midland, Mich....	do.....	26.34	-----
Do.....	do.....	E. I. du Pont de Nemours.	Wilmington, Del..	do.....	26.53	-----
Do.....	do.....	Monsanto Chemical..	St. Louis, Mo.....	do.....	26.49	-----
Do.....	do.....	Tennessee Products & Chemical Corp.	Nashville, Tenn...	do.....	18.00	\$30.00
					\bar{X} = 25.49	-----

Data from Vernon A. Mund, "Identical Bid Prices," *Journal of Political Economy*, April 1960, p. 156.

06-11-03 WPI Spec. 1958: HCL, 20° Be, Carboys, tankcars. producer to first buyer, f.o.b. works, freight equalized, Friday price.

TABLE B-6.—Xylene, Grade A and B, Technical, Tankcar Lots, F.O.B. Various Points

Bid opening date	F.o.b. point	Company	Actual transaction		BLS prices	
			Quantity (gal.)	Price (dollars per gal., no time discount)	Open- ing	3 months later
Dec. 27, 1954.....	Plant, Sewell Point...	Esso Standard Oil.....	40,000	\$0.335	\$0.340	\$0.340
June 25, 1956.....	Portsmouth, Va.....	Shell Oil.....	13,140	.323	.340	.340
Aug. 1, 1956.....	Norfolk, Va.....	do.....	10,000	.3365	.340	.340
Aug. 4, 1956.....	do.....	Esso Standard Oil.....	60,000	.335	.340	.340
Nov. 19, 1956.....	Mare Island, Calif.....	Amco Chemical Corp.	23,512	.3379	.340	.340
Nov. 23, 1956.....	Portsmouth, Va.....	Shell Oil.....	19,132	.3365	.340	.340
Feb. 15, 1957.....	do.....	Esso Standard Oil.....	24,820	.335	.340	.340

06-12-05 WPI Spec. 1947-60: Xylene (Xylol) petroleum, industrial, tankcars, producer to first buyer, f.o.b. works, Bayonne, N.J.; Friday price.

* *Oil & Gas Journal*, Annual Refinery Issue, lists only Esso Standard Oil at Bayonne, N.J.

TABLE B-7.—Acetylene, Gas, 225-Cubic-Foot Cylinder, Delivered Various Destinations

Contract date	Contract period	Number of contracts	Quantity (ft. ³)		High	Actual transaction price (dollars per 100 ft. ³)			BLS index for contract period		
			Low	\bar{X}		Low	\bar{X}	High	Low	\bar{X}	High
November 1959	November 1959 to November 1960	13	185,000	2,223,500	9,259,800	\$1.87	\$2.32	\$2.88	124.8	124.8	124.8
April 1959	May 1959	12	2,763,000	3,068,500	3,250,000	2.04	2.11	2.78	124.8	124.8	124.8
November 1958	November 1958 to November 1959	15	100,000	1,594,330	8,000,000	1.95	2.38	5.75	124.8	124.8	124.8
November 1957	November 1957 to November 1958	14	129,180	2,023,230	8,000,000	1.74	2.18	2.62	124.8	124.8	124.8
November 1956	November 1956 to November 1957	8	100,125	1,075,200	4,410,200	1.86	2.35	5.50	124.8	124.8	124.8
December 1955	December 1955 to November 1956	13	125,325	2,248,100	8,256,000	1.89	2.02	1.45	118.7	118.7	118.7
November 1954	November 1954 to November 1955	15	120,150	2,188,800	8,546,500	1.94	1.93	2.25	113.0	113.0	113.0
November 1953	November 1953 to November 1954	17	14,625	2,123,620	12,872,700	1.89	2.08	1.69	113.0	113.0	113.0

1 F.o.b. plant price.

06-12-03 WPI Spec. 1947-56: Acetylene, dissolved, in cylinders, f.o.b. plant or delivered in specified amounts; 1957-60: F.o.b. plant.

TABLE B-8.—Carbon Dioxide, Gas, Grade B, Type II, Class I, 50-Pound Cylinders Delivered Various Destinations

Contract date	Contract period	Number of contracts	Quantity (lbs.)		High	Actual transaction price (dollars per lb., no time discount)			BLS prices for contract period		
			Low	\bar{X}		Low	\bar{X}	High	Low	\bar{X}	High
November 1959	November 1959 to November 1960	6	195,590	402,750	402,750	\$0.028	\$0.0453	\$0.069			
November 1958	November 1958 to November 1959	7	276,950	460,000	460,000	0.030	0.0463	0.069			
November 1957	November 1957 to November 1958	5	336,860	682,000	682,000	0.032	0.0438	0.06			
November 1956	November 1956 to November 1957	3	403,866	693,000	693,000	0.0425	0.0489	0.054			
February 1956	February 1956	1	388,250	388,250	388,250	0.0387	0.0397	0.080	1 \$0.080	1 \$0.080	1 \$0.080
November 1955	November 1955 to November 1956	4	257,500	530,000	530,000	0.038	0.036	0.036			
November 1954	November 1954 to November 1955	2	523,000	523,000	523,000	0.049	0.049	0.045			

1 Only applicable up to August 1958; different commodity thereafter.

06-11-33 WPI Spec. 1953-58: Carbon dioxide, industrial, cylinder, producer to first buyer, f.o.b. works; Friday price.

TABLE B-9A.—Oxygen, General Use, 200-Foot's Cylinder, Delivered Various Destinations

Contract date	Contract period	Number of contracts	Quantity (ft. ³)			Actual transaction price (dollars per 100 ft. ³ no time discount)			BLS price index for contract period		
			Low	\bar{X}	High	Low	\bar{X}	High	Low	\bar{X}	High
November 1959	November 1959 to November 1960	11	325,620	1,444,300	3,320,000	\$0.45	\$0.597	\$0.854	114.3	114.3	114.3
November 1958	November 1958 to November 1959	12	349,000	1,719,400	9,030,400	.52	.651	1.175	114.3	114.3	114.3
November 1957	November 1957 to November 1958	12	347,400	1,836,600	5,237,100	.49	.697	1.075	114.3	114.3	114.3
November 1956	November 1956 to November 1957	6	351,600	1,022,430	4,156,000	.60	.657	1.73	110.6	111.216	114.3
January 1956	January 1956 to November 1956	14	350,000	1,353,060	3,440,800	1.52	1.378	1.61	105.3	109.28	110.6
November 1954	November 1954 to November 1955	11	400,000	1,825,230	3,441,609	1.42	1.526	1.67	105.3	105.3	105.3

¹ F.o.b. plant price.

08-11-40 WPI Spec. 1958-60: Oxygen, liquefaction, 98½ percent pure, manufacturer to reseller, f.o.b. plant.

TABLE B-9B.—Oxygen, Users' Cylinders, 200-224 Ft.³ per Cylinder, F.O.B. Plant

Contract period	Number of bidders	Quantity (cylinders)	Sellers offered prices (dollars per 100 ft. ³ no time discounts)			BLS price index during contract period		
			Low	\bar{X}	High	Low	\bar{X}	High
July 1954, to July 1955.....	4	3,000	\$0.60	\$0.65	\$0.73	106.3	105.3	105.3
July 1958, to July 1959.....	2	4,200	.55	.73	¹ .91/2.40	114.3	114.3	114.3
July 1959, to July 1960.....	5	4,500	.41	.676	¹ 1.07/2.40	114.3	114.3	114.3
July 1960, to July 1961.....	5	4,250	.41	.686	¹ 1.07/2.40	114.3	-----	-----

¹ Believed to be nonprimary market price quotes, hence not used in calculation of the mean (\bar{X}).

