

FREIGHT COSTS AND MARKET VALUES.

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FREIGHT COSTS AND MARKET VALUES OF COTTON AND WHEAT.

It is well known that goods whose value is high in proportion to their weight are likely to be charged higher freight rates than goods of relatively low value. It is understood, however, that value is not the only condition affecting freight charges; under some circumstances a higher rate may be charged for a less valuable than for a more valuable commodity between the same points. The influence of value and weight upon the cost of carrying is illustrated in the case of two of the most important farm products of the United States—cotton and wheat. And it is of no little interest to note that this rule of freight traffic applies to the cost incurred by farmers in hauling their products from farms to shipping points.

An investigation was made by the writer, under the authority of the Bureau of Statistics of the Department of Agriculture, in September, 1906, to learn certain facts about hauling farm products on country roads, and from results of this inquiry it is estimated that it costs an average of 16 cents per 100 pounds to haul cotton from farms to shipping points, while the cost for wheat is 9 cents. The average distance of cotton farms from local shipping points is 11.8 miles, the average weight of a wagonload of cotton is 1,702 pounds, and the average cost of hauling the load, \$2.76; the corresponding averages for wheat are 9.4 miles, 3,323 pounds, and \$2.86. It is plain that cotton may be profitably hauled for greater distances and in smaller loads than wheat, since the value of an average load of the cotton picked in 1905 was more than \$170, while a load of wheat was worth about \$40.

CHARGING WHAT THE TRAFFIC WILL BEAR.

The average railway freight rate for cotton from local shipping points to seaports is estimated at 40 cents per 100 pounds, while the corresponding rate for wheat is about 20 cents. This difference in railway charges between these two commodities illustrates the tendency of value to influence transportation costs, and also shows one of the several phases of the principle of railway rate making which is often described as "charging what the traffic will bear."

RELATIVE VALUES AND OCEAN RATES.

On the ocean, also, freight charges for cotton are higher than those for wheat. The rates quoted for regular lines of steamers for carrying cotton from Galveston, New Orleans, and New York to Liverpool averaged during the year ending June 30, 1906, about 32 cents per 100 pounds, while the corresponding rate for wheat was only one-fourth that sum, or 8 cents per 100 pounds. A cargo of cotton shipped from Galveston to Liverpool frequently contains as much as 5,500,000 pounds, and the value in 1905-6 of such a cargo at Galveston was not far from \$600,000, while the same quantity of wheat would have been worth from \$70,000 to \$90,000. The entire cost of carrying this amount of cotton from the farms in the United States to Liverpool, not including costs of transfer and terminal charges, at the average rates estimated in this article, would be about \$50,000, while the corresponding cost for wheat would be \$24,000.

COTTON.

COST OF HAULING FROM FARMS.

The cost of hauling cotton and certain other products from farms to shipping points has been determined with the aid of the county correspondents of the Bureau of Statistics of the Department of Agriculture. In answer to questions sent out by the Department in August, 1906, correspondents in 555 cotton-producing counties returned, in addition to other data, information as to the number of pounds of cotton usually hauled at one load, the time required for the longest haul by any considerable number of farmers, and the usual cost per day for hiring teams.

The cost of hauling a wagonload of cotton from the farm as determined here is the cost of hiring such work done, though it is usual for a farmer to do his own hauling and not to hire such work done. The actual cost to an individual farmer at a given time may vary greatly from the usual cost of hiring a team, wagon, and driver; he may haul his cotton when he has nothing else to do and when his team would be otherwise idle, or he may be compelled to haul at a time and under conditions that may involve no little sacrifice of labor and expense. However, in determining an average value of the service of hauling it may be assumed that in a given community the usual cost per day for hiring a team, wagon, and driver is a fair measure in that community of the average outlay of capital and labor required to perform the service in question.

TWO REGIONS COMPARED.

By this method the cost of hauling cotton from farms in the South Atlantic States was found to be 13 cents per 100 pounds, while the

average for all the cotton regions west of Georgia and the Allegheny Mountains was 17 cents. The difference in cost between the two regions was due chiefly to the difference in the average distances from farms to shipping points, the distance for the South Atlantic States being 9.6 miles and for the South Central States and Territories 12.7 miles.

FREIGHT RATES TO SEAPORTS.

