

# THE DOMESTIC AND FOREIGN WOOL MANUFACTURES AND THE TARIFF PROBLEM

## SUMMARY

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THE prospective revision of the tariff into a “permanent” form may serve as the occasion for a reconsideration of the competitive position of the American wool-manufacturing industry, the industry whose tariff schedule has in the past been of outstanding importance in any general change of import duties. Beyond the importance arising from the intrinsic place of this industry in our economic life, a certain significance attaches to these tariff paragraphs by reason of the impression which has in recent decades been quite widely accepted, that Schedule K formed “the backbone of protection.” It suffices to point in this connection to the part played in subsequent political discussions by the wool paragraphs incorporated into the Payne-Aldrich Act.

Without prognostication of the probable future tariff rates, we may profitably examine the experience of the American and foreign wool-manufacturing industries during the last decade or so, noting particularly those

changes in their economic position which add to or detract from the competitive strength of the domestic trade, and deriving therefrom the situation in which the anticipated tariff revision finds the American industry. In considering these questions, it will be convenient to survey the foreign manufactures first.

## I

Interest centers strongly upon the Continental industries at the present time, perhaps in part from the fact that actual knowledge of industrial conditions in those countries is relatively scant and that conditions there are more unstable than in Great Britain or the United States. Take, for example, the matter of raw material supplies for the Continent. We know that supplies of wool in France, Belgium, and Germany were peculiarly low at the time of the armistice, and that replenishment has gone on haltingly since that time, complicated by the lack of purchasing power on the part of Continental merchants and manufacturers, lack of credit facilities, the uncertainties of exchange, and in the case of Germany and Austria the question of pre-war debts. Belgium, then France, and more recently Germany, have been able to buy in the English or colonial wool markets — or to some extent at the wool sales at Antwerp specially arranged for by the British government and the London wool brokers — but purchases must, on account of exchange fluctuations, be intermittent. Germany this month may be able to buy largely — even dominate a quiescent London market — but next month may be forced by falling exchange rates to withdraw almost completely. Just how adequately stocked the Continental mills may be we can only guess.

Nevertheless, progress on all lines has undoubtedly been made. Peace found working forces largely scat-

tered or disorganized, machinery destroyed or perforce allowed to deteriorate, and commercial connections broken. The French wool manufacture suffered most. The enemy controlled the great wool center of Roubaix-Tourcoing, and small centers such as Fourmies and Le Cateau; and the second largest wool-manufacturing city was the much devastated Rheims. Recovery has been retarded, moreover, by serious labor difficulties, especially around Roubaix. In Belgium, the losses of the industry were due in part to the dislocation of its working force, and in part to the removal and wearing-out of technical equipment; but on the whole the Belgian manufacture survived as well as any in the belligerent countries of the Continent. From what one can learn of it, the German industry falls between these two extremes. The Belgian manufacture in any case would probably have revived first; but the German would presumably have outstripped the French in recovery, had it not been for general factors operating in Germany, such as the uncertainties of the peace terms, internal unrest, and particularly disadvantageous exchange relations. Speaking generally, conditions on the Continent as a whole have so far changed that whereas in the summer and fall of 1919 Continental manufacturers were glad to secure work on commission from English houses, more recently French and Belgian yarns and cloths have invaded the English and other foreign markets and, as above intimated, the Germans have been able to purchase raw material quite extensively in the world markets and begin work "on their own."

Apparently as an indirect result of the war, the Continental manufacturers have secured, at least temporarily, a position of greater competitive strength than they possessed in the pre-war period, despite such adverse factors as (probably) lowered efficiency. It will

perhaps be recalled that the Tariff Board ten years ago found the conversion costs in e. g., the German industry (where among Continental countries inquiry seems to have been most adequate) were somewhat less favorable, as compared with those of American producers, than those of English manufacturers.<sup>1</sup> It is also true that the free-trade English market was relatively free from Continental importations, and that the bulk of such importations that did reach England was in character different from the chief British productions: imports of French-system or Belgian-system yarns, cloths of the soft, Continental type, and the like.

Data on the current situation are of course relatively scarce, but certain facts are available. Rates for commission scouring, carbonizing, and combing are always suggestive tho indicating probably the extreme in comparative costs throughout the whole industry. In this connection, a recent German combing schedule may be instanced. The charges therein ran from approximately  $5\frac{3}{4}$  cents per pound for low crossbred wool to  $6\frac{2}{3}$  cents for merino to half-blood.<sup>2</sup> Such rates appear as 40 to 60 per cent of the current Bradford charges, and the latter in turn are 50 to 70 per cent of representative American rates. As the *Wool Record* states in comment upon the German charges, "There is no doubt that when trade does begin to revive, competition in all the markets of the world will be exceptionally keen." Already the British industry is feeling the competition of Continental producers along certain lines, as in the supply of knitting yarns to the Leicester knit-goods trade. During the war period, the British spinners had a practical monopoly of this business, but now the soft, French-system worsted yarns and the Belgian-system woolen

1. Tariff Board Report on Wool and Wool Manufactures, pp. 16, 17.

2. *Wool Record and Textile World* (Bradford, Eng.), March 10, 1921, p. 15. The German charges were converted at the then existing rate of exchange.

yarns from the Continent are making severe inroads into it and pushing out British yarns of both the French and the Bradford worsted systems.<sup>3</sup> Repeatedly in the British discussions of their own present situation appear forebodings of severe trials from the future increased Continental importations.

The causes of such an alteration in competitive strength are difficult to ascertain. As far as I know, they arise from no conditions peculiar to the wool manufacture, but wholly from the general economic forces. Such factors as a lowered standard of living among Continental peoples, an incitement to more continuous labor flowing from the worsened position of the workers, and the eagerness of manufacturers to secure employment for their men and their machines undoubtedly play their part. Whether such a situation is to be the post-war normal is of course problematical. All we can now say is that conditions in the wool manufacture will presumably follow the general economic and industrial movement.