06-11-49 WPI Spec. 1953-60: Oxygen, liquefaction, 99½ percent pure, manufacturer to seller, f.o.b. plant.

GOVERNMENT PRICE STATISTICS

TABLE B-10.—Soap, Laundry, White, 1-Pound Bar Delivered Various Destinations

Contract date	Delivery date	Company	Quantity ¹ (pounds)	Actual transaction price (dollars per pound, no time discount)	BLS prices for contract and delivery date	
					Contract	Delivery
July 1960	November 1954	Procter & Gamble	130,000	\$0.0606	\$0.162	\$0.162
November 1964	January 1955	Colgate Palmolive	44,000	.0605	.162	.163
May 1955	July 1955	Colgate Supply	57,000	.0533	.164	.164
July 1955	September 1955	Colgate Palmolive	25,840	.0512	.164	.164
April 1956	July 1956	Colgate Palmolive	100,000	.0582	.171	.174
October 1956	December 1956	Newport Soap	124,740	.0518	.174	.174
December 1956	December 1956	Do. & Gamble	7,520	.0722	.174	.174
January 1957	January 1957	Wet Coast Soap	52,800	.0601	.174	.177
January 1957	March 1957	National Milling & Chemical	16,380	.071	.177	.177
April 1957	July 1957	Concord Chemical	31,820	.070	.177	.177
June 1957	August 1957	Concord Products	127,260	.058	.182	.182
October 1957	December 1957	Valley Products	24,080	.062	.182	.182
Do.	January 1958	Valley Products	34,080	.062	.182	.182
November 1957	November 1957	Munro Chemical	10,020	.071	.182	.182
April 1958	July 1958	Pioneer Soap	28,020	.0668	.182	.182
April 1958	July 1958	Kamei Soap	83,820	.067	.182	.182
May 1958	August 1958	Munro Chemical	36,300	.064	.182	.182
June 1958	September 1958	Pioneer Soap	32,160	.0753	.182	.182
October 1958	February 1959	Munro Chemical	46,200	.0745	.182	.182
November 1958	November 1958	Pioneer Soap	19,500	.067	.190	.190
February 1959	April 1959	Munro Chemical	28,500	.056	.190	.190
June 1959	June 1959	Colgate Palmolive	238,470	.0410	.169	.169
September 1959	December 1959	Munro Soap	84,720	.063	.169	.164
December 1959	March 1960	Munro Soap				

¹ Standard carlot is 40,000 pounds.

06-71-21 WPI Spec. 1947-60: Soap, laundry, bars, white, household use, manufacturer to jobber, or other carlot, buyer carlots, delivered.

TABLE B-11.—*Soap, Laundry, Powdered, 100-Pound Drums, Delivered Various Destinations*

Contract date	Delivery date	Company	Quantity (pounds)	Actual transaction price (dollars per pound)	BLS price at contract date
March 1949	July 1949	Gillam Soap	20,000	\$0.089	\$0.127
Do	do	U. S. Soap	280,000	.09147	.127
May 1949	do	Kamen Soap	100,000	.0737	.105
August 1949	September 1949	do	50,000	.0689	.116
Do	do	do	100,000	.0824	.116
November 1949	March 1950	do	500,000	.0712	.119
August 1950	August 1950	Pioneer	10,200	.145	.136
Do	September 1950	Patek	1,000	.1325	.136
September 1950	do	do	2,400	.1425	.159
January 1951	March 1951	Gillam Soap	50,000	.1577	.197
February 1951	do	Los Angeles Soap	3,000	.210	.207
Do	do	Pacific Soap	10,000	.185	.207
April 1951	May 1951	Fitzpatrick	50,000	.1609	.187
Do	June 1951	Beach Soap	50,000	.1692	.187
July 1951	August 1951	Procter & Gamble	3,000	.0924	.150
July 1952	August 1952	Newport Soap	25,000	1.0775	.121
Do	do	Iowa Soap	40,000	1.066	.121
February 1953	June 1953	Lever Bros.	200,000	1.060	.091
June 1953	do	Kamen	108,000	1.066	.083
Do	October 1953	Swift	36,000	1.0662	.083
Do	September 1953	Newport	72,000	1.0702	.083
August 1953	August 1953	Colgate-Palmolive	3,040	.073	.083
October 1954	December 1954	Iowa Soap	20,000	.097	.109
Do	do	Pioneer	315,500	.1042	.109
Do	do	Murro	264,500	.0938	.109
February 1955	April 1955	J. T. Stayley	75,000	.0988	.132
Do	do	Gillam	50,000	.1138	.132
Do	do	Newport	85,000	.1104	.132
November 1955	January 1956	West Coast Soap	63,000	.1062	.129
Do	December 1955	Murro Chem	226,000	.1034	.129
December 1955	February 1956	Pacific Chem	5,000	.121	.129

¹ Price includes cost of drums.

06-71-41 WPI Spec. 1947-56: Soap, powdered or granulated, for laundry use, bulk, delivered in specified area.

TABLE B-12.—*Paint, Interior, Flat, First Grade, White, in One Gallon Cans, Delivered Various Destinations*

Contract date	Delivery date	Company	Quantity (gallons)	Actual transaction price (dollars per gallon)	BLS price at contract date
March 1951	March 1951	Old Colony Paint	100	\$1.89	\$2.74
December 1951	December 1951	Bradley Paint	1,000	1.50	2.762
February 1952	March 1952	Central Paint & Varnish	3,700	1.47	2.771
August 1952	September 1952	Carolina Paint	500	1.48	2.782
Do	do	Central Paint & Varnish	600	1.58	2.782
December 1952	June 1952	Jaegle Paint & Varnish	2,000	1.47	2.782
March 1953	May 1953	William A. Smith	1,100	1.46	2.782
June 1954	July 1954	Ampruf Paint	2,100	1.499	2.868
Do	do	Pur-all Products	600	1.58	2.868
May 1955	August 1955	William A. Smith	1,800	1.33	2.945
Do	July 1955	Ampruf Paint	4,300	1.468	2.945
February 1956	April 1956	Hub Paint & Varnish	1,300	1.42	3.116
May 1956	July 1956	Olympic Paint	800	1.58	3.116
August 1956	October 1956	S. K. Labs	2,600	1.49	3.116
November 1956	December 1956	Ampruf	4,000	1.45	3.242
April 1957	September 1957	William A. Smith	3,068	1.53	3.264
Do	do	Ampruf	500	1.49	3.264
May 1957	do	do	5,500	1.39	3.280
July 1957	January 1958	Atlas Paint	6,000	1.40	3.383
Do	February 1958	Hub Paint	3,700	1.46	3.383
Do	January 1958	Ampruf	900	1.39	3.383
October 1957	February 1958	do	4,000	1.35	3.383
Do	do	William A. Smith	400	1.85	3.383
April 1958	September 1958	Hub Paint	1,900	1.48	3.383
Do	August 1958	Ampruf Paint	2,828	1.59	3.383
October 1958	March 1959	Allied Paint	430	1.66	3.396
February 1959	June 1959	Ampruf	700	1.69	3.405
Do	do	Hub Paint	3,868	1.44	3.405

06-21-31 WPI Spec. 1947-60: Paint, inside, white, flat, 1st grade, gallon cans; f.o.b. destination delivered specified area, or freight allowed or prepaid on specified amounts.

