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## The factors influencing the price of metals on the metal market

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THE FACTORS INFLUENCING THE PRICES OF METALS

ON THE METAL MARKET

BY

THOMAS P. WALSH

—

A

THESIS

submitted to the faculty of the

SCHOOL OF MINES AND METALLURGY OF THE UNIVERSITY OF MISSOURI

in partial fulfillment of the work required for the

Degree of

MASTER OF SCIENCE IN METALLURGY

Rolla, Mo.

1920

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Approved by

Professor of Mining.

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THE FACTORS INFLUENCING THE PRICES OF METALS  
ON THE METAL MARKET

Every year the various engineering and industrial magazines print curves showing the rise and fall of metal stocks throughout the year. To the ordinary reader, these curves are seldom intelligible; he sees the ups and downs; he knows that the prices have risen and fallen; but he rarely knows what causes these changes -- and the curves themselves never tell.

This paper tries to remedy this defect; it draws its curves, and, in the light of historical events, which it recounts, tries to determine the causes for the fluctuations in the market. It further places these factors on the curve sheet, thereby rendering it intelligible to the average reader.

It was decided to limit the paper to three important metals - copper, zinc, and lead - as it was believed that a study of these metals would really be a representative study of all. It was further decided to limit the paper to the period 1904-1914, inasmuch as it was believed that a space of eleven years would be sufficient for this study; also, as 1914 marked the beginning of the World War, it

was thought that this would be the logical place to stop.

The average monthly prices of the metals have been taken from The Iron Age. The write-ups of the various metals for the different years have been taken almost bodily from the annual issues of The Engineering and Mining Journal. Acknowledgement is hereby made to these two journals.

## THE NEW YORK MARKET

1904

Copper

The disturbed condition of the financial markets caused by the outbreak of hostilities between Russia and Japan exerted a depressing influence upon copper. Strikes in three companies in the Lake Superior district, the Baltic, the Champion, and the Trimountain, also tended to keep the market unsteady. September witnessed an improvement in business conditions in the United States, an enormous demand for copper from Europe, and an unexpected demand for the same metal from the Far East, especially from China, which up to this time had been supplied by Japan. This demand for copper from Europe and China assumed very large proportions, and came at a time when the metal was badly needed at home, as the European manufacturers had bought freely when the prices were low while the home consumers had allowed their stocks to become depleted.

Consequently, as the year drew to a close, the price of copper started on its upward course.

### Lead

The consumption of lead was heavy, but the production was under good control by the American Smelting and Refining Company, which exercised its influence to maintain an equilibrium between supply and demand. Prices increased until the low prices ruling abroad brought the importation of foreign lead within the range of possibilities. Then, of course, the prices were forced down.

During the fall, consumers were extremely busy and in the course of a few months the Trust (A.S.&R. Co.) was swamped with orders. An attempt was made to stem this tidal wave by booking orders only at prices prevailing at time of shipment, which fact was taken as a sure indication of an impending advance in prices. Prices did start upward in December.

### Spelter

The production of spelter has about kept pace with the consumption. An upward movement started in February due to a curtailment in production and to a large

demand, especially for galvanizing purposes. This advance continued until it was seen that the iron and steel would not come up to expectations, then the producers became demoralized, and values declined. Caught between a metal market that would not rise and an ore market that could not fall, bed-rock price of 4.5c having been reached, the smelters, competing among themselves to secure the ore requirements of their furnaces, had to see their margin for profit dwindle to nothing. The strength of the European market during midsummer relieved the situation somewhat, a rise in the London price to about the American level enabling the smelters to sell for export a considerable portion of the stocks of metal which they had been carrying since the end of 1903. The market was thus brought into a good position for a sharp rise, when the demand for domestic consumption began to strengthen. Spelter was on the upward path at the end of the year.

## 1905

### Copper

A large amount of copper was produced during the year, but the demand far exceeded the available supply. Naturally prices went up. This was not an artificial



condition; it was natural - consumption was extremely heavy, stocks were exhausted - consequently, fancy prices began to prevail, altho the principal producers tried hard to supply the market at reasonable prices. But soon all the copper in stock or in sight was gone, and the manufacturers found themselves entirely at the mercy of those who still had small supplies.

Abroad, large quantities of copper were used in the Russo-Japanese War for military purposes and will continue to be used to replace the large quantity of ammunition used and to build navies. There was no doubt also a considerable extra consumption on account of the new copper coinage in China. The cessation of the war in the East helped to strengthen market conditions.