With respect to the changes in the British industry itself and in its competitive position, it will suffice for our purposes to consider three general phases: the technological aspect, certain overhead charges, and the labor side. Changes in the technique of the British industry in the last decade, tho not revolutionary, have shown in some aspects distinct advance. For example, largely as an indirect result of the war, the scope of raw materials employed generally through the British industry has been broadened. In pre-war times wools containing so much vegetable matter as to require chemical treatment, or so-called "carbonizing wools,"

3. A recent comment from England reads: "Both France and Germany can sell much below British prices in Botany (the finer) yarns, and this is especially noticeable in fine singles and two-folds. In 2-66s and 2-70s the disparity is said to be as much as 1 s. per pound (around 15 per cent), and this is entirely due to the lower conversion costs on the Continent." *Wool Record and Textile World*, September 1, 1921, p. 559.

were usually disposed of on the Continent. British woolen manufacturers would not bother with this inferior tho cheap stock. During the war, however, the British were compelled to use more and more of this type of wool, carbonizing capacity was materially increased, and today the British woolen trade can work and does work this relatively inexpensive staple. It has been stated, moreover, that the better lengths of such wool have been utilized in blends for the manufacture of tops.<sup>4</sup> Again, before 1914, South African and South American wools were largely neglected by the British wool manufacture, chiefly by force of habit or prejudice. War exigencies compelled British combers and spinners to become acquainted with these staples. They will accordingly be able not only to secure somewhat varying effects by the utilization of these wools, but also to take advantage of variations in price of these goods from that of their better known Australasian wools.

On the American side, changes of the above types have not been numerous, nor in some cases do they promise to be permanent. Take, for example, the situation with respect to Cape wools. Before the war, under the Republican tariffs, trade in these fleeces was negligible. Because of the fine character of these wools and of the sandy country in which they are grown, they have a peculiarly high shrinkage, and consequently could not be advantageously imported. During the war, with free importation of wool, South African staples became a fairly common article in our markets.<sup>5</sup> Whether or not this trade can be continued, depends on the character of the wool duties enacted in the new tariff. A

4. Such a development is disputed in the trade, but because of prejudice against the use of carbonized wools at all in the worsted industry it is difficult to ascertain the exact truth.

5. This movement was aided by the fact that the Australasian wools were taken over by the British government.

somewhat similar story with a somewhat similar ending might be woven around certain South American wools, such as the fine Uruguayan wools, or the low crossbreds which in the last year or two have found employment in our carpet trade.<sup>6</sup>

In the matter of technical equipment, two significant changes during the last decade have been the spread of the automatic doffer and the Northrop automatic loom. The former, a labor-saving device of a typically American sort, has been developed, oddly enough, exclusively in England. So far as I know, it has found absolutely no favor in our industry. By means of the automatic doffing "motions" (which in some cases may be attached to old frames and in others are the normal attachment of new spinning machines), the full bobbins upon one whole side of a spinning frame of either the cap or flyer types may be removed or "doffed," as the phrase goes, at one and the same time, and empty bobbins placed on the spindles.<sup>7</sup> The device eliminates the necessity of handling each bobbin separately, work which in the English mills has been one of the last important employments of "half-times." Yet the increased adoption by progressive British mills of this contrivance, altho fitting in well with the impending abolition of "half-timers," is not wholly the product of that new situation, since developments along this line date back to the eighties and adoption there has been going on gradually ever since that time. The installation of such "motions" has been considerably quickened in the last decade or so. American mill men, it is said,

6. Probably a more interesting change in the American raw material supply during the last decade has been the decline in the fine wool production within the United States, and the consequently greater dependence upon foreign, especially Australian products. But this involves a change in quantity, not of kind, and so has little influence on the matter now under consideration.

7. There are at least six different "motions" on the British market for spinning frames, and one has recently been devised for roving frames.

find it more advantageous to add something to the pay of the spinner who then takes care of the doffing. Can it be that the American wool-manufacturing industry, by virtue of its supply of immigrant labor, has reached the stage when it has no incentive to put in labor-saving improvements?

The automatic loom which has found favor in the British weaving sheds is of the Northrop type. "Northrop" and "automatic" are synonymous in the present British wool-manufacturing nomenclature. As yet the automatic loom of the box type which has been developed by the Crompton & Knowles Loom Works of Worcester (Mass.) has not been introduced in England, despite the fact that the ordinary box loom of the Crompton & Knowles type, made by the Dobcross people in England, one time licensees of the American firm, is the box loom most widely used in the woolen and fancy worsted districts of Great Britain.<sup>8</sup> On the whole, the automatic loom seems to have made less headway in England than in the United States. The character of a considerable portion of the British production — fine goods or goods of special design and limited quantity — does not fit well with the economy of this machine. At present geographically as well as industrially the scope of the loom is limited. For example, none are to be found in the Bradford district, even the Northrop loom not having been as yet adapted to the particular requirements of that manufacture. Outside the Huddersfield

8. One reason which is advanced for the readier adoption of the Northrop machine in the British worsted manufacture is that the greater homogeneity of worsted yarns in that country permits the use of a plain or single-shuttle loom. For many if not most mills in this country, it is necessary in weaving even single-color goods to employ at least two shuttles — requiring of course a box loom — both containing yarn that is theoretically identical in character. As the weaving proceeds, the shuttles are used alternately, or, in the jargon of the industry, the "fillings are mixed." Were such precautions not employed, the finished cloth would show a streak where a change occurred in the yarn delivered by the single shuttle (as one bobbin ran out of yarn and another was inserted), merely by reason of the yarn's lack of homogeneity.

plain goods and the flannel areas, few automatic machines are employed. On the other hand, the automatic loom has found considerable favor in the American industry. One plant working lustre wools, mohair, and alpaca has a virtually complete weaving equipment of these machines. Other mills have adopted it for portions of their work, even in lines where as yet it has not been tried abroad.<sup>9</sup> Accordingly, there is, I believe, a good prospect that in the wool manufacture, as in the cotton trade, the United States will lead the way in the wider utilization of this type of machine.

Another development of recent years, suggestive rather than of immediate competitive value, is the continuous woolen spinning frame. This mechanism, originally introduced in the spinning of cotton waste, holds out the possibility of eliminating the waste of time and the expense of skilled supervision involved in the operation of the woolen mule with its intermittent spinning action and its complicated system of movements. Essentially it is a modified ring frame. Altho spindles on such frames form an almost negligible proportion of total woolen spindles in the United Kingdom (little over 1 per cent), they have been found by some manufacturers to be of considerable utility for certain purposes, especially spinning substantial weights of good stock.<sup>10</sup> Such machines have not found welcome in this country, nor as far as I know, has there been a serious attempt to improve on the English mechanism.

Some progress, again, has been made in the British industry during the last decade in the elimination of hand labor in the processes intermediate between spin-

9. For instance, I have seen notice in an American textile magazine of a blanket mill to be completely equipped with automatic looms, a project which as yet would not be considered in England.