TABLE B-13.—Enamel, Class A (First Grade), Exterior and Interior White, in (1) Gallon Cans, Four to the Case, Delivered Various Destinations

Bid opening date	Delivery date	Destination	Number of bidders	Quantity (gallons)	Sellers' offered price (dollars per gallon, no time discounts taken)			BLS price from opening to delivery		
					Low	\bar{X}	High	Opening	\bar{X}	Delivery
Dec. 19, 1956	60 days	Read Valley, N.J.	11	37,532	\$1.94	{ ¹ \$2.31 2.74	{ ¹ \$3.17 7.05	{ ² \$4.986 4.980	{ ² \$4.986 4.980	\$4.986
Jan. 7, 1957	120 days	Read Valley, N.J.	6	3,688	1.94	{ 2.07	{ 2.23	{ 4.986	{ 4.983	4.980
Mar. 19, 1957	Within 150 days	Massachusetts, Rhode Island, Virginia, South Carolina, Illinois, Virginia, South Carolina, Texas.	8	9,092	2.15	{ 2.36	{ 2.90	{ 4.980	{ 5.023	5.128
June 17, 1957	Within 150 days	Virginia, South Carolina, Texas.	6	4,800	1.79	{ 2.22	{ 3.00	{ 5.029	{ 5.108	5.128

¹ \bar{X} and high disregarding the \$7.05 quote which is believed to be a nonprimary market quote.

² Series has been spliced; no change in index.

³ F.o.b. price quote.

06-21-21 WPI Spec. 1954-57: Enamel, white or colors, first grade, gallon cans, manufacturer to retailer. F.o.b. factory, freight allowed on specified amounts. 1958: In case lots of 4 gallons to the case.

TABLE B-14.—Gasoline, Minimum 86 Octane, Research Method, Gulf Coast, F.O.B. Refinery

Bid opening date	Number of bidders	Quantity (gallons)	Sellers' offered price (dollars per gallon; no time discount)			BLS price for gulf coast 87 octane gasoline	BLS price adjusted to approximate gulf coast 86 octane gasoline (-\$0.002)
			Low	\bar{X}	High	Opening month	Opening month
Apr. 20, 1954	9	113,400,000	\$0.0974	\$0.1027	\$0.1150	\$0.103	\$0.101
June 16, 1954	8	1,890,000	.0950	.0993	.1024	.103	.101
Nov. 6, 1954	10	6,510,000	.09333	.0997	.1033	.105	.103
		21,000,000					
May 4, 1955	10	18,060,000	.0948	.1009	.1075	.105	.103
Aug. 3, 1955	6	4,872,000	.0992	.1038	.1100	.105	.103
Oct. 25, 1955	3	10,080,000	.0844	.0855	.0875	.105	.103
Apr. 25, 1956	3	2,100,000	.099	.1047	.11	.105	.103
		10,080,000					
Oct. 9, 1956	10	3,360,000	.0985	.1013	.10495	.105	.103
		840,000					
Oct. 30, 1956	9	1,480,000	.09585	.0983	.10495	.105	.103
Dec. 12, 1957	1	10,080,000	.09615	.09615	.09615	.104	.102
Apr. 30, 1958	8	38,430,000	.0949	.1000	.10625	.096	.094
		10,080,000					

¹ Special cold weather gasoline, same octane.

05-51-02 WPI Spec. 1954-60: Gasoline, gulf coast, regular grade, 87 octane research, minimum of 20,000 barrels (840,000 gallons), refiner to other refiner, export agent, or tanker terminal operator, cargo lots, f.o.b. ship at gulf, Monday price.

TABLE B-15.—*Pennsylvania Anthracite, Buckwheat No. 1, F.O.B. Car at Mine*

Bid opening date	Period of contract	Months of price offer	Number of bidders	Quantity (net tons)	Sellers' offered price (dollars per net ton, all discounts taken)			BLS prices during contract period		
					Low	\bar{X}	High	Low	\bar{X}	High
Apr. 16, 1951.....	July 1951 to June 1952.....	July.....	9	8,000	\$7.70	\$7.88	\$7.90	\$7.942	\$7.963	\$7.963
Do.....	do.....	August to June.....	9	8,000	7.73	7.84	8.00	7.963	8.194	8.194
Apr. 14, 1952.....	July 1952 to June 1953.....	July to September.....	11	8,400	7.48	7.77	7.90	7.963	8.194	8.194
Do.....	do.....	October to June.....	11	8,400	7.48	7.50	8.00	8.019	8.219	8.219
Aug. 8, 1952.....	August to September 1952.....	August to September.....	11	4,000	7.90	7.90	7.90	7.90	8.219	8.219
Apr. 22, 1953.....	July 1953 to June 1954.....	July to September.....	10	9,000	8.41	9.63	10.40	10.189	10.215	10.263
Do.....	do.....	October to June.....	10	9,000	8.41	9.63	10.40	9.430	9.685	10.263
May 18, 1954.....	July 1954 to June 1955.....	July to June.....	11	9,000	8.94	7.70	8.90	8.864	9.431	9.684
May 10, 1955.....	July 1955 to June 1956.....	do.....	12	10,500	5.05	5.75	7.00	8.589	8.687	9.533
May 14, 1956.....	July 1956 to June 1957.....	do.....	12	10,500	5.05	7.44	8.57	8.799	9.75	10.698
May 10, 1957.....	July 1957 to June 1958.....	August to September.....	6	8,000	9.65	10.06	10.29	10.031	10.196	10.360
Do.....	do.....	October.....	5	8,000	9.90	10.43	10.73	10.808	10.998	11.179
Do.....	do.....	November to June.....	6	8,000	9.90	10.43	10.73	10.003	10.273	10.325
June 20, 1958.....	July 1958 to June 1959.....	August to September.....	8	6,500	8.47	8.92	9.63	10.22	10.703	10.854
Do.....	do.....	October to March.....	8	6,500	8.47	9.11	9.63	10.703	10.698	11.364
Do.....	do.....	April.....	8	6,500	8.47	9.05	9.63	10.241	10.241	10.241
Apr. 16, 1959.....	July 1959 to June 1960.....	August to June.....	11	6,000	7.84	8.63	9.66	10.185	10.589	10.891

05-11-03 WPI Spec. 1951-60: Pennsylvania anthracite, buckwheat No. 1, f.o.b. car at mine.

TABLE B-16.—Pennsylvania Anthracite, Chestnut, F.O.B. Car at Mine

Bid opening date	Period of contract	Months of price offer	Num-ber of bidders	Quan-tity (net tons)	Sellers' offered price (dollars per net ton, all discounts taken)			BLS price during contract period		
					Low	\bar{X}	High	Low	\bar{X}	High
Apr. 16, 1951	July 1951 to June 1952	July	11	7,000	\$12.80	\$13.31	\$14.16	-----	\$14.166	-----
Do	do	August	11	7,000	12.95	13.35	14.25	-----	14.319	-----
Do	do	September	11	7,000	12.95	13.49	14.46	-----	14.513	-----
Do	do	October to June	11	7,000	12.95	13.55	14.45	-----	\$13.394	14.173
Apr. 14, 1952	July 1952 to June 1953	July to Aug. 18	16	7,200	11.32	12.43	13.85	-----	13.869	13.99
Do	do	Aug. 18 to September	16	7,200	11.32	12.45	14.16	-----	14.119	14.219
Do	do	October to June	16	7,200	11.32	12.59	14.45	-----	14.619	15.288
Aug. 8, 1952	August 1952 to September 1952	August to September	11	4,000	10.53	11.40	13.05	-----	14.119	14.219
Apr. 23, 1953	July 1953 to June 1954	July to September	15	8,400	11.34	12.73	14.80	-----	15.319	15.542
Do	do	October to December	15	8,400	11.34	12.76	14.80	-----	15.508	15.525
Do	do	January to March	15	8,400	11.34	12.80	14.80	-----	15.533	15.533
Do	do	April to June	15	8,400	11.34	12.73	14.80	-----	12.850	13.273
Do	do	July to June	15	300	9.20	10.64	14.34	-----	11.829	13.349
May 18, 1954	July 1954 to June 1955	do	12	3,500	9.12	10.33	12.49	-----	12.257	13.160
May 10, 1955	July 1955 to June 1956	do	12	1,500	10.73	11.57	12.74	-----	12.88	14.198
May 15, 1956	July 1956 to June 1957	do	7	3,000	9.70	10.80	12.49	-----	13.685	13.818
June 20, 1958	July 1958 to June 1959	August to September	13	3,000	9.70	11.00	12.49	-----	14.343	14.966
Do	do	October to March	13	3,000	9.70	10.88	12.49	-----	13.391	14.551
Do	do	April	13	2,000	8.53	10.25	12.34	-----	13.188	14.651
Apr. 16, 1959	July 1959 to June 1960	July to June	13	2,000	8.53	10.25	12.34	-----	14.131	-----