The slight set-back in the copper advance for this year was caused by the rumors that Chinese dealers intended to re-sell their copper. These rumors proved to be unfounded, and values continued to climb.

### Lead

The consumption of lead throughout the year was extremely heavy. There was a heavy drain on the light stocks in existence, which exhausted them completely,

with the result that toward the end of the year fancy prices had to be paid by belated manufacturers and consumers, who had not covered their requirements in due time.

Demand has been larger than current production, including available supplies, for some time. Naturally conditions such as these will not continue for any length of time - home production will soon catch up, and prices which are abnormally high will come to a more reasonable level.

#### Spelter

The spelter market is always subject to violent fluctuations. This fact is especially true in the market of this year.

Near the beginning of the year the market slowly gave way, reaching a low mark in July. In June, the low prices attracted a good many buyers, who received further encouragement by quite an improvement in the galvanizing industry. In August, a further impetus was given by the report from Joplin that the ore supply was falling off. In October, considerable sales for export to Europe were made, due to the fact that the

scarcity of spelter in Europe had placed the European prices on a parity with our own. These sales cleared out almost all of the stocks that were held by the smelters. The demand from the brass and the galvanizing trades became more active, and the small stocks were soon absorbed.

1906

Copper

Consumption actually overtook production during this year. For some time production and consumption were about even, but consumption has pushed ahead with great energy, especially in the uses of copper in the electrical industry; and an enormous demand has been stimulated. Practically no stocks of refined copper existed in this country at the beginning of the year; therefore, the slightest change in supply and demand causes a change in prices.

Two important factors, viz., scarcity of labor and insufficient supply of fuel and transportation facilities, have held down production. Although wages were repeatedly raised, there was continually a shortage of miners and smeltermen. There were shortages of oil, coal, and ~~coke~~, with consequent shut-downs.

The railroads were utterly unable to provide the necessary cars for transportation of fuel.

At the end of 1906, no copper stocks remained on hand, and several large producers were sold out for the first six months in 1907.

### Lead

An extremely high average price has been maintained in this market throughout the year. This high level was due not only to the fact that a very large proportion of the output is controlled by one interest but also to the underlying conditions which fully warranted a high market. Consumption overtook production, and not only was a large amount of foreign lead, refined in this country, retained for domestic consumption, but also during the summer several thousand tons were actually imported from Europe. More than the normal expansion has occurred in all lines of manufacturing, especially in the cable business, where an unprecedented tonnage was used. Production was held down due to the non-discovery of large new lead deposits and to the scarcity of labor and other causes which are hampering industrial activity.

1907

Copper

The enormous consumption of copper which marked the year 1906 continued into 1907, and until spring the market was strong and active. The outlook was bright and promising, and manufacturers the world over were anticipating a large business and a continued short supply of metal.

In the spring a severe decline in securities occurred, and sentiment throughout the United States, which had heretofore been very optimistic, became cautious and doubting. This kept buyers out of the market. The feverish activity, which had run for several years, abated, and the business which had been anticipated was not forthcoming. In consequence, manufacturers kept out of the market entirely, and consumption was reduced so suddenly and so sharply that the supplies bought early in the year lasted several months longer than had been expected, and it was not until the fall, after the price of copper had been cut in half, that the market became active. Meanwhile, producers had accumulated enormous stocks, and they decided, owing to the low price, to curtail production. By that time manufacturers everywhere had worked off their stocks and were carrying less copper than a normal supply. The cheapness of the metal was

apparent, and a buying movement set in, which absorbed almost all the stock in the hands of the producers, the market advancing slightly. The mines wisely decided to continue the curtailment of ore; so the market at the end of the year became strong and advancing.

### Lead

The consumption of lead had assumed unprecedented proportions at the opening of the year. Manufacturers had difficulty in supplying the wants of their customers, and business was flourishing in all branches. Then came the convulsions of the money market and the policy of retrenchment. For a time the market continued steady, due to the control of the largest producer. But the panic became more severe later in the year, and a number of firms tried to find a market regardless of price. After this a state of utter demoralization prevailed, and the price declined from day to day. However, even at the very lowest prices, consumers persisted in a "hand-to-mouth" policy. In December, prices ruled the lowest in ten years.

### Spelter

The market opened under favorable conditions; the

smelters were running to full capacity; no stocks existed; and the heavy demand from galvanizing and brass manufacturers forced the market to the highest point. Then came the "panic of 1907" ; prices began to decline, slowly at first, but as the season advanced, the movement accumulated force, and the bottom dropped out of the market.