10. One Yorkshire manufacturer, usually inclined to break with the old British habit of secretiveness, thought so highly of it that the communicative on other matters he refused to discuss this machine or to let visitors into his spinning shed.

ning and weaving. Two such processes rarely seen in American mills but still occasionally found in British plants are warping and hand-dressing. In the former process, the yarn is wound from the bobbins on to big, slow-running "warping mills" for the purpose of making up sections of the warp. Subsequently these sections are wound upon the loom beam. Dressing by hand is utilized at the time of this transference of warp to the loom beam in order that the various yarns of the warp should be properly and evenly arranged. By the improvement of beaming machinery and the greater development of motor transport (facilitating mill-to-mill transfers of the heavy and bulky loom-beams) the necessity of dividing the operation and of skilled manual intervention has been eliminated for most work. Warping and dressing are considered moribund trades in England. They persist only in certain localities and certain mills, especially in the dress-goods trade of the Bradford district.<sup>11</sup>

A further point of importance in connection with the technological aspect of the British wool manufacture is the marked increase within that industry of interest in scientific research, a curious instance of the influence of the chief loser in the World War upon one of the victors. A British Research Association for the Woolen and Worsted Industries has been formed among the manufacturers. Subscriptions of considerable amount have been raised, which together with a subsidy from the government's Department of Scientific and Industrial Research have enabled the purchase and equipment of a laboratory and the inauguration under experts of inquiries into various fields of wool-textile technique, such as woolen spinning and cloth finishing, of which little of

11. This change in British practice is significant despite the fact that it is really an adoption of earlier American practice.

a scientific character is known.<sup>12</sup> The discoveries made and the data developed in the course of these inquiries are published for the use of the Association members only, of which there are now over 450. The hope of the Association is, of course, to give "members the start by secret information" altho the data may in a year or two leak out to other manufacturers in England and particularly to those in competitive nations.<sup>13</sup>

But the course of the British industry has not been wholly forward, even in the technological aspect alone. One of the disadvantages, from a British point of view, arising indirectly from the war conditions is a decline in British standards of acceptable workmanship, as for example in finished cloths — a situation recognized by the British themselves. The increase in the number of burlers and menders in the mills themselves is instanced as an indication of the less efficient production of the goods, while in the merchandising trade it is stated that cloths have during and since the war passed as A-1 which prior to 1914 would have been shipped back to the manufacturer as unsatisfactory. This phenomenon may be merely the result of the war strain among the workers, as far as the manufacturing faults are concerned, or of the keenness of demand for all sorts of woolen goods which until the recent depression prevailed throughout England and condoned both carelessness of the workers and defects in the fabrics. The present period of depression may be corrective in both fields.

Passing to overhead charges, we may note that certain important items of general mill expense have increased

12. It is remarkable how little has been done in the way of scientific investigation in this industry, one of the oldest of man's activities. For example, men have been fulling cloth for hundreds of years, and yet the question is not fully decided why woolen cloths do full.

13. Wool Record and Textile World, April 28, 1921, p. 41.

not only more than the average enhancements of cost, but more than similar expenses in this country — among them, coal, dyestuffs, and taxes. Cheap coal has, of course, been for decades a supposedly firm foundation for British manufacture. It would be indulging too much in prophecy to state that coal in England will never be cheap again. But for the present the fuel item has become a much more considerable portion of the factory expense than ever before, and there is no immediate prospect of a change from this situation. Yorkshire and Scotland, to be sure, possess splendid possibilities in the development of hydro-electric power, but as yet little has been done for the wool manufacture in this regard. Wool dyes, too, have presented a somewhat serious problem to the British dyers. The manufacture of dyestuffs in England, as in the United States, seems destined to need governmental assistance for some years. In consequence, at least temporarily, the cost of dyestuffs is enhanced somewhat more than other costs have been increased in the last few years. The American dye industry, as it happens, before the war had produced a few of the standard wool dyes, and during the war period found wool dyes easier to develop. The wool manufacture has consequently been less disadvantageously affected than some other textile trades. Finally, the substantial increase in taxes, with the possibility of a higher range of prices for some articles through the duties on imports involved in the “safeguarding” of British industries,<sup>14</sup> or in imperial preference, should be mentioned, together with the charges upon the industry for health insurance and the like. By the degree to which the British manufacture is more unfavorably affected by such factors as these than

14. The British wool-manufacturing interest is apparently opposed to this policy; see a manifesto signed by many influential Yorkshire producers in the *Wool Record*, July 14, 1921, p. 106.

is the American industry, so is the competitive position of the American improved.<sup>15</sup>

Let us turn to the labor, the third of our subdivisions. Perhaps no phase of the British wool manufacture, with the possible exception of the industrial organization, has in the past contrasted more sharply with the American industry than that of the labor supply and organization, and in some respects this contrast has been heightened by the events of the last four or five years. Despite the demands for military forces during the war, the wool manufacture in the greater portion of its field was able, by reason of the military need for clothing as well as for men, to keep its working forces fairly well together. Some "dilution" with female labor did of course take place, and probably in part will be retained; but at least a fair proportion of these workers were partially trained operatives, for instance, women who had before marriage worked in the mills and who now with the increased cost of living or with the absence or death of their husbands were impelled to reënter the industrial field. It appears, too, that at demobilization the wool workers, perhaps by reason of the strong British characteristic of habit, returned in large numbers to their pre-war employment. In short, the skill of the British workers, which plays a considerable part in the manufacture of somewhat better goods at somewhat less cost, has probably not been seriously impaired by the war's upheaval. The temporary slackness of quality in work spoken of above will probably pass away, and something of the old conditions revive.

In this connection it may be pointed out that com-

15. Accurate statistics of these changes are very difficult or practically impossible to secure. Estimates for England were given by a British manufacturer recently. He found the ratios of the existing prices to pre-war prices for the several groups of goods and services mentioned above as: coal, 300-400 per cent; machinery, 300-500 per cent; insurance on stocks, 300-600 per cent; dye wares, 700 per cent; and various groups of wages at 320-350 per cent. *Wool Record and Textile World*, February 3, 1921.

paratively and absolutely the American labor forces have probably improved in character in recent years. At least, were another investigation to be made such as that of the Tariff Board into the turnover in the American mills, it is unlikely that such extraordinary frequency of movement into and out of the wool manufacture and from one mill to another within the industry would be discovered.<sup>16</sup> This change I attribute to the temporary diminution of the immigrant flood and to the relatively prompt and high advances in wages which have been made by the wool manufacture as compared with other industrial lines.<sup>17</sup> Of the permanence of this improvement, however, one may be doubtful.