Nearly three-fourths of the cotton arriving at Galveston is carried by railroads at a uniform rate, and comes from stations serving a large part of the area of the State of Texas. The railroad freight rate from Texas "common points" to Galveston was 55 cents per 100 pounds during the year ending June 30, 1906. Of the 188 Texas counties which produced cotton in 1905, 118 were in the region to which the "common points" rate of 55 cents applied. The usual rate for stations in 14 counties was 65 cents, for 7 counties 58 cents, 5 counties 49 cents, 4 counties 66 cents, 4 other counties 54 cents, 2 others 63 cents, while the rates to Galveston from stations in 34 counties, which were situated between the region of the "common points" and Galveston, ranged from 6 to 48 cents per 100 pounds. The average rate from all points in Texas, taking into account the quantity of cotton affected by each rate quoted, was 52.9 cents per 100 pounds. The average cost of shipping cotton from Indian Territory to Galveston during the year just mentioned is estimated roughly at 66 cents per 100 pounds, and the average rate from Oklahoma to Galveston is estimated at 72 cents per 100 pounds.

GALVESTON, NEW ORLEANS, AND SAVANNAH.

Taking into account the relative quantity of cotton produced in the region affected by each rate, the average charge to Galveston from local stations in Texas, Indian Territory, and Oklahoma during the year mentioned was 54 cents per 100 pounds.

Average rates from points of original shipment to New Orleans, Savannah, and New York were estimated by adding the rates given for a large number of representative local shipping points and dividing the sum by the number of items. In this manner the mean rate to New Orleans from 347 stations in Mississippi, Louisiana, and Tennessee was \$1.14 per bale, or about 23 cents per 100 pounds. Cotton sent to Savannah from 738 stations in Georgia, South Carolina, Florida, and eastern Alabama was charged a mean rate of 41 cents per 100 pounds.

ROUTES AND CHARGES TO NEW YORK CITY.

Consignments of cotton to New York City from local stations in the cotton regions may be carried all the way in freight cars or may be sent down to some southern port and there transferred to one of

the lines of coasting vessels for shipment northward. The charges on cotton to New York are from 20 to 25 cents higher than the rates from the same stations to New Orleans and Savannah. The mean rate per 100 pounds to New York from 298 local points in Mississippi, by railroad routes exclusively, was 48 cents, or 25 cents more than the rate to New Orleans as given above, and the mean rate to New York from 402 stations in North and South Carolina, Georgia, and eastern Alabama was 65 cents by all-rail routes and 59 cents by rail-and-water routes. These charges, it will be seen, are from 18 to 24 cents above the rates from practically the same regions to Savannah. The mean freight charge to New York from 700 local points among the cotton fields in Mississippi, North Carolina, South Carolina, Georgia, and eastern Alabama is taken as 54 cents per 100 pounds, the same as the estimated average rate from stations in Texas, Oklahoma, and Indian Territory down to Galveston.

PRICES AT FOUR PORTS.

If the relative quantity of cotton exported from each port be taken into account, the average of the freight rates on cotton to Galveston, New Orleans, Savannah, and New York from local shipping points would be 40 cents per 100 pounds. At the four cities named the mean of the daily closing prices for Upland middling cotton for the year ending June 30, 1906, was 11 cents per pound, which was about the same as the average export value of all cotton for all United States ports during this year. The mean annual price at New Orleans and also at Galveston was 11 cents, at Savannah 10.8, and at New York 11.3 cents per pound. Thus it appears that in 1905-6 the value of cotton at the seaboard was twenty times the cost of transporting that product there from the farms, the freight charges plus the cost of hauling in wagons being 56 cents per 100 pounds.

TWO CLASSES OF OCEAN FREIGHT TRAFFIC.

Ocean freight charges are subject to more frequent changes than are railroad rates. On the ocean competition is practically free, for any man with a ship may compete for business. If the vessels at a certain port have a large amount of available space for cargo and the quantity of goods to be shipped is relatively small, freight rates are apt to be low. Such a condition may easily occur when passenger liners are in port, for their dates of sailing are fixed by a schedule previously arranged, and they must start on time whether their cargoes be large or small. Quotations of freight rates on goods carried by steamship lines are published regularly in the leading ports on the Atlantic and Gulf coasts of the United States. The mean of the quotations for cotton to Liverpool for the first week of each month during the year 1905-6 was 33 cents per 100 pounds from

New Orleans and 17 cents from New York. The rates from Galveston and other leading Gulf ports are regarded as practically the same as those from New Orleans.