## 1908

### Copper

The severe financial depression which culminated in the fall of 1907 had a highly disturbing influence on all industries, but especially on those that are the principal users of copper. Money became exceedingly scarce, interest rates in consequence very high, and the uncertainty as to the future did not tend to encourage large commitments on the part of the great financial institutions in this country. All this naturally affected the consumption of copper, and, consequently, an enormous supply soon piled up. Production was curtailed on all sides.

Fortunately, much better conditions existed in Europe, and exports from this side reach record-breaking proportions. These ~~and a~~ gradual improvement in consumption in

this country disposed of a large part of the accumulated stocks and current production by early spring. By this time, money became more plentiful and rates of interest were once more on a normal level, so that home consumers began to show interest in purchases for future delivery, something they had not done for almost a year.

Late in the summer, production was in full swing. In the fall, when it became apparent that a Republican victory at the presidential election was assured, buying of copper became general and requirements up to the end of the year were covered. These purchases and continued large exports to Europe took care of current production.

#### Lead

The year started out with heavy buying on the part of speculators, reinforced by purchases on the part of consumers in anticipation of a better business. Production continued curtailed until the spring months, and this fact helped greatly in the distribution of the large stocks which had accumulated. Under these conditions, the price continued to advance until August, when, owing to the fact that the Western companies had resumed operation and to the further fact that the white-lead manufacturers ceased their purchases on a large scale, rapid decline ensued.



## Spelter

The large accumulations carried over from 1907 exerted an influence which was felt throughout 1908. The purchases of spelter for legitimate requirements had been practically nil for some months. The tendency everywhere was to work up the stock on hand to the lowest point possible, which policy was facilitated by minimum requirements.

Meanwhile the production had adjusted itself to this state of affairs, inasmuch as it is impossible to produce spelter for much under 5c, St. Louis.

The revival in general business in the fall months was reflected in the spelter market through the increased business with the galvanizers and the brass manufacturers. As a result, an advance started in August, which continued slowly but steadily throughout the remaining months of the year. This rise would doubtless have been more rapid if it were not that the remaining surplus is being gradually fed out with the current output.

## 1909

### Copper

Throughout the year, the market was in a very sensi-

tive condition, being always under the influence of the speculative market in London. Late in January the publication of exaggerated estimates of accumulated stock on this side led to the liquidation in the London market of large speculative accounts which had been carried for several months. This caused a break in the market, and prices declined rapidly. Then followed months of speculative buying and selling, of rumors and counter-rumors - but the market managed to hold a more or less steady course.

#### Lead

The general business revival which followed the so-called "Taft boom" extended only a few days into the year, and lead, like all other metals, was affected by the reaction which followed during the latter part of January and lasted until spring. A buying movement started in March, in which all interests participated, and in consequence the price was carried up. From this time on the market displayed a strong undertone, the consumption for all purposes being on a very satisfactory scale. The requirements for lead-covered cables, which had been at a low ebb since the panic of 1907, at last began to make an impression upon the stocks carried over from that period. It was due to their existence and slow distribution that

the improvement in prices did not make headway more quickly. As the year drew to a close, this burden was reduced to a normal point. On the other hand, the demand from all sources improved at a rapid rate, and under the impetus of a large business, prices advanced, and the market held firm and active.

### Spelter

The year started out badly for the spelter market. The iron and steel business did not live up to expectations, and as a consequence the price of spelter declined. The low price reached attracted both consumers and speculators, and soon a steadier tone prevailed. The smelters were reluctant to enter orders at the price prevailing, and this fact combined with the revival of business in general, and in the iron and steel industry in particular, caused prices to harden, and under large transactions the market moved upward by leaps and bounds. Then, in August, came the final passage of a bill requiring a duty of 1c. per pound on zinc concentrates brought into the country.

Everything had, therefore, shaped itself toward laying the foundation for a strong advance in the market, and the forward movement was resumed with great vigor during August. A heavy consumption carried off all the stock

on hand, and prices continued on their upward course.

## 1910

### Copper

Throughout 1910 the market was dominated by the presence of large stocks, which encouraged the manufacturers to work with smaller supplies in their own yards than usual. While during the year at various times they replenished their supplies, when the market showed signs of advance, the year closed with less material in the hands of the manufacturers than they usually carry. This hand-to-mouth policy was discouraging, to say the least; and as improvements in business conditions showed no signs of materializing, the copper market pursued an erratic course throughout the year. Rumors of curtailment of production kept the market more or less steady.