The British wool industry has a further advantage from the point of view of labor, that of organization or perhaps we may call it orderliness. The formation of manufacturers' associations on the one side and of labor unions and labor union amalgamations on the other proceeded fairly rapidly during the war period and the year or so afterwards. The industry was accordingly well equipped for the adoption of that method of settling industrial troubles which involves the so-called Whitley Councils. Such an institution was organized in the early part of 1919, and by virtue of the dominance of one or two exceptional leaders on either side, perhaps also by reason of a rather conservative temper among the British wool workers, the Council has had on the whole very good success. Indicative of its effectiveness, in addition to the avoidance of all strikes and lockouts in the past unsettled two years, is the smooth working of its arrangements as to wages. War bonuses which had been given during the war years in terms of percentage of the pre-war wage rates were converted in 1919 into cost-of-

16. Tariff Board's Report on Schedule K, pp. 958-981.

17. Cf. below; also Reports of National Industrial Conference Board on Wage Changes in Industry.

living bonuses and tied directly to the index of the cost of living prepared by the Ministry of Labor. The test came, of course, when the peak of prices was reached and recession began. Suffice it to state that altho the cost-of-living percentage for time workers reached the point of 175 per cent above the 1914 base, it subsequently declined to 133 per cent without stoppage of work. Moreover, when the wage agreement came up in July, 1921, for readjustment, the workers accepted a cost-of-living bonus actually less than they would be entitled to if the direct correlation of cost-of-living index and bonus were adhered to.<sup>18</sup>

Above all, in this relation, I would emphasize the organization or orderliness of the business. The Industrial Council, representing well marshaled forces on both sides, settles through itself or through the regional councils the wage problems for the whole British wool-manufacturing industry, provides arbitration of industrial disputes in a semi-judicial method, and supplies a common meeting ground for the representatives of both capital and labor which under wise guidance by a clear-headed few seems to have been made the opportunity for the attainment of mutual understanding.<sup>19</sup> Contrast to this the condition in the American industry, with the lack of any adequate association on either side, with no

<sup>18</sup> This program, the adoption of which was probably furthered by the industrial depression in the British manufacture, was naturally that of the employers, the purpose being to give them a firmer basis for forward quotations than if the original scheme were followed strictly. Altho the cost-of-living index was (August 1, 1921) at 230, the workers are to receive a bonus of only 105 per cent above base rates (time workers). If the index falls below 205, the bonus drops by stages of 10 points.

<sup>19</sup> The nicety, or absurdity, to which wage agreements in the industry are carried is observable in the figures for cost-of-living bonuses of Saddleworth time workers — one example from many:

Males 13-16 years of age.....	67.351778
“ 16-19 “ “ “ .....	78.498024
“ 19-21 “ “ “ .....	89.486166

On the other hand, real orderliness in the woolen spinning branch of the industry has been enhanced through the development by representatives of the Industrial Council of piece rates in that trade.

opportunity for the interchange of opinions, and with no directing agency or body. Even wage changes have in most mills been stated in such a manner that the ordinary operative would have considerable difficulty in forming an independent judgment as to whether the movement of his wages has or has not kept in step with the changes in prices.

Besides the clarity of the British wage arrangements, making for industrial peace, there is the further advantage to the British wool manufacture that by reason of the particular method whereby actual wages are now determined — by ratios of pre-war rates tied to the cost-of-living index number, and adjustable monthly — the wages bill has decreased and will decrease with every considerable betterment of the British economic situation, whether the modification of the post-war speculative mania, the elimination of monetary depreciation, or the readjustment of general European conditions. American wage reductions will be fought by the labor unions and nothing but industrial depression of an unmistakable sort will enable the employers to win their point. In England, after a sufficient decline in the cost of living, the presumption is in favor of the manufacturers; labor must show cause why wages should not be reduced in accordance with the prearranged system.

On the other hand, to be sure, provisions attached to the wage agreements covering various branches of the British wool industry specify that wages shall not decline, whatever the course of general prices, fully to the pre-war level — labor shall register a net gain when the normal post-war conditions have appeared.<sup>20</sup> This aim is to be secured, as in the case of the well-deserving wool-combers, by means of special percentages upon the pre-

20. Beyond the gain through the shortening of working hours from 55½ to 48, without a decline in time wage and with a pro rata increase of piece wages.

war or base wages which are agreed by both sides to be permanent and independent of the "cost-of-living wage." In other cases, as that of the dyers, it is provided that after a certain point is reached wage reductions shall not be proportionate to decreases in the cost of living, but somewhat less — specifically in the dyers' case, in the ratio of .8426 to 1. Arrangements such as these, which have become general through the British industry, do not, however, seem to be held sacred in all circumstances. In the last wage agreement, 5 per cent of the previously granted 15 per cent "permanent" advance was withdrawn. At best, then, assuming both the United States and English returned to the pre-war level of prices, the decrease in the British advantage in wage rates will not be great.

## II

The experience of the American wool manufacture in the decade 1910-20 differs in some respects rather sharply from that of the British industry. During the first few years American producers were enjoying the protection of the Payne-Aldrich tariff rates, rates which by their height had almost immediately aroused criticism. The change to lower duties in the Underwood tariff had been hardly accomplished when the European war broke out. The new duties on wool cloths had then been in force only seven months. What the ultimate effects of these lower rates would have been upon the industry is difficult to estimate. In my opinion, they would have put American manufacture to a severe test, and while the industry as a whole would by no means have "gone to pot," some sections of it would have had to curtail operations or shut down completely.<sup>21</sup> From

21. I have in mind particularly the production of the finer fabrics and specialties, and the prosecution of some specialized branches of the worsted industry. A case has

that time to the recent general business depression, the industry found its path one of ease and prosperity. The dividend rates of many wool companies, such as the American Woolen or the Arlington Mills, are of themselves sufficient evidence. Contributing to this situation have been the absorption of Europe in war, the increased natural protection of higher freight rates, the general rise in prices, and the opportunity to supply certain neutral markets; not least, the extraordinary demand for military cloths by the United States government after our entrance into the conflict. Even after the conclusion of armistice and peace, the insistent demand for goods had sufficed up to the middle of 1920 to sustain the industry notwithstanding the increased importation of wool products from England and more recently the Continent. Accordingly, while the British industry was being tried and tested in the stress of war-time exigencies, the American had the ease of abnormal prosperity. Despite many divergent circumstances, one is struck with certain forcible resemblances of the present with the post-Civil War period. During that struggle also, northern woolen mills had enjoyed exceptional prosperity. New mills were built, the capacity of old ones enlarged, and various cotton mills were transformed for the production of wool fabrics. With what result upon the tariff? Before the war our wool manufacture had survived, and, I believe, had been content under tariffs of 30 and 24 per cent on manufactures, with a similar duty on the raw wool during the greater part of the time; but in 1865-66 the domestic producers organized and practically dictated the Woolens Act of

come to my attention where an experienced wool-comber and top-maker sold his plant outright after the first few months of operation under the 8 per cent duty accorded to tops by the Underwood tariff. A proper adjustment of rates of semi-manufactured articles would probably have saved considerable confusion and disruption in the worsted industry.