05-11-01 WPI Spec. 1951-60: Pennsylvania anthracite, chestnut, f.o.b. car at mine.

TABLE B-17.—*Pennsylvania Anthracite, Pea, F.O.B. Car at Mine*

Bid opening date	Period of contract	Months of price offer	Number of bidders	Quantity (net tons)	Sellers' offered price (dollars per net ton, all discounts taken)			BLS price during contract period		
					Low	\bar{X}	High	Low	\bar{X}	High
Apr. 23, 1953.....	July 1953 to June 1954.....	July to June.....	12	400	\$9.50	\$10.02	\$10.69	\$9.90	\$11.514	\$12.169
May 18, 1954.....	July 1954 to June 1955.....	do.....	9	150	8.24	8.95	10.66	9.87	10.44	10.757
May 10, 1955.....	July 1955 to June 1956.....	July to December.....	10	50	6.95	7.75	8.47	10.086	10.287	10.623

10-11-02 WPI Spec. 1953-60: Pennsylvania anthracite, pea, f.o.b. car at mine.

TABLE B-18.—*Bituminous Coal, Egg 5 to 7 Inches x 2 to 3 Inches, F.O.B. Car at Mine*

Bid opening date	Period of contract	Number of bidders	Quantity (net ton)	Sellers' offered price (dollars per net ton, no time discount)			BLS price during contract period		
				Low	\bar{X}	High	Low	\bar{X}	High
Apr. 9, 1951.....	July 1951 to June 1952.....	11	3,600	\$5.30	\$5.61	\$6.00			
Mar. 27, 1952.....	July 1952 to June 1953.....	7	1,000	4.75	5.30	5.75			
Nov. 13, 1952.....	November 1952 to June 1953.....	13	3,200	6.23	6.57	6.90			
Mar. 31, 1953.....	July 1953 to June 1954.....	7	4,000	4.65	6.09	6.50			
Apr. 20, 1954.....	July 1954 to June 1955.....	12	3,600	4.69	4.82	6.15			
Mar. 29, 1955.....	July 1955 to June 1956.....	5	3,600	4.60	4.87	6.50			
Apr. 4, 1956.....	July 1956 to June 1957.....	6	3,600	6.00	6.17	6.50			
Apr. 16, 1957.....	July 1957 to June 1958.....	4	3,600	4.65	6.95	6.95			
Nov. 17, 1958.....	November 1958 to June 1959.....	7	1,500	4.65	5.16	6.80			
Mar. 27, 1959.....	July 1959 to June 1960.....	9	2,500	4.70	5.13	6.00			

* First introduced in April 1954.
 * Only for period of July 1957 to May 1958.

05-12-04 WPI Spec. 1954-60: Bituminous coal, large domestic sizes, producer to retail dealer, f.o.b. car at mine.

TABLE B-19.—Coke Foundry, Byproduct, F.O.B. Foundry

Bid opening date	Period of contract	Location	Number of bidders	Quantity (net ton)	Sellers' offered price (dollars per net ton, no time discount)			BLS price during contract period			
					Low	\bar{X}	High	Low	\bar{X}	High	
June 8, 1964.....	July 1964 to June 1965.....	Ironton, Ohio.....	1	400		\$21.24					
May 8, 1956.....	July 1956 to June 1957.....	do.....	1	400		24.74					
July 30, 1957.....	August 1957 to June 1958.....	do.....	1	400		25.74					
Oct. 3, 1958.....	October 1958 to June 1959.....	do.....	1	300		27.74					
July 30, 1957.....	August 1957 to June 1958.....	Birmingham, Ala.....	1	400		28.50					
Oct. 3, 1958.....	October 1958 to June 1959.....	do.....	1	300		28.50					
July 16, 1959.....	August 1959 to June 1960.....	do.....	1	500		28.50					
July 20, 1957.....	August 1957 to June 1958.....	Swedeland, Pa.....	1	400		29.50					
July 16, 1959.....	August 1959 to June 1960.....	do.....	1	500		31.00					

1 Individual coke price series first given in 1957.
 2 Prices are actually Tarrant, Ala., 3 miles from Birmingham, Ala.
 3 05-20 WPI Spec. 1957-1960: Coke, foundry, Byproduct, L.o.b. Swedeland, Pa. (Birmingham, Ironton), ovens, Wednesday price.

GOVERNMENT PRICE STATISTICS

TABLE B-20.—*Aluminum Alloy Sheet, No. 3003 (35), H-14, 0.064 Inches \times 36 Inches \times 96 Inches, Delivered Various Destinations*

Contract date	Delivery date	Company	Quantity (pounds)	Actual transaction price, (dollars per pound, no time discount)	BLS price at contract price
January 1955	April 1955	Mettempex	30,000	\$0.308	\$0.367
September 1955	December 1955	Alcoa	3,000	.449	.393
December 1955	March 1956	Mettempex	5,000	.355	.393
May 1956	July 1956	T. I. Alum., Ltd.	5,600	.38	.408
November 1956	February 1957	Atl. Steel and Iron	16,000	.359	.427
December 1956	March 1957	Alcoa	3,600	.427	.427
January 1957	January 1957	do.	11,000	.427	.427
May 1957	October 1957	Mettempex	7,000	.3704	.427
May 1958	October 1958	do.	5,200	.3436	.429
August 1958	January 1959	do.	10,500	.3564	.443
November 1958	April 1959	do.	32,000	.3175	.443
June 1959	December 1959	Atl. Alum. and Met.	15,000	.3296	.443

10-25-01 WPI Spec 1949-60: Aluminum sheet, 3003 (or 35), H-14 mill finish, hard alloy; 0.064 inches \times 48 inches \times 144 feet, 30,000-pound-base quantity, manufacturer to user, f.o.b. shipping point, freight allowed.

TABLE B-21.—*Aluminum Ingot, Primary, Grade 2, Commercial, F.O.B. Plant*

Bid opening date	Delivery date	Number of bidders	Quantity (pounds)	Sellers' offered price (per pound, no time discount)			BLS price at opening and delivery date	
				Low	\bar{X}	High	Opening	Delivery
Dec. 31, 1953	75 days	3	30,000	\$0.1875	\$0.1963	\$0.2013	\$0.215	\$0.215
Jan. 28, 1955	30 days	1	22,401	.225	.225	.225	.227	.232
May 26, 1955	30 days	4	17,320	.2045	.2321	.2735	.232	.232
March 15, 1956	90 days	1	30,000	.2284	.2284	.2284	.244	.259
May 28, 1956	100 days	2	50,000	.2434	.2458	.2481	.259	.271

WPI Spec. 1947-60: Aluminum ingot, 30 pounds, 99 percent plus, base price, 10,000 pounds and over, f.o.b. shipping point, freight allowed.