### Lead

The lead market was a quiet affair throughout the year. A large business was in progress without any surface indications whatever. As the American Smelting and Refining Co. was in almost absolute control, the market remained steady and firm.

## Spelter

The year opened with a record production of zinc ore due to the stimulus created by the high prices which had been prevailing during the latter part of 1909. The weight of the heavy production began to make itself felt in the market, and when shortly after the opening of the new year the galvanizing demands fell off, stocks of spelter quickly accumulated at the various zinc works. As the smelters found no difficulty in replacing current spelter contracts by new supplies of ore at profitable margins, a competitive selling movement developed, which brought a sharp decline in a few months.

At the low level, speculators began to take an interest in the market, and successfully checked the decline. Buying from this source stimulated a more active inquiry on the part of consumers and a sharp rally took place. But the fundamental conditions had not changed, and as soon as the immediate buying power had been exhausted, the market began to waver. When the hoped-for spring revival in the galvanizing demand did not materialize, the decline was accelerated by the realization of speculative holdings, until the lowest prices of the year were reached about the beginning of May. At that level, corrective measures were automatically forced upon the industry through a contrac-

tion of the output of ore. By this time a large number of smelters in the gas belt of Kansas had largely to restrict their production, which, due to the failing supply of gas, had been carried on under great difficulties and large expense, justified only as long as the big smelting margin offered a compensation. Smelters became more reluctant in their efforts to effect sales, and the pressure having been taken off the market, a slow but impressive advance raised prices. A large buying movement developed, but the demand was only met to the extent of current output and stocks on hand, as the smelters expected a scarcity of spelter during the winter months. This put them in a vulnerable position when it turned out that the galvanizers, instead of requiring larger quantities, were compelled to reduce their operations, and that the brass industry, which had flourished during the year, was also beginning to feel the effect of the general contraction. Prices dropped off as quickly as they advanced, and the year ended with the market weak.

## 1911

### Copper

The year started very unfavorably for the copper market. Prices slowly sagged down, the market always showing

signs of resistance whenever it sank to the neighborhood of 12c. Producers decided that a curtailment would help the industry best. The low level of the market stimulated consumption throughout the world. Copper replaced other metals for the most varied uses. Stocks of pig copper which had accumulated at the refineries were gradually worked off. Figures of production soon showed a shrinkage. But nothing would disturb the trade in its preconceived views. The market backed and filled for ten months, due largely to a persistent policy of hand-to-mouth buying, prompted by the expectation of a much lower level of prices. Conservatism reigned supreme. Consumers on both sides of the Atlantic had allowed their stocks to run down to a minimum. Buying on a large scale could no longer be put off. Favorable statistics in November and December helped to accelerate the pace, and by the end of the year prices had advanced to 14c., under the influence of an enormous volume of orders.

#### Lead

Conditions in this market have not changed from those of previous years. In view of the fact that the largest producer and seller of this metal tries to maintain the market as steady as possible, no wide fluctuations have

have occurred. Production of the metal has remained on about the same level as during the last year.

### Spelter

Among the commercial metals, spelter continues to be the only one whereof the market is not dominated by one paramount factor. The forces of supply and demand have free sway. Fluctuations, therefore, are apt to be frequent, indexing as it were changes in general sentiment and the vicissitudes of trade at large. The market is still gaged by the prices ruling in St. Louis, where quotations hovered around 5.35 at the beginning of the year. The market showed a slight break in May, but from that time a stronger and firmer trend of prices began. The markets in New York and London have been in the past more or less dependent one on the other, but when London lowered its prices in November, the home market proved its independence by a further advance. The market broke again slightly in December, and the year closed uncertain.

### 1912

### Copper

This year witnessed a great revival in the copper market. This was due primarily to the increase in con-



sumption, both in Europe and the United States.

The low price prevailing during 1906 on, the unwillingness of the largest mines to force production upon an overstocked market, and the slowness with which the new porphyry mines could be brought to the point of large output, all contributed to keep the production from increasing more rapidly. The price of copper advanced during the last three months of 1911, but at that time it looked very doubtful whether this price could be maintained for long, as an increased production from the porphyry mines of several million pounds per month was due to make its appearance in 1912, and the European consumption had been so good for the previous years that a recession was expected. But, as usual, the unexpected happened. In the first place, the increased production did not put in its appearance in the form of refined copper available for delivery to manufacturers until the second half of the year. In the second place, the European consumption maintained itself. And in addition to these two developments, a great revival in the American consumption occurred. What with the small stocks on hand at the beginning of the year, the confluence of these favorable factors made the market buoyant and strong and gave the copper producers a good year after the five

previous bad ones.