Besides the regular lines of vessels, there are a large number of ships engaged in freight traffic which have no regular routes, but make contracts frequently for a single voyage at a time. On account of their wanderings throughout the commercial world these vessels are sometimes called "tramps."

ONE YEAR'S RECORD OF A "TRAMP" STEAMER.

An account of the first year's work of one of these "tramps" appeared in a daily paper in September, 1906. The vessel in question was built in England and on its first voyage carried a cargo of coal from Cardiff, Wales, to Algiers. The next trip was in search of business and the ship went in ballast from Algiers to Port Arthur, Tex., whence a cargo of cotton and cotton seed was taken to Bremen, Germany. Again a voyage in search of freight was made, and at Cardiff a second load of coal was taken aboard; this time the destination was Teneriffe, in the Canary Islands. Then a second voyage was made across the Atlantic without cargo, and this time also business was found at Port Arthur, Tex., where corn was loaded for Sharpness, England. Another voyage in ballast brought the ship to Bremen and the load of kainit received there was taken to Savannah. Leaving Savannah and sailing up the coast, again in ballast, the vessel ended its first year of service as it entered the harbor of Baltimore. Here it was to receive a full cargo of grain for the Baltic Sea. Some ships are not so successful as this one in finding cargoes and occasionally lie idle for months at a time waiting for employment.

AVERAGE OCEAN RATE ON COTTON.

The average ocean rate on cotton from the United States to Liverpool for the year 1905-6 was about 32 cents per 100 pounds, excluding terminal charges, the same as the annual mean of the quoted rates from Savannah to the United Kingdom. It will be noted also that the average railway rate from all local points to all ports, as estimated above, was 40 cents, while the charge from local points to Savannah was 41 cents per 100 pounds. In regard to both land and water rates Savannah occupies a medium position.

VALUES IN ENGLAND.

The sum of the cost per 100 pounds for transporting cotton on country roads, on United States railroads, and across the Atlantic, as estimated above, is 88 cents, and, with an allowance of 2 cents for transfer to ship at some United States ports, the entire cost of carrying may be taken as 90 cents per 100 pounds.

The mean price of cotton in England for the twelve months ending June 30, 1906, was about 12 cents per pound; the annual mean of the cash prices for Upland middling cotton at this market at the close of each business day for the year mentioned was 12.1 cents.

The difference in price between the four leading cotton ports of the United States and Liverpool was 1.1 cents per pound, while the cost of carrying the cotton across the ocean was about one-third of 1 cent per pound, leaving two-thirds of 1 cent for profits and other items, such as insurance, selling commissions, and cartage. The total cost of transportation from United States farms to Liverpool, including cost of transfer to ships at United States ports, was about 7.5 per cent of the value of the cotton in that city.

SUMMARY OF FREIGHT CHARGES ON COTTON.

The total cost of hauling the cotton crop of 1905 from farms to shipping points, at the rate of 16 cents per 100 pounds, as established by the investigation mentioned near the beginning of this article, would be \$8,000,000; and the cost of carrying that portion of the cotton crop which was exported to Europe from farms in the United States, at the rate of 90 cents per 100 pounds, would amount to \$33,000,000, of which the cost of hauling from farms would be \$6,000,000, freight charges to seaboard cities \$15,000,000, and ocean transportation, including transfer to ship, \$12,000,000.

A summary of the transportation costs for cotton mentioned in the preceding paragraphs is given below:

Estimated average costs of carrying cotton in the United States and to the United Kingdom during the year ending June 30, 1906.

From—	Cents per 100 pounds.
Farms in 555 cotton-producing counties, by wagon, to local shipping points..	16
200 local points in Texas, Indian Territory, and Oklahoma, by all-rail routes, to Galveston	54
347 local points in Mississippi, Louisiana, and Tennessee, by all-rail routes, to New Orleans.....	23
738 local points in Georgia, South Carolina, Florida, and eastern Alabama, by all-rail routes, to Savannah.....	41
298 local points in Mississippi, by all-rail routes, to New York	48
402 local points in North Carolina, South Carolina, Georgia, and eastern Alabama—	
By all-rail routes to New York.....	65
By rail-and-water routes to New York.....	59
Local shipping points to seaports, average for United States.....	40
Gulf ports and New York, by regular steamship lines, to Liverpool.....	32
Savannah, by chartered vessels, to the United Kingdom.....	32
United States to United Kingdom, average for all ports.....	32

WHEAT.

FROM FARMS TO LOCAL SHIPPING POINTS.