TABLE B-22.—*Brass Bar, Free Turning, Commercial, Half Hard Round, 1/2-Inch dia. 0.723 Pound per Foot, Delivered Various Destinations*

Contract date	Delivery date	Company	Quantity (pounds)	Actual transaction price (dollars per lb., no time discount)	BLS price as of contract and delivery date	
					Contract	Delivery
February 1952	June 1952	American Brass Co.	1,000	\$0.3258	(¹)	(¹)
April 1952	July 1952	Mueller Brass Co.	14,500	.328	(¹)	(¹)
June 1952	October 1952	do.	6,200	.328	(¹)	(¹)
January 1953	April 1953	Revere Copper	2,500	.3330	(¹)	(¹)
March 1953	April 1953	Titan Metal Manufacturing.	2,000	.3345	(¹)	(¹)
January 1954	April 1954	do.	1,800	.3442	\$0.349	\$0.349
March 1954	July 1954	do.	2,000	.3375	.349	.349
August 1954	October 1954	do.	7,000	.3265	.349	.351
November 1954	March 1955	do.	2,000	.3275	.351	.358
January 1955	January 1955	Revere Copper	2,000	.336	.339	.339
August 1955	September 1955	Mueller Brass	5,000	.3705	.395	.427
April 1956	June 1956	Revere Copper	200	.4425	.464	.455
February 1957	July 1957	Scoville Manufacturing.	1,400	.3712	.388	.328
May 1957	June 1957	Chase Brass	2,280	.3464	.349	.348
June 1958	September 1958	Bridgeport Brass	4,000	.2833	.293	.290
August 1958	November 1958	Chase Brass	4,000	.2408	.290	.300
September 1959	March 1960	Mueller Brass	3,700	.3145	.330	.317

¹ Commodity first introduced in 1954.

10-25-13 WPI Spec. 1954-60: Yellow brass rod, free cutting, round, 3/4 inch to 1/2 inch, random lengths, 5,000 to 10,000 pounds, manufacturer to distributors warehouse; f.o.b. mill, freight allowed or prepaid.

TABLE B-23 (a).—Steel, Sheet, Medium, Black, 0.125 Inch (10 Gage) x 48 Inches x 120 Inches, 20½ Pounds per Sheet, F.O.B. Mill

Contract date	Delivery date	Company	Quantity (pounds)	Actual transaction price, (dollars per 100 pounds)			BLS price at contract date
				Unadjusted	Adjustment 1 ¹	Adjustment 2 ²	
February 1949	August 1949	Armco	145,000	\$4.20	\$3.15		\$3.60
April 1949	October 1949	Bethlehem	140,000	4.30	3.25		3.60
December 1949	January 1950	Alan Wood	20,000	4.20	3.15		3.60
Do	February 1950	Bethlehem	180,000	4.10	3.05		3.60
November 1950	February 1951	Armco	20,400	4.75	3.70		3.70
December 1950	February 1950	Bethlehem	40,800	4.82	3.77		3.95
January 1951	March 1951	United States Steel	81,410	4.72	3.67		3.95
Do	January 1952	Bethlehem	112,200	5.02	3.97		3.95
Do	December 1951	United States Steel	56,100	4.825	3.775		3.95
April 1951	September 1951	do	530,000	4.70	3.65		3.95
March 1952	September 1952	do	180,000	4.72	3.67		3.95
May 1952	October 1952	do	230,000	4.90	3.85		3.95
November 1952	June 1953	Armco	—	4.88	3.83		4.125
December 1952	do	Bethlehem	25,000	5.03	3.98		4.125
September 1953	February 1954	United States Steel	60,000	5.75	4.70		4.765
Do	March 1954	Bethlehem	160,000	5.575	4.525		4.765
Do	February 1954	United States Steel	20,198	5.625	4.578	\$3.848	4.765
July 1954	October 1954	Bethlehem	40,000	5.80	4.75		4.88
August 1954	do	Jones & Laughlin	20,000	5.00	3.95		4.88
August 1956	October 1956	Republic Steel	380,640	6.95	5.90		5.695
October 1956	March 1957	do	158,208	6.95	5.90		5.695
December 1956	June 1957	Jones & Laughlin	206,880	6.7	5.65		5.695
February 1958	April 1958	Bethlehem	114,400	7.32	6.27		6.192

¹ \$1.05 adjustment for quality and marking costs as suggested by the Navy, based on sellers' price.

² Price excluding average transportation charge.

³ Price quoted for 11 gage; however, 10 gage had the same list price.

⁴ Price includes an average delivered transportation cost added by the Government.

10-14-46 WPI Spec. 1948-53: Sheet, hot rolled, carbon steel, 11 gage, 36 inches to 48 inches wide, 10 feet long, base quantity, f.o.b. producing points, Pittsburgh area.
 1953-60: 10 gage x 48 inches x 120 inches, sheared edge, base chemistry, commercial quality, base quantity, mill to user, f.o.b. mill.

TABLE B-23 (b).—Steel Sheet, Hot Rolled, Grade M, 0.125 Inch (10 Gage) x 48 Inches x 120 Inches, F.O.B. Mill

Bid opening date	Delivery date	Number of bidders	Quantity, pounds	Sellers' offered price (dollars per 100 pounds, all discounts taken)			BLS price, opening to delivery date		
				Low	\bar{X}	High	Open-ing	\bar{X}	De-livery
July 12, 1954	October 1954	3	40,000	\$4.53	\$4.66	\$4.73-\$7.52	\$4.88	\$4.88	\$4.88
Sept. 10, 1954	January 1955	3	300,324	4.19	4.70	5.25	4.87	4.878	4.88
Apr. 4, 1955	April 1955	3	14,288	4.14	4.68	5.40-5.89	4.87	4.87	4.87
Apr. 12, 1955	July 1955	3	40,000	4.30	4.53	4.93-5.40	4.87	4.939	5.145

¹ Doubtful whether Atlantic Steel & Trading is considered in the primary market.

² Kaiser bid on only 19,723 pounds of steel for west coast delivery.

³ Kaiser bid.

⁴ Doubtful whether A. M. Castle & Co. is considered in the primary market.

10-14-46 WPI Spec. 1953-60: Sheets, hot rolled, carbon steel, 10 gage x 48 inches wide x 120 inches long, sheared edge, cut length base chemistry, commercial quality, base packaging, base quantity, mill to user, f.o.b. mill.

TABLE B-24.—Steel Plate, Black, Grade M, 0.250 Inch x 72 Inches x 240 Inches

[F.o.b. mill]

Bid opening date	Delivery date	Number of bidders	Quantity (pounds)	Sellers' offered price (dollars per 100 pounds, discounts taken)			BLS price opening to delivery date		
				Low	\bar{X}	High	Opening	\bar{X}	Delivery
May 23, 1955.....	July 1955.....	1 2	22,032	\$4.35	\$4.47 14.75	\$4.60 15.30	\$4.675	\$4.765	\$4.950
May 9, 1955.....	August 1955.....	2	36,720	4.35	4.46	4.56	4.675	4.813	4.950
June 23, 1955.....	July 1955.....	2	61,408	4.45	4.48	4.50	4.675	4.813	4.95
June 20, 1957.....	November 1957..	2	70,922	5.82	5.43	5.64	5.90	6.108	6.15

¹ Includes Goodstein Iron & Steel quotation supplying Bethlehem Steel from Sparrows Point, Md.