### Lead

The record of the lead market for this year is really a record of the competition between the American Smelting and Refining Co. and the independent producers. A formidable competitor for the smelting and refining of lead appeared this year in the International Smelting & Refining Co. The variations in price are easily accounted for - when the demand became large, the A. S. & R. Co. raised the price; when the competition became too keen, the same company lowered the price.

### Spelter

Prices ruled very high on the spelter market during the year 1912. A number of causes contributed to this result, chief of which was a remarkable increase in the consumption of spelter, particularly for galvanizing purposes. The statistics for 1911 showed the stock of spelter carried over into 1912 to be unusually low. Consumers, as a general rule, had been pursuing the policy of supplying their wants ahead to the extent of not more than 30 to 60 days. Smelters thus finding themselves sold up for the nearby months were in the market as sellers for

deliveries for which there was no active inquiry. In consequence, belated buyers for early shipments could only cover their wants at a decided premium. This premium at times assumed considerable proportions, particularly when the spelter available to supply the spot demand could only be furnished by speculators, who were not slow to take advantage of the situation.

The general tendency as between early deliveries and late deliveries, as illustrated in the foregoing, governed the market for the greater part of the year. The position ultimately became so strained, due to the fact that domestic consumption had outrun the production, that prices advanced to a level which made importations of foreign spelter possible, and the arrivals of this spelter during the last quarter of the year tended to ameliorate the tense position of the market.

The volume which the demand assumed near the middle of the year was surprising. New production did not develop as fast as had been expected. The conviction gained ground that the smelting capacity was likely to be diminished by troubles in the gas fields. A realization of this situation made sellers very conservative, particularly in the matter of disposing of their product at a heavy discount for future delivery. The advance in price con-

tinued until the high point was reached in October. It became evident then that the output, altho going on at a very heavy rate, was not adequate to take care of the consumption. Fortunately, however, it was possible to import spelter from Europe, as otherwise the market would have passed entirely beyond control and reason. Due to these imports, the market assumed a more normal aspect, and a gradual decline set in.

## 1913

### Copper

The year opened with copper at a high price, but the market soon crumbled away. This decline is easily understood, for while the statistical position of the metal was excellent, the absence of buyers from the market threw the entire burden of carrying the stock back upon the producers, and this necessarily caused an increase in the visible supply to appear and led to the general belief that the statistical position of the metal was going to move from bad to worse. During February, the market worked into a more normal condition. American and European buyers having depleted their stocks, and being attracted into the market by the comparatively low price which had been established by

that time, bought liberally and deliveries of copper assumed more normal proportions. In April, the clearing of the political horizon in Europe and the accompanying relaxation in the tension in the money market which had prevailed there for some time brought about an improvement in general business conditions, which found a pronounced reflection in the copper market. European consumers bought on a large scale, and for the first time for some months not only covered their immediate requirements but replenished their reserves and placed orders for delivery over the next three months. Early in May, when the political situation abroad became alarming, liquidation in the London Standard market ensued, which, in turn, scared off buyers of refined copper. Then, in the middle of the month, the political skies abroad were again brighter, large orders were placed, and as the American statistics for April showed a very heavy decrease in the visible supply, the price of copper advanced. During May and June a world-wide process of liquidation seemed to be going on and this had a very depressing influence. By July a low mark had been reached. About this time the European buyers took hold and bought largely for August and September, as well as for October, shipment. The producers having at that time few orders

on their books, met the demand freely, but when they found that it continued, they raised their prices. American consumers remained completely apathetic, but when they found that the European consumers were taking the copper freely at a low level, they also came into the market and prices advanced sharply. In view of the small stocks and the strike which had broken out in the Lake Superior, the position of the metal was an exceedingly strong one, and in August a large business was done at higher prices. The strike continued; the visible supplies continued to dwindle; and the prices continued to rise. During October the market relapsed into dullness, after the heavy buying in September, and copper receded. The market remained quiet and weakish until the middle of December, when the prices again crumbled away. But European buyers were forced into the market and there was also a decided improvement in business sentiment in the United States, due to the passing of the Currency Bill; so the market closed active and strong, the last few days having witnessed many large transactions.