The average cost of 9 cents per hundredweight for hauling wheat from farms to shipping points, as mentioned at the beginning of this article, was obtained by the use of returns from 1,051 wheat-producing counties. The cost for the North Central States is 8 cents per 100 pounds, but in Kansas, Ohio, Indiana, and Michigan the rate is 6 cents, and farmers in Illinois, Wisconsin, Minnesota, Iowa, and Nebraska do this hauling at an average cost of 7 cents per 100 pounds. In Missouri the mean cost is 9 cents per 100 pounds, in North Dakota 10 cents, and in South Dakota 11 cents per 100 pounds. In the wheat region west of the Rocky Mountains the average cost is 10 cents per 100 pounds, the relatively high rate being largely due to the long distances over which the grain is moved.

The average farm value of wheat, as given by the Department of Agriculture, is the price at the local shipping points, for practically all wheat is sold by farmers at a price which includes delivery at some local market or shipping point. The average farm value of wheat in the United States on December 1, 1905, was 74.8 cents per bushel, and the average cost to the farmers of delivering this wheat at 9 cents per 100 pounds is 5.4 cents per bushel. Hence the actual value on the farm would be 69.4 cents per bushel. As the wheat crop of 1905, excluding seed, was about 622,000,000 bushels, the cost of hauling the crop from farms to places of local delivery may be given as \$34,000,000, while the total value of the crop delivered at these markets and shipping points was \$465,000,000.

RAILWAY CHARGES TO INTERIOR MARKETS.

From the wheat regions east of the Rocky Mountains large quantities of the grain are gathered into such interior cities as Minneapolis, Chicago, and Kansas City. The mean of the railway freight rates on wheat from 562 local stations in Illinois and Nebraska to Chicago in 1905-6 was 16 cents per 100 pounds, the same as the mean rate to Minneapolis from 311 local stations in Minnesota, North Dakota, South Dakota, and Nebraska. In estimating the mean charge to Chicago from all local shipping points, rates from Illinois and Nebraska were taken as typical of low and high rates, respectively. To Kansas City, from 456 stations in Kansas, Missouri, and Oklahoma, the mean rate is found to be about 14 cents per 100 pounds. Making allowances for the relative quantities of wheat received at each of these three primary markets during the year 1905-6, the average rate on wheat from local shipping points to primary markets in 1905-6 was 15.5 cents per 100 pounds, which, added to the average cost of hauling wheat from farms in the North Central States, makes a total cost

of transportation of 24.5 cents per 100 pounds, or 14.7 cents per bushel from farm to primary market.

GRADES AND VALUES OF WHEAT.

No attempt is made here to obtain an average market value for all wheat received at one or more leading markets. In the case of cotton, it was found that the price for the Upland middling grade at the leading United States ports and at Liverpool was approximately the average for the entire crop. But important grades of wheat are too numerous for such a method of obtaining an average value. At one city the principal grade may be "No. 2 red winter," while "No. 1 northern" may predominate in another market. Then the various practices and standards of grading wheat at the different trade centers give rise to still more classes for which price quotations are made.

MINNEAPOLIS AND CHICAGO.

The mean annual price of No. 1 northern wheat at Minneapolis for 1905-6 was 86.3 cents, and the mean freight rate from 311 stations in Minnesota, North Dakota, South Dakota, and Nebraska was 9.6 cents per bushel. The average price of wheat at local shipping points in these four States on December 1, 1905, was 68.6 cents per bushel, so that the cost of this wheat at Minneapolis would be 78.2 cents, plus such items as elevator charges, fees for inspection and weighing, and dealers' profits, making a total cost of probably not more than 80 cents per bushel, or about 6 cents less than the value of No. 1 northern.

At Chicago the mean price of No. 2 red winter wheat for the year named was 86.9 cents, and the average farm price in Nebraska and Illinois for all wheat on December 1, 1905, was 71.8 cents, including cost of hauling from farms, while the mean freight rate to Chicago from local stations in those two States was 9.6 cents per bushel. According to these figures all the marketable grades of Nebraska and Illinois wheat were worth, in the Chicago market, probably about 83 cents per bushel, or 3.9 cents less than No. 2 red winter.

RATES AND PRICES AT KANSAS CITY.

In Kansas, Nebraska, Missouri, and Oklahoma the average value of wheat at local points December 1, 1905, was 70.8 cents, and the mean freight charge from these stations to Kansas City was 8.4 cents per bushel. The cost, then, at Kansas City, would be 79.2 cents, plus minor charges. The mean annual value of No. 2 hard wheat at this market for 1905-6 was 81.1 cents. In this case, the only one of the three mentioned, there is an approximate agreement in the prices used; the farm value and the price at the primary market seem to apply to grades of about the same average quality.