10-14-26 WPI-Spec. 1953-59: Plates, carbon steel, 0.250 inch x 72 inches x 240 inches, ASTM specification A7, base quantity, mill to user, f.o.b. mill.

TABLE B-25.—Plywood, Douglas Fir, Exterior Type, Grade A-C, 5/8 Inch x 48 Inches x 96 inches, 3 Ply, Untreated

[F.o.b. mill]

Contract date	Delivery date	Company	Quantity (feet)	Actual transaction price			BLS price at contract date
				Dollars per board	Dollars per 1,000 feet ¹	Adjusted ²	
January 1952.....	February 1952.....	North Robbins Plywood.	58,880	\$3.60	\$112.50	-----	\$114.41
August 1952.....	September 1952.....	Weyerhaeuser.....	47,328	3.62	113.13	-----	120.094
November 1952.....	December 1952.....	do.....	26,752	3.30	103.13	-----	109.637
January 1953.....	February 1953.....	do.....	22,400	3.66	114.38	-----	116.252
November 1953.....	December 1953.....	Sbaefers Woerner.....	35,200	3.42	106.88	-----	108.443
Do.....	do.....	Weyerhaeuser.....	115,200	3.33	104.06	-----	108.443
February 1954.....	March 1954.....	do.....	87,680	3.48	108.75	-----	114.390
Do.....	do.....	Georgia-Pacific.....	27,138	3.57	111.56	-----	114.390
May 1954.....	June 1954.....	Weyerhaeuser.....	13,120	3.26	101.88	-----	109.063
December 1954.....	December 1954.....	North Robbins.....	16,000	3.82	119.38	-----	114.390
January 1955.....	March 1955.....	Aetna Plywood.....	24,000	3.84	120.00	\$108.69	114.390
August 1955.....	September 1955.....	Arcata Plywood.....	44,800	3.86	120.63	109.31	115.671
November 1955.....	December 1955.....	do.....	5,600	3.90	121.88	109.94	115.671
February 1956.....	April 1956.....	Northwest Door.....	26,688	4.13	129.06	111.19	123.217
May 1956.....	July 1956.....	do.....	64,000	3.58	111.88	116.91	112.179
August 1956.....	October 1956.....	do.....	19,200	3.19	99.69	89.73	101.721
Do.....	do.....	Weyerhaeuser.....	16,000	3.14	98.13	87.54	101.721
November 1956.....	January 1957.....	Harbor Plywood.....	49,600	2.948	92.13	85.98	92.215
Do.....	do.....	Georgia-Pacific.....	3,200	2.948	92.13	79.98	92.215
Do.....	do.....	Northwest Door.....	12,800	2.86	89.38	79.98	92.215
February 1957.....	April 1957.....	Roddiscraft.....	3,200	3.15	98.44	77.23	101.721
May 1957.....	July 1957.....	Northwest Door.....	7,680	3.08	96.25	85.29	101.721
Do.....	do.....	Columbia Plywood.....	9,600	3.14	98.13	84.10	101.721

¹ Delivered price.

² Price excluding the average delivered transportation cost in applicable cases.

³ Price includes an average delivered transportation cost calculated by the Government.

08-31-02 WPI Spec. 1947-58: Plywood, Douglas-fir, exterior, A-C grade, 5/8 inch x 36 inches x 96 inches sheets, 3-ply carlots, f.o.b. mill.

TABLE B-26.—Plywood, Douglas Fir, Grade A-D, Interior, Untreated, 1/4 Inch x 48 Inches x 96 Inches, 3 Ply

[F.o.b. mill]

Contract date	Delivery date	Company	Quantity (feet)	Actual transaction price			BLS price at contract date
				Dollars per board	Dollars per 1,000 feet ¹	Adjusted ²	
December 1951	February 1952	Ply-Bilt	55,232	\$2.08	\$65.00		\$71.30
May 1952	May 1952	Columbia Plywood	26,464	2.48	77.50		83.494
August 1952	September 1952	Dant & Russell	42,912	2.48	77.50		83.494
Do	do	Weyerhaeuser	18,784	2.53	79.08		83.494
November 1952	December 1952	Coquille Plywood	39,040	2.32	72.50		76.053
December 1952	January 1953	Weyerhaeuser	67,200	2.50	78.13		76.053
April 1953	June 1953	Davidson Plywood	18,400	2.82	88.13		85.560
Do	May 1953	Weyerhaeuser	31,840	2.81	87.81		85.560
May 1953	June 1953	California Builder	200,000	2.80	87.50		85.560
November 1953	December 1953	Weyerhaeuser	28,800	2.34	73.13		74.733
February 1954	March 1954	Dant & Russell	48,000	2.50	78.13		80.807
Do	do	Anacortes	25,600	2.50	78.13		80.807
May 1954	June 1954	Weyerhaeuser	52,800	2.32	72.50		74.733
Do	do	do	6,400	2.30	71.88		74.733
July 1954	August 1954	do	32,000	2.65	82.81	\$75.31	79.863
November 1954	December 1954	North Robbins	32,000	2.69	84.06	76.56	80.807
Do	do	California Plywood	64,000	2.64	82.50	75.00	80.807
January 1955	March 1955	Arcata Plywood	32,000	2.69	84.06	76.56	80.807
April 1955	May 1955	California Plywood	80,000	2.70	84.38	76.88	80.807
June 1955	August 1955	Northwest Door	6,400	2.67	83.44	75.94	80.807
July 1955	do	Arcata	33,600	2.70	84.38	76.88	80.807
August 1955	September 1955	North Robbins	14,400	2.72	85.00	77.50	80.807
Do	do	Arcata	19,200	2.72	85.00	77.50	80.807

¹ Delivered price.

² Price excluding the average delivered transportation cost in applicable cases.

³ Price includes an average delivered transportation cost added by the Government.

08-31-01 WPI Spec. 1951-58: Plywood, Douglas fir, interior, grade A-D, 1/4 x 48- x 96-inch sheets, 3-ply, carlots or mixed carlots, f.o.b. mill.

TABLE B-27.—Tape, Gummed Paper, 100 Percent Unbleached Sulfate, Kraft, Class 2, 3 Inches Wide, 600 Feet per Roll, 10 Rolls per Bundle, Delivered Various Destinations

[Minimum tensile breaking strength, 45 pounds]

Contract date	Delivery date	Company	Quantity (rolls)	Actual transaction price (dollars per 10 rolls)		BLS price at contract date
September 1951.....	December 1951.....	Adhesive Prod.....	3,000	\$8.90		\$7.20
Do.....	do.....	Buikley Dunton.....	5,000	6.79		7.20
January 1952.....	March 1952.....	Hudson Pulp.....	3,600	5.22		7.20
March 1952.....	July 1952.....	Gummed Prod.....	3,000	5.18		7.20
December 1952.....	May 1953.....	do.....	2,200	6.55		6.90
February 1953.....	July 1953.....	do.....	7,000	5.663		7.125
July 1953.....	August 1953.....	Mid-States Gummed.....	800	7.20		6.90
September 1953.....	October 1953.....	Stocker Mfg.....	10,900	5.40		6.90
March 1954.....	May 1954.....	Gummed Prod.....	6,000	5.212		6.30
July 1955.....	September 1955.....	Crowell.....	3,600	5.844		6.60
November 1955.....	do.....	Adhesive Prod.....	1,090	6.90		6.60
Do.....	do.....	Arlington Sales.....	3,000	6.45		6.60
December 1955.....	do.....	Stocker Mfg.....	1,820	5.98		6.60
February 1956.....	April 1956.....	General Gummed.....	6,120	5.578		6.60
May 1956.....	August 1956.....	Hyman & Sons.....	6,340	5.60		6.60
Do.....	do.....	General Gummed.....	2,670	5.70		6.60
August 1956.....	September 1956.....	do.....	180	5.99		6.60
December 1956.....	February 1957.....	do.....	2,630	5.80		6.60
May 1957.....	June 1957.....	Piedmont.....	3,750	6.10		6.10
Do.....	July 1957.....	General Gummed.....	13,180	5.649		6.10
October 1957.....	December 1957.....	Piedmont.....	7,880	5.74		6.10
Do.....	do.....	Adhesive.....	1,070	6.00		6.10
January 1958.....	March 1958.....	Atlantic Gummed.....	4,000	4.045		6.288
May 1958.....	July 1958.....	Central Paper.....	1,480	6.02		6.288
August 1958.....	October 1958.....	General Gummed.....	600	5.70		6.10
November 1958.....	December 1958.....	do.....	9,500	5.51		6.10
January 1959.....	March 1959.....	do.....	7,610	5.708		5.95