## Lead

With the passing of the new tariff law, the in-trenchment which made the American lead market practically independent of that of the rest of the world, was partially broken down, and the reduction in the duty of approximately 70% to 25% ad valorem will mean that the American lead market will be sensitive and influenced by the occurrences in the lead markets of the rest of the world. By reason of the continuous political disturbances in Mexico, a considerable percentage of its lead production has been withheld from the European market, thereby creating a scarcity of lead abroad and forcing prices to a level considerably above the average for the last ten years. This affected the American market, insofar as it prevented the importation of European refined lead into this country even at the reduced rate of the new tariff.

A normal business was done until April, when the buying became so insistent that the largest interest was forced to slightly advance its price. Outside sellers took advantage of this to sell at a somewhat lower schedule, and the A.S.&R. Co. was forced to reduce its price again in May. Competition for business continued keen and prices remained practically unchanged until the end of July.

At that time, the first rumors of a strike in southeastern Missouri became current, and in anticipation of this threatened event sellers became reluctant and the market developed a very strong tone. When the strike was actually declared in August, the market was further advanced. The strike was settled early in September, with the result that outside sellers again became aggressive and readily took business at below the established quotation of the largest interest. The latter reduced its price three times in rapid succession in October.

These continual reductions necessarily made consumers cautious in covering their requirements. Buying was done on a hand-to-mouth scale, and lead was obtainable at considerable concessions from the quoted prices of the largest seller. Three more reductions were made by the Trust and in December lead reached 4c. This level is a dangerously close one, as it approaches the point when it becomes unprofitable for some of the largest mines in this country to produce.

### Spelter

At the opening of 1913, the edge had been taken off the unprecedented advance which the market experienced in



the closing months of 1912. Consumers had bought far beyond their requirements in order to be protected against a sudden falling-off in the output of spelter, which was apprehended on account of the failure of the gas supply of Oklahoma and Kansas. The demand had been so urgent and, as later on developed, far beyond current requirements that large contracts for the importation of spelter were placed in Europe. When it became known that the most important smelters had been able to secure gas from hitherto undeveloped districts which would supply continuous operations for some time to come, a sudden restriction in purchases took place, and as a result a good portion of the foreign spelter was left in the hands of the importers.

Smelters were fairly well sold out for nearby shipment. However, they realized the new factors which had made their appearance in the market, and were, therefore, anxious to dispose of their product as far ahead as possible. The pressure of make sales for future delivery was accentuated by the liberal consignments of zinc ore, the production of which had been unduly stimulated by the high spelter prices, so that the accumulation of ore stocks in the hands of smelters were far beyond normal proportions. In the meantime, consumers were disposed to work up their

stocks, and a situation was thus created by the cumulative causes above outlined which made the position of the market untenable and explains, in a great measure, the perpendicular decline which started with the beginning of 1915. The recession was further accelerated by the disorganization of the business of the galvanizers during the memorable floods which inundated the manufacturing centers in the Middle West states during the spring months; and a further impetus was given the decline by reason of the sudden drop in the London spelter quotations at a time when a reduction in the duty of the metal was under discussion in the Senate.

#### 1914

#### Copper

The important buying movement of the latter part of December having exhausted itself, a recession set in. Europe, however, became interested, and the price was started upward again until it reached its highest point about the middle of February. During the next few months the market remained dull and recessional, altho much copper was sold on a declining scale. Some hopeful tendencies apparent during the last few days of June began to materialize and the price advanced in July, when consumers

became interested and a big buying movement developed. The bulk of an enormous business was done with European buyers, who purchased for shipment over the next three months. With the stimulus of this large buying the price naturally advanced, but the upward movement was not quite so impressive as was heralded on the tickers. This movement continued until the publication of the June statistics showing a large increase in stock cast a chill over things and producers became anxious to sell for whatever they could get, and soon after the middle of the month the market became distinctly weak. During the last ten days of the month the disturbance in Europe produced an immediate effect. The outbreak of the war between Austria and Serbia, bringing with it a financial crisis and a general desire on the part of the European merchants to reduce their commitments to a minimum, practically stopped all buying over there. It also increased the pressure to sell here. In the last two days of the month there was turmoil. During August there was practical paralysis, production was curtailed at the mines and to a less extent at the refineries; but although the output that was in transit and process of refining, which could not be checked, was daily swelling the accumulation of stock, the producers exhibited an unanimity in refraining from trying to sell their copper. Manufacturers were, of course, supplied with what they needed, but they