1867, to that time the highest sort of Schedule K that had been enacted. What should one expect at the present time?

In answering this question, attention must first be given to the expansion of productive capacity on the part of the American industry. It has been one of the outstanding features of the last decade and particularly of the war period, and seems to have outrun the broadening of the market for domestic wool goods.

The expansion of manufacturing facilities has been particularly great in the yarn-producing sections of the industry. While weaving capacity has increased at most 15 per cent, the number of woolen spindles has increased over 25½ per cent, French-system worsted spindles 65 per cent, and worsted frame spindles nearly 25 per cent.<sup>22</sup> The surprising growth in these sections of the industry, over and above the growth in the weaving section, is in considerable part attributable to the increase of the knit-goods industry, which itself produces little wool yarn for its own consumption. But there are other features connected with that growth which are apparently not as propitious for the industry as even the spread of this partly competitive manufacture.

It will be noted, for example, that the number of woolen spindles has increased faster than that of the

22. Statistics taken from the Census show the following:

Machines.	1909	1914	1918 (July 1)
Woolen carding sets (including shoddy cards) . . . . .	6,399	6,245	7,229
Combing machines . . . . .	2,120	2,425	2,347
Spinning spindles:			
Woolen . . . . .	2,156,000	2,080,000	2,706,000
Worsted mule (French) . . . . .	423,000	670,000	699,000
Worsted frame (Bradford) . . . . .	1,329,000	1,558,000	1,642,000
Looms:			
Broad (50 inches and more) . . . . .	54,000	57,000	62,000
Narrow (less than 50 inches) . . . . .	19,000	19,000	18,700

preparatory machines, woolen cards. Similarly, but with a greater disparity, while worsted spindles have as a whole expanded a third since 1909, combing machines have increased but approximately 10 per cent.<sup>23</sup> Such statistics suggest a trend toward the spinning of substantially finer yarns in the last decade. The production and use of such yarns are less satisfactorily fitted to American conditions than in the case of coarser yarns. In the manufacture and employment of fine yarns, greater care and labor per unit of output are required, other things being equal. Scouring must be carried on more carefully and combing more slowly. Drawing can be accomplished perhaps only with the introduction of added operations, the speed of spinning spindles must be lowered, and that of the loom modified. All along the line, higher counts mean added difficulties.

Again, there seems to be some duplication of equipment. The statistics show a sudden reaction toward the woolen manufacture after 1914, the more interesting because preceding decades had witnessed a fairly steady and quite decided decline in the position of that branch of the industry. The recent increase in carding sets and woolen spindles is to be explained in large part, of course, by the military demand for woolen fabrics, but in lesser measure by a renewed public desire for such goods.<sup>24</sup> At least, there has been a considerable exten-

23. Moreover, with the special expansion of the French system, a considerable proportion of the added combing machines must have been of the Continental type, of which the productivity is only about a third that of the standard Noble comb. Some allowance must, on the other hand, be made for the slower consumption of tops by the French-system spinning processes; for the employment of tops imported more freely under the relatively low (8 per cent) duty of the Underwood tariff; and something may be allowed for the greater productivity of combs in the commission combing establishments, which have grown materially in the last decade as compared with the same number of combs in integrated plants. However, with all allowances, the general situation — spinning equipment outrunning preparatory equipment — is sufficiently obvious, or in other words greater attenuation and more twist being given the average yarn. It should be added that the increase in wool consumption closely approximates the increase in preparatory machinery.

24. To be sure, the increased demand for cloths of woolen texture has in part been met by an extension of the manufacture of worsted-warp and woolen-weft fabrics.

sion of woollen spinning capacity at the same time as the large expansion of the worsted equipment, or closely following upon it. Inasmuch as most textile machinery wears out slowly, it is probable that a manufacturing capacity more than adequate for normal demands will persist for some time.

The particularly large increase in the French or Continental system of worsted yarn manufacture, to be observed in the above figures, is a further factor of questionable advantage to the American industry as a whole. To be sure, it gives a diversity to the American industry which even the British worsted industry lacks.<sup>25</sup> But the production of worsted yarns on this system is carried on by methods substantially different from those employed in most successful American industries. The type of wool chiefly employed, the greater care with which combing, drawing, and spinning must be prosecuted, and the general use of adult male spinners, all are adverse factors. The product is a soft, full yarn, lacking the firmness and strength which are imparted to the yarn in the Bradford worsted process. Their utilization in weaving is consequently hedged about with greater care and slower speed — conditions not propitious for an American industry. They have found employment, except insofar as used in the knit-goods industry, mainly in the production of the best grade of fabrics, such as fine, soft, drapey dress goods.<sup>26</sup> Finally, it should be noted that foreign competition — competition from the Continent — will presumably be strongest with respect to products of this Continental system, the mule-spun yarns and the soft, superior Con-

25. Less than 5 per cent of British worsted spindles are of the Continental or mule type.

26. Typical are the productions of the Passaic mills started years ago under German management. It may be added, moreover, that of our best dress goods a competent British observer recently stated he had seen none superior from any part of the world.

tinental cloths. In sum, I fancy this recently expanded branch of the wool manufacture to be the portion with the least competitive strength.<sup>27</sup>

Finally, it is probable that the increase of the industry's productive capacity even in its most restricted sphere has outrun the available market under normal conditions. There has been an increase of weaving capacity of from 10 to 15 per cent — taking into account both the increase in the number of broad looms and the spread of automatic looms — at the same time that knitted fabrics such as jersey cloth have been making extensive inroads into the field of woven wool goods and that the cotton industry has continued its encroachments on the same domain, as in the more extensive production of palm beach suitings.<sup>28</sup> It is a serious question whether such expansion is warranted by the growth in our population or the enhancement of our normal purchasing power.