The average of the three prices just mentioned for Chicago, Minneapolis, and Kansas City, allowing for the relative importance of each price in proportion to the quantity of wheat received at each market, is 85.1 cents per bushel, and the average farm value, including cost of hauling, of the crop in the States and Territory named, was 70.8 cents. The average freight rate being 9.3 cents, the average value on December 1, 1905, at the three primary markets for all marketable grades of the wheat of this region, would be probably not more than 82 cents. This would make only 3.1 cents difference between the average value of all wheat and the price of three of the better grades.

RAIL AND WATER ROUTES TO SEABOARD.

From the interior wheat markets to the seaboard there are two general routes, one eastward to Atlantic ports and the other leading south to the Gulf of Mexico. Along the eastward routes the railroads have to share their traffic with the waterways formed by the Great Lakes and the connecting rivers and canals.

The Mississippi River is a potential although not always an active competitor for the traffic from the wheat regions to New Orleans. During 1904 and 1905 practically no wheat was carried by river, from St. Louis to New Orleans.

RATES FROM PRIMARY MARKETS.

The freight charge from Chicago to New York or Boston for wheat intended for export was 15 cents per 100 pounds in 1905-6, by all-rail routes. During the same year boats on the Great Lakes were chartered to carry wheat from Chicago to Buffalo at rates ranging from 1.25 to 3 cents per bushel, and the railway charge from Buffalo to New York was 4.5 cents per bushel on wheat intended for export.

The lake-and-rail rate, then, from Chicago to New York ranged between 5.75 and 7.50 cents per bushel. Shipments by way of the lakes and Erie Canal were sent at still lower rates. During the calendar year 1905 the mean rate by lake and canal to New York from Chicago was 5.53 cents per bushel, by lake and rail the rate was 6.40 cents, and the railroads charged 9.90 cents for carrying the wheat the entire distance. The all-rail rate from Chicago to Baltimore and Norfolk was 3 cents per 100 pounds less than the rate to New York or Boston and 1 cent below the charge to Philadelphia, on exported wheat. The mean all-rail rate on exported wheat from Chicago to the Atlantic seaboard may be taken as about 13 cents per 100 pounds, or 7.8 cents per bushel. On wheat intended for domestic consumption the rate to Boston from Chicago was 4.5 cents per 100 pounds above the export rate, and the mean rate on domestic wheat from Chicago to Boston, New York, Philadelphia, Baltimore, and Norfolk exceeded the mean export rate by 3 cents per 100 pounds, or 1.8 cents per bushel.

DIRECT SHIPMENTS AT LOWER RATES.

The average rate on wheat from local points in the interior to the Atlantic and Gulf coasts is less than the sum of the charge from those points to primary markets plus the charge from these markets to the seaboard. It may be assumed that the cost of shipment to the coast from Kansas City, Omaha, and Minneapolis is not less than the average from local points in the wheat region surrounding those cities and is probably greater than the rates from many important shipping points lying near the seaports. The mean rate from local stations in the wheat region east of the Rocky Mountains to the Atlantic seaboard is taken as 13.4 cents per bushel, which is the mean rate from Kansas City and Omaha to that coast, and the rate to the Gulf as 10.8 cents, the same as from Kansas City to New Orleans and Galveston. The average rate from local shipping points to both coasts, allowing for the relative quantity of wheat exported from each, would be 12.6 cents per bushel.

SHIPS CHEAPER CARRIERS THAN WAGONS.

Ocean rates were higher than usual during the year 1905-6, and the mean charge for carrying wheat by regular steamship lines to Liverpool from New York, a distance of about 3,100 miles, was 3.8 cents per bushel, or 1.6 cents less than it cost a farmer to haul the wheat 9.4 miles from his farm to a neighboring railroad station. Sometimes the rate on wheat from an Atlantic port in the United States to Liverpool is as low as 1.5 cents per bushel, or 3.9 cents less than the average cost of hauling from the farms. The cost of shipment in chartered vessels from Baltimore to ports in the United Kingdom for the year 1905-6 was about 7.8 cents per bushel on an average, a cost much higher than the rate charged by vessels of regular lines, and 2.4 cents more than the cost of wagon transportation. The mean rate by regular lines from New Orleans was about 6.8 cents per bushel and may be taken to represent the Gulf coast as the New York rate is in general typical of the rates from Atlantic ports.