naturally confined themselves to hand-to-mouth purchases. During September the situation remained unchanged, no effort being made to reestablish a competitive market of buyers and sellers. During the second week of October, there was some hopefulness about the development of a good domestic demand, but this petered out and everything again was shrouded with doubt and pessimism. During the next few months there was doubt and uncertainty due to the seizure by the British of ships carrying copper to neutral copper, but it became apparent near the end of year that the market was going to take the further hampering of export business without flinching, and this was regarded as a very satisfactory test. The market closed unsteady.

#### Lead

The first part of the year in the lead market was more or less normal; the A.S.&R.Co., in fairly good control, raised prices only to have them shaded by the independent sellers, and then reduced them again. Early in July a rather pronounced weakness began to develop in the lead market and it became more clearly recognized that something was radically wrong, viz., the maintenance of a huge production. Had it not been for the large exportation to Europe this would have been noticed much earlier. The Idaho producers were

requested to curtail production, but they were unwilling. During July the tone of the market weakened steadily, owing to the desire of many holders to liquidate their stocks. The war cloud in Europe had no particular effect upon the American lead market, the situation having previously been bad, and when the general war was declared there was no such upset in lead as there was in copper. On the contrary, there was a feeling that the situation might be improved, both by increased demand for export and adverse effect upon production by the decline in silver. In fact, the tone of the market for several weeks was rather stronger, but by September all faith in an advance on account of the war had been lost and some urgent desire to liquidate was exhibited. The fact was that not only the leading producer had a large unsold stock, but nearly all of the independent producers were in a similar position. The leading interest reduced its price several times, until finally something like demoralization appeared in the market. The fact was that a price level had to be found that would move the unsold stock, or curtail production, or both. About the middle of October, production was curtailed in Idaho and Missouri. This drastic curtailment impressed the consumers, who began to buy largely, which justified an advance in prices.

## Spelter

For the first three months the spelter market was dull and uninteresting, it being under the cloud of many thousand of tons of unsold stock both in this country and in Europe. Condition in the United States remained without material change until July, when the market became distinctly weaker. It was realized by everybody that the unsold stocks had increased over the figure of January 1, but few persons supposed that it amounted to any more than 50,000 tons. When, therefore, the official statistics showed the existence of 64,000 tons at the mid-year, the trade experienced a disagreeable surprise. This resulted in pronounced selling pressure, and the market declined. At this time, the spelter industry was steeped in profound pessimism.

It was evident that the price would not go much lower than 5c., and domestic consumers began to make some purchases. Immediately following the outbreak of the war, a large business was done at steadily advancing prices, the governing condition being the anticipation that England would shortly have to buy large quantities of American spelter, owing to the loss of her usual supply from Belgium and Germany. About the middle of August the expected sales for export began, and then followed one of

the most foolishly crazy movements in spelter ever seen. One producer, on August 25, sold spelter for export at 6.10c., St. Louis, but at the same time was willing to let domestic consumers have all they wanted at 5-7/8c. American consumers, however, were at no time active buyers on this wild upward movement. Sales were made in August to England, Russia, Japan, South Africa, and other countries ordinarily unusual in our trade. This foreign demand culminated about the end of August, and then petered out with amazing rapidity. The decline that began was about as rapid as the August rise had been. Prices were at a very low level, when the news came in October that the Butte & Superior, the largest producer of ore, was going to shut down for several months for repairs. Immediately there was a small recovery in the market. A renewal of the demand from abroad has been experienced, but this time the business was done in an orderly and sensible way. This continued demand for export, of course, caused the prices to rise.

### Conclusion

From a study of the curves, it is evident that practically everything that happens affects in some way or other, directly or indirectly, the metal market. Strikes, wars, production, demand - all these have their effect; but the most important of all factors are those that do not exist materially - rumors of war, rumors of strikes, rumors of unfavorable statistics, rumors of poor business, rumors - fictitious things existing only in man's imagination but having a real effect on the market.