09-54-01 WPI Spec. 1947-60: Gummed sealing tape, Std. No. 2, 60-pound basis, 600 feet, 3 inches width, bursting strength 92-100 percent, sulphate paper, animal glue, bundle of 10 3-inch rolls, 500 bundle lots (5,000 rolls), f.o.b. mill, carload freight allowed.

TABLE B-28.—Tubes, Automobile, 6.70 x 15, First Line, Delivered in Continental United States

Bid opening date	Period of contract	Number of bidders	Sellers' offered price (dollars per tube, no time discount)			BLS index during contract period		
			Low	X	High	Low	X	High
Apr. 26, 1956.....	July 11-Dec. 31, 1955.....	19	\$1.79	\$1.80	\$1.97	107.7	114.2	118.1
June 1, 1956.....	June 12, 1956.....	12	1.79	1.79	1.79	118.1	120.3	121.2
Nov. 6, 1956.....	Jan. 12, 1957.....	24	1.79	1.796	1.89	119.0	120.4	122.2
Sept. 30, 1957.....	Jan. 12, 1958.....	20	1.79	1.793	1.85	122.0	122.0	122.0
Oct. 22, 1958.....	Jan. 12, 1959.....	17	1.79	1.79	1.79	120.7	120.7	120.7
Apr. 15, 1959.....	Apr. 12, 1959.....	14	1.79	1.79	1.79	120.7	120.7	120.7
Oct. 12, 1959.....	Jan. 12, 1960.....	-----	1.79	1.79	1.79	120.7	-----	-----

07-22-01 WPI Spec. 1954-60: Tube, automobile, passenger and front tractor, 6.70 x 15, 1st line, manufacturer to wholesaler or dealer; f.o.b. factory, freight allowed on specified weight.

TABLE B-29.—Batteries, Storage, Lead Acid, Passenger and Commercial Vehicles, 1H, High, 6 Volt, Delivered Maryland, West Virginia, Virginia, District of Columbia

Bid opening date	Contract date	Quantity	Number of bidders	Sellers' offered price (dollars per battery; no time discount)			BLS index for period of contract		
				Low	\bar{X}	High	Low	\bar{X}	High
Feb. 2, 1949	April 1949 to March 1950.....	(¹)	6	\$12.51	\$13.88	{ \$16.32 133.08	\$92.03	\$101.7	\$114.9
Mar. 13, 1950	April 1950 to March 1951.....	(²)	14	7.84	10.01	14.95	92.3	99.78	107.0
Jan. 31, 1951	April 1951 to March 1952.....	(²)	6	9.52	12.76	15.56	107.0	111.08	113.7
(³)	April 1952 to March 1953.....	(²)	3	12.36	10.42	15.15	107.8	103.60	112.6
Jan. 27, 1953	April 1953 to March 1954.....	(²)	5	10.36	10.95	12.08	106.9	107.96	108.2
Feb. 1, 1954	April 1954 to March 1955.....	(²)	5	9.34	9.75	10.41	101.5	103.42	106.2
Feb. 4, 1959	May 1959 to April 1960.....	(²)	6	7.60	8.78	10.50	121.1	126.88	129.4

¹ Nonprimary market quotation.

² F.o.b. shipping point price.

³ Open contract, lot sizes from March 1949.

11-78-01 WPI Spec. 1947-60: Storage battery, automotive type, 6 volts, 3 cells, 15 plates per cell, 95-105 amperes at 20 meter rate, wood separators, manufacturer to distributor, jobber or dealer; f.o.b. factory, or f.o.b. factory, freight prepaid.

TABLE B-30.—Linoleum, Green, 1/8 Inch x 72 1/2 Inches Wide, Delivered Various Destinations

Contract date	Delivery date	Company	Quantity (yards ²)	Actual transaction price (dollars per yard ²)	BLS Price Index at contract date
August 1950.....	October 1952.....	Bonafide Mills.....	1,300	\$1.62	\$110.6
September 1952.....	November 1952.....	Congoleum-Nairn.....	2,600	1.71	110.6
September 1952.....	November 1952.....	Armstrong Cork.....	3,600	1.59	110.6
November 1952.....	April 1953.....	do.....	80,750	1.492	110.6
May 1953.....	October 1953.....	Bonafide Mills.....	9,500	1.59	111.9
November 1954.....	January 1955.....	Congoleum-Nairn.....	1,700	1.87	119.3
January 1955.....	April 1955.....	Bonafide Mills.....	16,200	1.78	120.4
Do.....	April 1955.....	Congoleum-Nairn.....	600	1.69	120.4
June 1955.....	January 1956.....	Bonafide Mills.....	9,000	1.55	120.4
Do.....	October 1955.....	do.....	5,000	1.51	120.4
January 1956.....	April 1956.....	Armstrong Cork.....	42,700	1.52	124.6
October 1956.....	June 1957.....	Bonafide Mills.....	11,200	1.60	127.2
December 1956.....	March 1959.....	do.....	5,259	1.49	128.4
Do.....	March 1957.....	Armstrong Cork.....	3,600	1.61	128.4
Do.....	March 1957.....	Congoleum-Nairn.....	24,700	1.57	128.4
January 1957.....	April 1957.....	Bonafide Mills.....	8,146	1.56	130.8
October 1957.....	January 1958.....	do.....	3,005	1.76	125.6
June 1958.....	January 1959.....	Congoleum-Nairn.....	4,400	1.60	128.6
October 1958.....	January 1959.....	do.....	800	1.73	128.6
November 1958.....	May 1959.....	Bonafide Mills.....	28,000	1.72	128.6
November 1959.....	April 1960.....	Congoleum-Nairn.....	6,000	1.73	130.5

12-32-01 WPI Spec. 1947-60: Linoleum, inlaid, standard gage, manufacturer to wholesaler or distributor, f.o.b. factory.