Taking the whole matter of capacity into account, then, it is obvious, I believe, that all is not well. There has been a duplication of yarn-producing equipment which in mills carrying on both branches of the industry will lead to higher overhead charges through idle machinery, and which among specialized mills may easily lead to such severe competition as to eliminate profits from all but the more efficient establishments. Again, there has been a growth in weaving capacity beyond the probable normal demand for cloth, and particularly

27. The Continental system is not really a newcomer in this country, dating at least from the early or middle eighties. It could hardly be termed an "infant industry." Still one should not be too exacting when attempting to put a time limit on infancy in industry. Mr. Taylor, representing the National Mohair Growers' Association, recently stated to the Ways and Means Committee: "I am before you today representing the infant live-stock industry of America. We by actual figures and count are only 71 years old." Hearings on General Tariff Revision, 1921, p. 2691.

28. Such abnormal circumstances as the temporarily increased purchasing power of certain classes in the last year or two, or the decrease in demand due to the abbreviation of women's skirts may be disregarded.

there has been a tendency toward the manufacture of finer goods. While the action of certain of these factors might in time, with the growth of our market and the scrapping of obsolete machinery, be substantially modified or wholly eliminated, at present all are provocative, as after the Civil War, of complaints on the part of domestic manufacturers and of a susceptibility to see in any importations whatever a grievous injury to American industry.

In the character of the technical equipment, of which some features have been mentioned above, there has been no great change in the American industry during the last ten or fifteen years, with the exception of the automatic loom. Apparently now as then we possess some advantages and some disadvantages. The arrangement of the American factories is probably superior on the whole to that of British mills, with a somewhat greater edge in the case of the worsted mills than in that of the woolen factories.<sup>29</sup> American mills make more use of gravity and forced drafts for the conveyance of loose wool. The felting of the wool on account of which the British object to the forced-draft method of conveyance is not of sufficient moment for the greater bulk of our production to prevent the installation of such systems. On the other hand, the better British mills make use of carding machines which are wider and better constructed than our own. The woolen mules also appear of superior construction. We have no weaving mechanism which is equal to the British overpick loom for the production of plain fabrics. Our box looms, on the other hand, are as above stated identical in character for the most part to the similar loom so widely used in the British industry—they seem as well

29. In worsted we imported a British-bred manufacture, but our woolen manufacture "just grew."

made, and our manufacturers run the machines at somewhat higher speeds. And so it goes from section to section of the industry. On the whole, I would regard the American manufacturing equipment as equal to the British, but not superior to it even considering the present state of the automatic loom in the two countries; while the outlook for the future through progressiveness leans distinctly in favor of the foreign industry.

In the working of the mechanical equipment the American industry has an appreciable advantage. The greater effectiveness of the American manufacture is in part the result of somewhat better organized production, more attention to routing and the like; and in part the result of production on a larger scale in most branches of the industry — of which more later. With regard to the human element it is more difficult to speak conclusively. In certain portions of the manufacturing process, as for example, scouring, combing, drawing, and possibly carding and pressing, there is little difference to be discerned between American and foreign labor efficiency. The processes require chiefly semi-mechanical machine minding, and any advantage on either side of intelligence, inheritance, or training has little play. In weaving we seem to have the upper hand, probably in a measure at the expense of quality in product. Our manufacturers are able to push their workers somewhat more, with the result that more commonly here than abroad weavers will tend two, three, or even four looms (of the non-automatic type). In many of the finishing operations, however, the foreign workers, especially the English, have the advantage, probably in quantity and surely in quality of production, since there experience is of peculiar value and in experience the foreign worker far overtops the American.

Whatever the variation in skill and efficiency in the

several sections of the manufacture, it is, I believe, incontestable that the net advantage, even in the more favorably situated portions, is insufficient to counter-balance the higher scale of wages paid in the domestic industry.<sup>30</sup> Comparisons with foreign wage scales, and especially with those of the Continent, as of the present time, are difficult to make, and almost impossible to make accurately. However, certain general estimates may be taken to show the trend. Statistics pertaining to British wage rates of late 1919 and early 1920, published by the United States Tariff Commission, indicated that in most cases the wage rates in England were from 45 to 50 per cent of American rates.<sup>31</sup> Since then the movement of wages in the two countries has not been dissimilar, and I should expect to find roughly the same results were another comparison along such lines to be made today.

Another method of approach is that of wage changes since the pre-war period. The English total rates reached their maximum elevation in December, 1920, when most time workers were to receive  $216\frac{1}{4}$  per cent more than they had been receiving in July, 1914 (with a maximum advance of 60s.  $4\frac{1}{2}d.$  where such a maximum applied); the great proportion of male piece workers,  $223\frac{1}{2}$  per cent more; and most female piece workers,  $232\frac{1}{2}$  per cent more. Since that time, on account of the decline in the cost of living in England and of the new wage agreement, the ratios have decreased, until according to the last reports available the per-

30. This disadvantage of the American manufacturer is the more obvious since many occupations of the wool-working mill are paid at piece wages, and these rates are much higher. Greater effectiveness of the workers in such cases would, of course, affect only the distribution of overhead.

31. Report entitled *A Survey of the British Wool-Manufacturing Industry*, pp. 56-65. Wage rates for Great Britain were converted in this Report at the par of exchange; but I have here made allowance for the depreciation of the pound sterling which existed at the time these wage rates were secured.

centages for the three groups above mentioned were, respectively  $125\frac{1}{2}$ ,  $135\frac{1}{4}$  and  $141\frac{1}{2}$  per cent.<sup>32</sup>

Exactly similar American figures are not available, and the best and most recent ones seem to be those compiled by the National Industrial Conference Board. The most comparable figure of the Board's report<sup>33</sup> is that of hourly earnings. The index figure of such earnings for men showed a rise of 203 per cent by June, 1920, and it remained above 200 per cent until December of that year, when it slid off two points. For women, the peak reached was 228 per cent, in June, 1920; but that rate was for the month only, and in the latter part of the year it too averaged around 200 per cent. Since the end of 1920 there has been a general decrease of  $22\frac{1}{2}$  per cent based on the workers' total wages, presumably bringing down the percentage of hourly earnings above the base of September, 1914 to around  $132\frac{1}{2}$  per cent for both men and women.<sup>34</sup> Despite the failings of the method of comparison here utilized, it is obvious that as far as relative wage scales are concerned, the American industry has at least gained nothing during the war and post-war periods. The disadvantage in wages under which the American manufacturer proceeded in 1914 — we have no accurate comparison even in the report of the Tariff Board — has been maintained or even increased in more recent years.