The large number of grain ships chartered at Baltimore during 1905-6 makes it fairly safe to take the cost of charters at that port as an approximate average for the whole coast and not far removed from charter rates from the Gulf to England. The average of the rates on wheat to Liverpool by regular lines from New Orleans and New York and by chartered vessels from Baltimore, not including costs of transfer, may be taken as 4.8 cents per bushel, or 0.6 cent less than the cost of hauling in wagons from farms to shipping points.

PRICES AT LIVERPOOL.

The mean price at Liverpool for "No. 2 red winter" wheat for five months ending June 30, 1906, the season when this grade was most frequently quoted there, was 92.6 cents per bushel, and the cost of

transportation to Liverpool from local points in the Middle West is estimated at 17.4 cents per bushel. Deducting this freight charge from the price just quoted, and allowing 1.5 cents for profits and minor costs, the value of this quality of wheat at local shipping points in Illinois, Minnesota, Missouri, North Dakota, South Dakota, Nebraska, Kansas, and Oklahoma would be 73.7 cents, or only 2.9 cents per bushel above the average value of all wheat at those points.

THE PACIFIC COAST.

The Pacific coast wheat trade has some features distinct from the trade east of the Rocky Mountains. The wheat exported from the Pacific coast to Europe is carried almost entirely in sailing vessels. The rates quoted for chartering sailing ships for these long voyages showed but little variation during the year, the average charge to the United Kingdom from San Francisco, Portland, Tacoma, and Seattle being 16.8 cents per bushel for wheat, not including costs of transfer. Owing to the small exports of wheat from San Francisco in 1905-6, the rates from that port have practically no effect upon the average just mentioned.

The mean of freight charges to Tacoma, Seattle, and Portland from 459 local stations was 10.2 cents per bushel, which, added to the ocean rate, made the total transportation cost from these local points to Liverpool 27 cents per bushel. The mean Liverpool price for the year ending June 30, 1906, being 96 cents for white Walla Walla wheat, the value at shipping points near the farms in the Pacific Northwest would be 69 cents, less minor costs of marketing the grain. These minor costs of marketing may be estimated as between 1 and 2 cents per bushel, thus making the value of this grade of wheat in local markets near the farms 67 or 68 cents per bushel, being but a slight variation from the actual average of all wheat at these shipping points, which on December 1, 1905, was 66.2 cents. The average local value for the year 1905-6 was a few cents less than the price on December 1.

APPARENT DISCREPANCIES EXPLAINED.

However, if the mean railway rate to the coast from local points in Oregon, Washington, and Idaho be subtracted from the mean price of Bluestem wheat at Portland, Oreg., for the year ending June 30, 1906, which was 74.5 cents, the value of this variety at those local points would be 64.3 cents per bushel, from which minor costs of marketing are still to be deducted, and the net value would remain not far from 63 cents. There is an apparent discrepancy here, for the average value of all wheat on December 1, 1905, including grades inferior to Bluestem, was 66.2 cents per bushel, or about 3 cents higher than the value of Bluestem. A greater discrepancy occurs when the mean

price of "northern club" wheat at Tacoma, 71.6 cents per bushel, is reduced to a value at local shipping points by subtracting the freight charge of 10.2 cents per bushel.

These variations are due apparently to relatively high prices on the Pacific coast in November, 1905, the month in which the December farm values were actually obtained, and from this cause the farm price for wheat in Pacific coast States for December 1, 1905, is a few cents higher than the average for the entire year. About the 1st of November, 1905, Bluestem wheat at Portland, Oreg., was quoted at 78 cents, and the Tacoma price for northern club was 74.5 cents per bushel. The average value of these grades at local shipping points, estimated by deducting freight and other cost from the mean of the two prices last quoted, is from 64.1 to 65.1 cents per bushel, or only 1.1 or 2.1 cents less than the average value of all wheat at those points, as obtained for December 1.

The average cost of hauling wheat from farms in Washington, Oregon, and Idaho is 12 cents per 100 pounds, or 7.2 cents per bushel. The average farm price on December 1, 1905, for these three States being 66.2 cents, the net value on farms would be 59 cents per bushel.

EXPORTS AND FARM VALUES.