TABLE B-31.—Glass, Plate, Polished, Glazing Quality, 1/4-In., 25-50-Ft. Size, Delivered to D.C. and Contiguous Areas

Bid opening date	Contract period	Number of bidders	Quantity	Sellers' offered price (dollars per foot, no time discount)				BLS Index during contract period		
				Low	\bar{X}	High	Low	\bar{X}	High	
				July 11, 1949.....	August 1949 to February 1950.....	5, 17	(3)	\$56.6	1.57	\$0.65, 1.65
Jan. 12, 1950.....	February to August 1950.....	6, 17	(3)	.58	1.58	.65, 1.70	104.5	111.52	112.7	
(1)	August 1950 to February 1951.....	7, 16	(3)	.62	1.61	.77, 1.80	112.7	118.63	121.0	
(1)	February to August 1951.....	5, 14	(3)	.63	1.64	.75, 1.66	121.0	121.0	121.0	
June 26, 1951.....	August 1951 to February 1952.....	6, 17	(3)	.60	1.59	.74, 1.66	121.0	121.0	121.0	
(1)	February to August 1952.....	6	(3)	.61	1.62	.815	132.0	132.0	132.0	
(1)	August 1952 to February 1953.....	5	(3)	.61	.70	.80	132.0	132.0	132.0	
(1)	February to August 1953.....	5	(3)	.68	.72	.75	132.0	133.57	137.5	
(1)	August 1953 to February 1954.....	3	(3)	.75	.76	.78	137.5	137.5	137.5	
(1)	February to August 1954.....	3	(3)	.85	.86	1.24	137.5	139.84	145.7	
Jan. 11, 1956.....	August 1954 to February 1955.....	4	(3)	.80	1.07	1.88	145.7	145.7	145.7	
(1)	February to August 1955.....	4	(3)	1.07	1.07	1.8425	145.7	145.7	145.7	
(1)	August 1955 to February 1956.....	4	(3)	.81	.81	.84	145.7	145.7	145.7	
(1)	February to August 1956.....	4	(3)	.76	.75	.79	145.0	145.0	145.7	
(1)	August 1956 to February 1957.....	4	(3)	.71	.74	.79	144.3	144.3	145.6	
June 8, 1957.....	February to August 1957.....	5	(3)	.70	.74	.85	144.3	144.4	145.0	
(1)	August 1957 to February 1958.....	5	(3)	.72	.77	.85	144.3	144.4	145.0	
(1)	February to August 1958.....	5	(3)							
(1)	August 1958 to February 1959.....	4	(3)							

1 F.o.b. plant quote.

2 Open contract. \$50 to \$5,000 size per order.

3 Opening date approximately 1 month before contract period.

13-11-01 WPI Spec. 1949-60: Plate Glass, polished, 1/4-inch glazing quality, bracket 25 to 50 ft., manufacturer to jobber or wholesale distributor, carlots f.o.b. factory, freight equalized.

TABLE B-32.—*Golf Balls, Cadwell-Geer (or Equal), Top Grade, Processed Balata Cover, by the Dozen, Delivered East of the Mississippi (with Exception of Arkansas and Louisiana)*

Bid opening date	Contract period	Number of bidders	Quantity (dozen)	Sellers' offered prices (per doz., no time discount)			BLS index during contract period		
				Low	\bar{X}	High	Low	\bar{X}	High
(1) Aug. 1, 1949 to Jan. 31, 1950		7	(3)	\$4.74	\$5.70	\$6.84	100.1	102.2	104.4
(1) March 1950 to August 1950		7	(3)	4.41	5.81	7.02	104.4	104.60	105.0
(1) September 1950 to February 1951		6	(3)	4.10	5.27	6.84	109.7	109.7	109.7
(1) March 1951 to August 1951		5	(3)	4.07	5.43	7.27	109.7	109.7	109.7
(1) Feb. 19, 1951		4	(3)	4.45	5.23	6.00	109.7	110.6	110.4
(1) July 3, 1951		6	(3)	4.04	5.46	6.96	110.4	112.85	113.9
(1) March 1953 to August 1953		7	(3)	3.81	5.25	7.08	113.9	113.9	113.9
(1) September 1953 to February 1954		6	(3)	4.89	6.07	7.55	113.9	118.23	119.1
(1) March 1954 to August 1954		6	(3)	5.23	6.42	7.43	119.1	119.1	119.1
(1) September 1954 to February 1955		8	(3)	5.00	6.08	6.96	119.1	124.56	127.3
(1) March 1955 to August 1955		9	(3)	5.00	5.85	6.94	119.1	127.90	130.9
(1) September 1955 to February 1956		9	(3)	5.00	5.90	7.26	127.3	127.90	130.9
(1) March 1956 to August 1956		7	(3)	4.26	* 4.95	* 7.26	130.9	130.9	130.9
(1) July 21, 1957					5.64	9.75			
(1) Jan. 23, 1958		4	(3)	4.17	4.21	4.27	130.9	130.9	130.9
(1) September 1958 to February 1959		6	(3)	4.08	4.39	5.77	130.9	130.9	130.9
(1) March 1959 to August 1959		6	(3)	3.88	4.32	5.77	130.9	131.95	137.2
(1) June 10, 1959		8	(3)	3.83	4.61	7.26	137.2	137.2	137.2

15-12-21 WPI Spec. 1949-60: Golf ball, manufacturer to distributor, retailer or dealer
f.o.b. factory or shipping point.

1 Date not given—estimated 1 to 3 months prior to contract period.

2 Open contract—size of \$50-\$4,000 per order.

3 Calculated omitting most obvious nonprimary market quote

APPENDIX C

TABLE C-1.—Comparison of Yearly Average Prices on F.O.B. Plant Basis, 1951-59

Commodity	1951	1952	1953	1954	1955	1956	1957	1958	1959
Aluminum sulfate (dollars per 100 lbs.) commercial 17% Al_2O_3 :									
A.	\$1.55	\$1.562	\$1.669	\$1.767	\$1.775	\$1.762	\$1.799	\$1.875	\$1.968
B.	1.70	1.60	1.64	(¹)	1.653	1.795	(¹)	(¹)	(¹)
C.	1.65	1.65	1.767	1.850	1.850	1.850	1.925	2.00	2.00
Calcium carbide (dollars per ton):									
A.	84.537	84.302	82.749	89.179	93.853	96.972	99.894	99.991	103.08
B.	\$126.092	\$112.542	\$109.20	\$120.16	(¹)				
C.	\$126.717	\$132.267	\$134.40	\$134.40	\$134.40	\$134.40	\$139.267	\$149.00	\$149.00
Calcium chloride (dollars per ton) 77-80% solid to flake:									
A.	23.093	23.356	23.821	24.997	25.304	26.524	27.756	28.858	27.553
B.	(¹)								
C.	25.00	25.00	25.667	27.00	27.667	29.000	30.667	31.00	31.00
Acetylene (dollars per 100 ft.):									
A.	1.26	1.30	1.28	1.26	1.20	1.21	1.21	1.249	1.183
B.	(¹)	(¹)	(¹)	2.08	1.93	\$ 2.02	2.12	\$ 2.18	\$ 2.58
C.	\$110.5	\$112.5	\$113.0	\$113.0	\$113.0	\$117.3	\$120.7	\$124.8	\$124.8
Carbon dioxide (dollars per lb.), industrial:									
A.	.0323	.0334	.0354	.0365	.0340	.0318	.0301	.0287	.0307
B.	(¹)	.0450	.0489	.0438	.0463				
C.	.06	.0717	.08	.08	.08	.08	.08	4.08	-----
Oxygen (dollars per 100 ft.), liquefaction:									
A.	.2702	.2704	.2452	.2672	.2361	.2481	.2657	.2337	.2081
B.	(¹)	(¹)	(¹)	(¹)	.558	.526	.578	(¹)	(¹)
C.	\$108.9	\$105.9	\$105.5	\$105.3	\$105.3	\$109.3	\$111.9	\$114.3	\$114.3

KEY: A. Bureau of Census, *Prices for Industry*, yearly average price as calculated from value and quantity data.

B. Yearly average offered contract prices as collected from Federal purchasing organizations.

C. Yearly average wholesale prices or indices as collected by the BLS.

¹ Not available.

² Delivered price.

³ Price index num ber.

⁴ Terminates Aug. 31, 1958.