32. Based on data as of the middle of September, 1921.

33. Research Report No. 35 of the National Industrial Conference Board, *Wage Changes in Industry, September, 1914–December, 1920*, pp. 18–21.

34. Incidentally it may be noted that the increase in hourly earnings was greater for the wool-manufacturing industry than for any other reported in the Board's Report; also that the cost-of-living index as given by the Board showed an advance of only about 90 per cent when the index of hourly earnings for the wool manufacture was around 200 per cent above 1914. These facts suggest one of two things: either that the industry is lenient about its wage advances, or that through lack of organization the industry is under a severe handicap as compared with other industries of the country. In this latter regard, the influence of one or two of the more efficient firms, like the American Woolen Company, in setting the pace for wage advances seems to have been a disadvantage to the industry.

Comparative wage scales alone do not, of course, tell the whole story, any more than comparative excellence in mechanical equipment by itself. Already reference has been made to modifying factors, such as the administrative ability of American manufacturers, and to the relative initiative and skill on the part of American and foreign operatives. Further factors to be taken into account are comparative scale of operations and variance in form of organization. These can but be touched upon here.

The operation upon a larger scale in this country, speaking generally, both in the worsted and woolen branches <sup>35</sup> is of advantage to that industry mainly by reason of the standardization or quasi-standardization of product which has taken place to a notable degree in our manufacture. A conspicuous case is that of the Fulton serges, one of which, No. 3194, is used in the trade as a sort of foot-rule to measure the general fluctuations of wool cloth prices. Such goods, usually constructed in medium or medium-fine quality and of plain colors or conservative designs, may be secured in any bulk desired, are always substantially uniform in quality, color, and finish, and have filled in the past a wide and fairly constant demand from our consuming public. The virtual lack of such fabric production in other countries may, with such other factors as assurance of delivery, of "repeat," and credits, account for the alleged disappointment of cloth buyers who in 1913-14, anticipating the new lower tariff, journeyed to Europe and returned without placing any considerable orders.<sup>36</sup> In addition to fitting American requirements

35. The disparity in size of operations between this and European countries is greater in the case of worsteds than of woolens, altho in certain instances, such as the specialized woolen mills of the American Woolen Company, the relation is about the same in the two branches.

36. Reports in textile periodicals at the time. See also the recent account in testimony of Mr. William Goldman, representing the National Clothiers' Assn. of America

so closely, the production of such cloths in our mills is undoubtedly carried on with maximum effectiveness. Under such conditions the 35 per cent duty levied by the Underwood tariff would be much more valuable to American manufacturers than if our output were of the common European type. It may be added that in so far as our industry has departed more recently from the production of fabrics of that type under such conditions, its competitive position has, it seems to me, been weakened.

The second modifying factor above mentioned, difference in form of organization, applies chiefly to the worsted branch of the industry.<sup>37</sup> Here again the decision seems to depend upon the quality of fabric manufactured. In the case of the finer grades of goods, some net advantage seems to inure to differentiated European industries. There is the possibility of greater individual attention to blending or design; the probability of superior quality in the semi-manufactured articles; the possibility of more careful watch over manufacturing niceties; and similar features. In the bulk manufacture of medium-grade fabrics, on the other hand, integration of the American sort appears to enhance competitive strength.

The road to improvement in competitive strength in the American wool manufacture seems hedged about with difficulties. Certain basic conditions, such as the nature of the wool fibre<sup>38</sup> and the general levels of wages here and abroad, are of course, beyond the power of the wool manufacturers to modify. Accepting them as either fixed or at best slowly changing, one might look

before Ways and Means Committee, Hearings on General Tariff Revision, 1921, pp. 2650 seq.

37. The woolen branch is integrated in all countries; but some comparison might be made as to the degree of specialization in each. The average difference is not great.

38. Cf. Taussig, *Some Aspects of the Tariff Question*, pp. 357 seq.

for more immediate progress in any of at least three directions: improved technical equipment, more closely regulated wage conditions for the wool manufacture itself, and the extension of standardized production.

Students of the wool-manufacturing industry will recall that the period from the introduction of the early English equipment (especially 1790–1800) to about 1840 was one of extraordinary technical advance, in which American contributions played no inconsiderable part. Such contributions included automatic machinery for the manufacture of card clothing, the cylindrical shears, the cylindrical press, and especially the ring doffer, a device of almost revolutionary importance.<sup>39</sup> By the end of that period, the mechanical groundwork of the present industry had been laid so far as the woolen branch is concerned.<sup>40</sup> Subsequent advances in this branch of the American manufacture have consisted in part of increasing the size of the original machines and in part of sporadic inventions, such as the automatic feed for carding machines and the open-shed loom. Development abroad has been along the same lines, inventions of no greater importance taking the place of those just mentioned for the American industry. One cannot say that the part played by the American manufacture has been wholly passive in this latter period—merely the acceptance of foreign developments; nor on the other hand that it has been one of superior progress as compared with that of the foreign industries. And in this relation the future does not promise any amelioration, but rather the reverse, in view of the keener interest being taken especially by the British and Germans in technical inquiry.<sup>41</sup>

39. Lacking it, the woolen branch of the industry might well have developed drawing operations similar to those still retained by the worsted branch.

40. There was practically no worsted production in this country at that time.

41. On account of relatively direct methods involved in the woolen branch of the industry, there is little or no probability of alteration through the elimination of any

The worsted branch of the American industry has had an essentially different history. Until the 50's, it existed only as a handicraft manufacture of negligible quantity. After the invention abroad of the mechanical combing machines, the worsted yarn manufacture, at first of the English type only, was imported into the United States and set up in the factory form; but it was imported *in toto* and with a well developed technical equipment. Later, in the 80's, when the Continental system was first introduced, it was brought in with an even more highly developed technique. Since their importation, the methods and equipment of worsted yarn production have received no important change originating on this side of the Atlantic. Even increases in the size of machinery have come chiefly from abroad, because of the relatively late development of worsted machine building in the United States.<sup>42</sup> For the Bradford system this means passiveness of nearly three-quarters of a century, and, as already intimated, the Continental system cannot continue to qualify as an "infant industry." The reasons for this imitativeness are uncertain: whether the spell of the British or Continental precedents, the influence of the proprietors and foremen of foreign birth who always have been more numerous here than in the woolen branch, the lack of an adequate and stable machine-building industry, or a complacency fostered by a high tariff wall, particularly favorable to worsteds, and a rapidly expanding domestic market.

existing steps in the manufacturing process. Advance would be looked for along the lines of improvements such as frame spinning of woolen yarns, of a better understanding of the processes, their perfection, saving in materials through reduction of wastes and of imperfect goods, and the like. Much remains to be done in such particulars.