TABLES

Lead, at New York, in Cents per Pound

	1904	1905	1906	1907	1908	1909
January	4.39	4.56	5.86	6.30	5.73	4.19
February	4.40	4.50	5.56	6.31	5.75	4.07
March	4.50	4.45	5.35	6.31	5.88	4.02
April	4.50	4.50	5.39	6.16	4.02	4.19
May	4.48	4.50	5.90	6.02	4.26	4.32
June	4.22	4.51	5.94	5.75	4.45	4.36
July	4.17	4.56	5.80	5.24	4.50	4.55
August	4.15	4.64	5.78	5.12	4.59	4.36
September	4.20	4.85	5.92	4.84	4.54	4.39
October	4.20	5.07	5.94	4.64	4.34	4.39
November	4.51	5.48	5.97	4.45	4.39	4.40
December	4.60	5.96	6.19	5.76	4.24	4.56

  

	1910	1911	1912	1913	1914
January	4.70	4.50	4.41	4.35	4.11
February	4.65	4.46	4.00	4.35	4.06
March	4.51	4.41	4.06	4.35	3.97
April	4.40	4.44	4.20	4.40	3.82
May	4.57	4.40	4.20	4.37	3.90
June	4.38	4.46	4.50	4.35	3.90
July	4.40	4.50	4.67	4.37	3.90
August	4.40	4.50	4.54	4.64	3.87
September	4.40	4.49	5.04	4.73	3.86
October	4.40	4.51	5.06	4.52	3.52
November	4.44	4.51	4.66	4.53	3.68
December	4.50	4.45	4.32	4.06	3.80

Lake Copper, at New York, in Cents per Pound

	1904	1905	1906	1907	1908	1909
January	12.62	15.18	18.78	24.41	13.90	14.56
February	12.34	15.25	17.94	25.10	13.13	13.37
March	12.60	15.25	18.50	23.38	12.85	12.90
April	13.19	15.18	18.62	24.62	13.09	12.94
May	13.28	15.00	18.70	24.10	12.88	13.21
June	12.74	15.00	18.69	23.94	13.00	13.50
July	12.62	15.03	18.47	21.95	13.00	13.34
August	12.50	16.07	18.65	18.94	13.71	13.56
September	12.67	16.12	19.31	16.41	13.60	13.50
October	13.09	16.62	21.81	13.80	13.81	13.19
November	14.22	16.90	22.50	13.94	14.44	13.44
December	14.87	18.75	23.06	13.48	14.53	13.80

  

	1910	1911	1912	1913	1914
January	14.00	12.81	14.50	15.98	14.85
February	13.78	12.75	14.41	15.55	15.00
March	13.75	12.58	14.88	15.05	14.79
April	13.31	12.41	16.00	15.67	14.75
May	13.06	12.33	16.30	15.91	14.40
June	12.86	12.71	17.55	15.42	14.12
July	12.66	12.73	17.54	14.73	13.70
August	12.93	12.75	17.73	15.86	12.85
September	12.81	12.65	17.77	16.77	12.66
October	12.84	12.53	17.80	16.85	11.73
November	12.98	12.80	17.70	16.16	12.00
December	13.00	13.84	17.69	14.88	13.55

Spelter, at New York, in Cents per Pound

	1904	1905	1906	1907	1908	1909
January	4.95	6.17	6.48	6.90	4.54	5.15
February	4.95	6.12	6.09	7.00	4.78	4.99
March	5.05	6.06	5.96	6.92	4.76	4.81
April	5.22	5.97	6.05	6.81	4.68	4.94
May	5.14	5.55	5.95	6.51	4.60	5.12
June	4.79	5.32	6.14	6.45	4.56	5.39
July	4.85	5.38	5.98	6.15	4.46	5.35
August	4.85	5.66	6.06	5.71	4.71	5.74
September	5.06	5.83	6.19	5.28	4.76	5.85
October	5.17	6.05	6.18	5.45	4.81	6.09
November	5.49	6.17	6.36	5.10	5.03	6.32
December	5.80	6.50	6.62	4.39	5.17	6.35

  

	1910	1911	1912	1913	1914
January	6.26	5.55	6.52	7.15	5.29
February	5.89	5.56	6.71	6.45	5.40
March	5.72	5.65	6.98	6.26	5.28
April	5.60	5.51	6.86	5.77	5.18
May	5.20	5.50	6.86	5.47	5.06
June	5.19	5.63	6.99	5.18	5.09
July	5.20	5.79	7.26	5.38	5.02
August	5.26	6.04	7.19	5.75	5.60
September	5.53	6.05	7.53	5.82	5.50
October	5.69	6.20	7.57	5.42	4.97
November	5.95	6.60	7.48	5.29	5.12
December	5.80	6.44	7.35	5.18	5.71