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IRON AND STEEL INDUSTRY

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PREFACE.

The Preparatory Committee for the International Economic Conference, at its first meeting in April 1926, laid down an elaborate plan of research in order to enable it to determine "in what domains the economic difficulties which are at present experienced are international in character". It decided that, amongst other documents, a series of memoranda should be prepared concerning certain industries, including iron and steel, and at the same time indicated the general lines on which these memoranda should be compiled. In the early summer of 1926, the Secretariat accordingly drew up a rough preliminary draft which was circulated to certain members of the Preparatory Committee and submitted by them to the industrial associations in their own countries for comment and criticism. A fresh draft was then prepared before the second meeting of the Preparatory Committee in which account was taken of the observations received. By the date of this second meeting, however, all comments expected had not been forwarded, and the document then circulated was accordingly provisional in character.

In the present document, account has been taken of information transmitted by members of the Preparatory Committee from Belgium, Czechoslovakia, France, Germany, Italy, Poland, Spain, the United Kingdom and the United States of America, including the observations of the Belgian Direction générale des Mines, the Federation of the Czechoslovak Employers' Organisations, the Comité des Forges de France, the Fachgruppe der Eisen schaffenden Industrie beim Reichsverband der Deutschen Industrie, the Associazione fra gli Industriali Metallurgici Italiani, the Fomento del Trabajo Nacional (Spain), and the National Federation of Iron and Steel Manufacturers.

The section on labour conditions and the corresponding Annex II are prepared in the main from information collected by the International Labour Office.

In Annex V will be found statements and observations on the industry in Germany, France and the United Kingdom submitted by the Iron and Steel Producers' Organisations in these countries. The text of the International Steel Agreement is given in Annex VI, together with a note on the Share Quotas in this Agreement.

Geneva, March 1927.

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I. PRELIMINARY SURVEY OF THE ESSENTIAL CONDITIONS OF THE INDUSTRY.

The location and development of the iron and steel industry has been determined to a large extent by geographical and geological considerations. Its raw materials are heavy and their specific value is low. Freights therefore represent a considerable item in the cost of production, and for this reason the great metallurgical undertakings of to-day are grouped on the sites where they find their coke or their ore. The improvement of methods and processes of manufacture has accentuated this natural concentration. Owing, moreover, to the weight of commodities manufactured, it is important that the industry should be situated in such a manner as to have ready access to its main markets. It is these causes which have determined the concentration of the industry in the United Kingdom, Belgium, Luxemburg, France and Germany, near to the Cleveland ore and Durham coal, the Lorraine minette and Ruhr coke, or near to the sea-coast, rivers and canals which provide cheap transport facilities.

The nature of the industry has tended, moreover, towards a considerable degree of financial concentration and to large-scale production. It is obvious that the heavy tonnage, bulk and low relative value of the raw materials necessitate a costly plant and large output. The considerable capital required for opening up new iron mines renders big-scale production almost inevitable. The average capacity of blast-furnaces increases because, with the large tonnage handled, the return on the capital invested is increased. But the intensive working of the ore deposits involves a swifter amortisation of the capital, as well as the necessity of renewing the plant of the works frequently enough to keep pace with the advance in technical science. In the foundry also, large-scale production, where possible, is the most profitable; indeed, mass production is characteristic of modern methods of steel production.

The development of mechanical apparatus necessary for the handling of bulky raw materials has resulted in the number of workmen employed per unit of capital being relatively small. Wage costs are therefore directly proportionate to production while overhead expenses are constant, and costs of production therefore rise rapidly when work is below normal pressure. Large-scale and continuous production is thus essential to the prosperity of the industry.

In spite of these characteristics of the industry, which in normal times have prevented an unduly hasty development of output capacity, one of the main difficulties with which the industry in Europe is at present faced is the excess of capacity over actual requirements. This phenomenon must be attributed in the first instance to the war, which called forth a tremendous effort on the part of the belligerent countries for the manufacture of munitions and implements of war, and at the same time favoured the development of the industry in countries which, owing to the impossibility of

obtaining metallurgical products from the majority of the belligerent Powers, were obliged to provide for their own needs to a greater degree than heretofore.