42. The recent development of the automatic box loom for the joint weaving section of the two manufactures, tho of more immediate value in worsted weaving, is the product of the machine-building industry rather than of either branch of the wool manufacture.

Another possible alternative, of course, is that improvement *could* not have been made in the last half-century. Indeed, a British worsted spinner of prominence said recently of the present worsted-spinning equipment that "so far as machinery in principle is concerned, we have gotten to the limit of invention";<sup>43</sup> and it is true that abroad as here such equipment has not been changed in principle in recent decades. Unlike some other industries such as coal mining or steel working, the chief textile manufactures all seem subject to diminishing returns so far as technical improvement is concerned. No country has in the last twenty years been making an advance in wool, cotton, or silk manufacturing technique comparable to that made fifty years ago; and at least for the wool and cotton industries the advance has been far less than made a century ago. However, in view of some of the developments in the British industry in the last decade or so, and the progress that has been made in recent decades in minor American textile industries such as knitting and carpet manufacturing, a real stagnation seems improbable. An abbreviation of the tedious gilling and drawing operations in the worsted process, one would hope, must some time be devised, and the world is waiting impatiently for a reformation of the wasteful and noisy weaving operation.<sup>44</sup>

At all events it may be said (reverting to our main topic) that scientific investigation has been going forward or is going forward much more rapidly in foreign

43. Journal of the Bradford Textile Society, July, 1917, p. 26.

44. The Belgian system for manufacturing semi-worsted yarn, which eliminates combing, is an illustration of what perhaps could be carried further in worsted yarn production; and numerous experiments have already been carried through in attempted reformation of the present loom. Col. John P. Wood, appearing before the Ways and Means Committee recently on behalf of the wool-manufacturing industry, indicated his belief that self-sufficiency in that manufacture could only come "by some revolutionary discoveries and machines which are not yet in sight." Hearings on General Tariff Revision, 1921, p. 2577.

countries than in the United States. Even inventions or improvements coming from our manufacture, if of an isolated variety, would have little permanent effect on the comparative strength of American and foreign industries, since in these days improvements cannot be kept secret long. Only steady and unremitting endeavor along such lines would avail, and our manufacture is not in the position or spirit to make that endeavor. The leading organizations in the American industry show no interest in the deliberate promotion of research and invention, and our textile journals, presumably following the tastes of their clientele, devote little space to the matter. None of the interest and activity along these lines which seems to infuse, say, the British manufacture is apparent in our industry. Accordingly we can hardly anticipate that future progress in technical equipment will emanate from American sources; we can hardly hope for increased competitive power in our manufacture from this quarter.

Advance through a better control of wages in the wool manufacture itself is possible only by means of increased coöperation among American manufacturers. As long as competitive bidding for employees exists, wages are bound to be maintained frequently at unnecessary heights. Some rather informal understandings have, to be sure, been created at times in the past among mills in certain localities, but these have not had sufficient strength to be very effective.<sup>45</sup> The wool manufacture in this country is not as definitely localized as that of Great Britain, but the greater portion of it could, I believe, be satisfactorily organized. However, at best advance along this line would be only a palliative. The general level of wages would be little affected,

45. It is perhaps a matter of regret that the National Association of Wool Manufacturers did not lead the way in this matter when in 1919 it had an opportunity. No doubt there were various reasons why that Association might hesitate.

and the American industry would still be compelled to pay substantially higher wage rates than most foreign manufactures.

The third possible path of advance, that of standardized production, as above noted, has already been extensively traveled. Some further progress is undoubtedly possible. Standardization of tops and yarns could come from within the industry and would facilitate manufacture so far as the American production is or becomes differentiated. Standardization of cloths is in large part dependent upon the vagaries of popular demand. Moreover, it may be noted that one force making for large-scale production in these standardized or semi-standardized goods, that of demand from the wholesale clothing trade, is not likely to be much strengthened in the future, except by the growth of population and like slow-moving factors. Indeed, it is much more probable that the next decade will in this regard yield a further advantage to our competitors, England and the Continent, through the increase in scale of their representative woolen and worsted enterprises consequent upon the extension of their ready-made clothing industries. In this matter, then, the American mills can do little more than adhere as far as possible to the standardized or semi-standardized goods already developed, permitting novelties and the finer grades of fabrics to come from abroad. Surely competitive strength cannot increase either in the individual mill or in the industry as a whole if production is permitted to run the "ranges" and patterns, to fritter its energies in relatively small orders, and to attempt the fine workmanship of the leading Huddersfield or Bradford establishments. The closer American mills cleave to typical American manufacture, the stronger will be the industry as a whole.

What conclusion can be reached, having regard to the conditions above outlined, in the field of tariff policy? It appears that, tho there are possibilities of greater competitive strength in the American wool manufacture, the probabilities of effective advance are not great. Little is being done to put the domestic industry in the way of progress, either in the matter of technical improvement or of wage control; nor is effort being made toward the standardization of those articles — such as tops and yarns — in the development of which the industry as a whole might have influence. The deductions to be drawn from these general conditions of possibility and probability obviously will differ sharply according to one's economic or political faith. For one who views with regret the indefinite maintenance of tariff aid for any industry which shows no real prospect of ultimate self-sufficiency, the situation is discouraging. He cannot recognize in the wool manufacture as valuable a member of the body economic (if one may use the phrase) as the majority of our more important industries. On the other hand, for the protectionist who believes that domestic industries, whatever their competitive strength or future prospects, should be given the amplest support against the cheaper-working foreign manufactures, the details and the exact measurement of the comparative disadvantage in the American wool-using industry are of no consequence. It suffices for him that there is real and apparently permanent disadvantage. And to him the case is conclusive for the continuance of a system of duties on woolen and worsted products substantially like that which has been in force during the last half-century.

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