The apparent increase in the consumption of wheat in the United States in the five years ending June 30, 1906, and the accompanying decrease in exports was attended by a rise in local prices, which, if distributed proportionally in all parts of the country, would almost forbid the exportation of any wheat at all. During the year ending June 30, 1902, the exports of wheat, including flour (in terms of grain), from the United States amounted to 235,000,000 bushels and the average farm value, including cost of hauling, was 62.4 cents per bushel. For the next four years the annual exports and average farm values were, respectively, 203,000,000 bushels and 63 cents per bushel, 121,000,000 bushels and 69.5 cents, 44,000,000 bushels and 92.4 cents, and in 1905-6 the exports were 98,000,000 bushels and the farm value 74.8 cents per bushel. The value of wheat sent to Liverpool in this last-mentioned year and the freight costs along the way, expressed in averages applying to the United States as a whole, were:

Value of wheat and cost of carrying from United States farms to United Kingdom, 1905-6.

	Cents per bushel.
Value on farms in United States before hauling.....	69.4
Cost of hauling to local shipping points.....	5.4
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Average farm value, including cost of hauling.....	74.8
Railway freight charges from local points to seaports.....	11.6
Ocean freight charges to United Kingdom.....	9.6
Minor costs of sale and shipment.....	1.5
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Value at port in United Kingdom.....	97.5

MAXIMUM FARM VALUE OF EXPORT WHEAT.

The value in the United Kingdom as estimated upon a basis of a farm value in the United States of 74.8 cents per bushel (including cost of hauling) is a few cents higher than the actual prices of United States wheat at Liverpool. The average import value of all wheat brought into the United Kingdom from the United States during the year 1905-6 was 95.9 cents, and the mean price at Liverpool during that period for No. 2 red winter and Walla Walla white grades was 94.3 cents per bushel.

COST OF EXPORTING KANSAS WHEAT.

For wheat shipped from Kansas for export the values and freight rates were as follows for the year ending June 30, 1906:

Value of wheat and cost of carrying from Kansas farms to Liverpool, 1905-6.

	Cents per bushel.
Value on farms before hauling	67.4
Cost of hauling to local shipping points.....	3.6
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Farm value, including cost of hauling.....	71.0
Railway freight charges to Gulf ports.....	10.8
Ocean freight, Gulf ports to Liverpool.....	6.8
Minor costs of sale and shipment.....	1.5
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Value at Liverpool.....	90.1

The corresponding value of wheat shipped from Minnesota to Liverpool by way of New York would be 89.7 cents per bushel. None of these estimates of value in Liverpool include selling costs and dealers' profits in England, which of course are included in the prices quoted above for specific grades. The mean price in Liverpool for No. 2 red winter grade being 92.6 for the season 1905-6, the value just estimated for Kansas wheat allows a margin of 2.5 cents for minor charges in the United Kingdom and for differences between the average price of all Kansas wheat and the price of the No. 2 red winter grade.

SUMMARY FOR WHEAT.

For the sake of convenience the principal transportation costs and market values mentioned in the foregoing discussion of wheat are collected in this statement:

Wheat—principal values and freight charges mentioned in this article.

VALUES.

	Cents per bushel.
Average value on farms in the United States before hauling, December 1, 1905 ...	69.4
Average farm value, including cost of hauling, December 1, 1905.....	74.8

	Cents per bushel.
Average price in Chicago, Minneapolis, and Kansas City, year ending June 30, 1906, for certain grades ^a	85.1
Price of Bluestem, Portland, Ore., November 2, 1905	78
Price of northern club, Tacoma, Wash., November 1, 1905.....	74.5
Average farm value, including cost of hauling, Oregon, Washington, and Idaho, December 1, 1905.....	66.2
Mean price No. 2 red winter, Liverpool, five months ending January, 1906.....	92.6
Mean price Walla Walla white, Liverpool, for year 1905-6	96
Mean price of Bluestem, Liverpool, 1905-6	97

FREIGHT COSTS FOR YEAR ENDING JUNE 30, 1906.

Hauling from farm to local shipping points.....	5.4
Average rate from 1,329 local shipping points in Illinois, Minnesota, North Dakota, South Dakota, Nebraska, Kansas, Missouri, and Oklahoma to Chicago, Minneapolis, and Kansas City	9.3
Mean rate on export wheat, Chicago to Atlantic ports	7.8
Mean rate on export wheat, Missouri River to Atlantic ports.....	13.4
Average rate on export wheat, Kansas City, Omaha, St. Paul, and Minneapolis to New Orleans and Galveston.....	11.4
Average rate from all local shipping ports in above-named States to Atlantic and Gulf ports.....	12.6
Average rate from 459 local shipping points in Oregon, Washington, and Idaho to Portland, Tacoma, and Seattle.....	10.2
Average rate from all local shipping points to all ports in the United States.....	11.6
Average ocean freight rate, Atlantic and Gulf ports to the United Kingdom....	4.8
Average ocean freight rate, Pacific ports to the United Kingdom.....	16.8
Average ocean freight rate, all United States ports to the United Kingdom.....	9.6

OCEAN FREIGHT RATES AND BRITISH IMPORTS.

In the United Kingdom, where a large part of the wheat consumed is imported, the cost of ocean transportation is an important matter. During the calendar year 1905 the wheat, not including flour, imported into that country amounted to 182,000,000 bushels and the average cost of ocean freight was about 9 cents per bushel, thus making the total cost of carrying it on sea more than \$16,000,000. The average of 9 cents per bushel was estimated from the mean annual freight rates from eight leading regions of supply to the United Kingdom. The rates quoted for all the countries except the United States and Canada were taken from the London Times and the Review of the River Plate (of Buenos Aires), while the other rates were found in commercial papers and in circulars issued by freight brokers at various ports. The mean annual rates on wheat from each of these regions to the United Kingdom for 1905 are given on the next page.

^a No. 2 red winter at Chicago, No. 1 northern at Minneapolis, and No. 2 hard at Kansas City.

Mean annual freight rates on wheat to the United Kingdom.

From—	Cents per bushel.
Canada ^a	4
United States, Atlantic and Gulf ports ^b	5
Russia, Black Sea ports.....	7
Roumania.....	7
British India.....	9
Argentina.....	11
Australia ^c	14
United States, Pacific ports ^b	17
Average ^d	9

REMOTE SOURCES OF ENGLAND'S WHEAT SUPPLY.

The effect of applying to wheat the same rates as are charged some other articles in ocean traffic would be alarming to the British people and to all other nations which receive an important part of their wheat supply from over the sea; and the readjustment of prices brought about by such changes in transportation costs might have serious results for the agricultural interests in many countries of supply. The bread of England is made from wheat carried over vast distances and at rates lower than would have been dreamed of a few generations ago. To Liverpool from the Atlantic coast of the United States and also from the Black Sea the grain makes a journey of 3,000 miles, while twice that distance is traversed from the River Plate and from Bombay; large supplies are carried 10,000 miles from Australia; and 3,000,000 bushels in 1905 were taken by sailing vessels from Puget Sound, down the west coast of America and around Cape Horn, a voyage of 15,000 miles, or more than one-half of the distance around the globe. From these distant ports, from 3,000 to 15,000 miles away, the average charge for carrying wheat to England for the year 1905, as mentioned in a preceding paragraph, was 9 cents per bushel, or only one and two-thirds times the cost of hauling over 9 miles of country roads in the United States.

If the average cost of carrying cotton the 3,000 or 4,000 miles from United States Atlantic and Guif coasts to the United Kingdom were applied to transportation of wheat over the routes mentioned above, ranging in length from 3,000 to 15,000 miles, the rate per bushel would be 19 cents instead of 9, and the margin between prices in England and in countries of supply would average 10 cents per bushel more than in 1905.

^a Rate from Boston used here.

^b For year ending June 30, 1906.

^c Mean rate of eight quotations.

^d Weighted in proportion to imports from each region named.

FUTURE CHANGES IN FREIGHT COSTS.

Judging from the changes during the past few generations, it is natural to expect that costs of freight on land and water may be lower in the future than at present. Improved methods of loading and unloading freight, economies in the disposition of cars and vessels so as to avoid more than at present the hauling of empty cars and the making of voyages in ballast, and an increase in the quantity of valuable freight paying high rates per unit of weight would all tend to lower the cost of transporting farm products.

In hauling products from farms in wagons there are opportunities for a saving in cost. In many regions in the United States the improvement of a road, or a short rough section of a road, would allow much larger loads to be hauled than at present. If it were possible to increase the average weight of a wagonload of cotton in the United States from 3 bales, as it now is, to 4 bales, without increasing the cost of hauling the load, the saving on a crop equal to the one picked in 1905 would amount to \$2,000,000; and if the average load of wheat, now 55 bushels, were increased by 20 bushels, the saving effected in hauling a crop like that of 1905 would be more than \$8,000,000.