Moreover, the changes effected by the peace settlement in the political map of Europe have influenced the iron and steel industry more than any other. Germany, by the recession of Lorraine to France, the division of Upper Silesia, the separation of Luxemburg from the Zollverein and the incorporation of the Saar district in the French Customs area, lost about 80 per cent of her iron-ore production, 30 per cent of her coal production, 30 per cent of her steel-works and almost 30 per cent of her rolling-mills. On the other hand, France gained the blastfurnaces and steel-works of Alsace-Lorraine, and, through the division of Upper Silesia, Poland gained 0.3 per cent of the iron-ore production, 5 per cent of the pig iron, 7 per cent of the crude steel and 7.5 per cent of the sheet-iron output of pre-war Germany.

The effects of the change of frontier on the metallurgical industries of France and Germany are well known. The economic relations between the new Lorraine basin and Germany arose out of the highly developed system of exchange of products and the close ties which existed before the war between the mining and metallurgical centres located on the same territory and often belonging to the same owners — relations which were either broken or rendered much more difficult. The breaking-up of the former Austro-Hungarian economic area had similar effects on the iron and steel industry in the Succession States. Lastly, the creation of the Polish State and the division of Upper Silesia were destined to create particular difficulties, not only because a political frontier had cut an economic area in two, but also because no machinery for exchange existed between Polish Silesia and Congress Poland.

The effect of the war, then, was at once to modify the world distribution of the iron and steel industry, to increase its productive capacity, and to disorganise the markets for raw materials and finished goods more especially on the continent of Europe. The necessary readjustment was bound to be difficult owing to the general impoverishment of Europe.

This readjustment was hindered by the difficulties incidental to the social and economic resettlement of mobilised populations, labour conflicts, etc., by political events, such as the occupation of the Ruhr and, above all, by the financial, monetary and price instability which has characterised recent years.

This instability has checked the willingness to save and hampered the accumulation of capital and hence the demand for capital goods, the typical products of the heavy-metal industry.

Despite the heavy task of reconstruction which the war imposed upon many European countries, therefore, the total demand for iron and steel products in Europe has not been up to the 1913 standard. As one currency after another has become stabilised, however, and confidence in money has gradually been restored, savings have gradually accumulated and the prospects of the industry to-day are in many respects better than they have been since 1918.

The year 1913, moreover, was one of exceptional prosperity, and in 1925 the total output of finished iron and steel products in Europe was about equal to that during

the last pre-war quinquennium. It was, however, far from being sufficient to occupy the whole of the greatly increased plant which Europe has inherited from the war years.

In 1925 the world produced about 2 million tons less pig iron and about 14 million tons more raw steel than in 1913. But, whereas the European output of pig iron had dropped by 9 million tons and of steel by about 2 million tons, that of the United States of America had increased by 6 and 14 million tons respectively. Moreover, the other parts of the world whose production before the war was insignificant have augmented their output both of pig iron and of steel by approximately 2 million tons. Pig iron is, however, the main raw material for the production of steel, though in the post-war period it has been replaced to a certain extent by scrap for that purpose. Moreover, the output of pig iron for finished iron products has dropped. Neither of the two production series, therefore, constitutes alone a true measure of the development of the heavy metal industry. In a later section, an attempt is made to measure very roughly the consumption of iron and steel products in such a manner as to avoid this difficulty.

The results of this analysis indicate that the aggregate consumption of iron and steel in the United States in the year 1925 was nearly half as big again as before the war, while the aggregate consumption in the leading European iron and steel countries had dropped by about 5 per cent. These countries have not been able to find compensation for the decline in their home consumption by increasing their exports to the other European countries and have been faced in their overseas markets by the competition of growing indigenous industries, so that their net exports in 1925 were even a little less than in 1913. Their total production of finished iron and steel therefore remained below that of the last pre-war year. This decline, however, was wholly due to the drop in the demand for wrought- and cast-iron products. Their output of steel products was actually greater in 1925 than in 1913.

As there was no prospect of any rapid or substantial increase in demand, industrialists began to consider whether it might be possible by means of international agreements, on the lines of the domestic agreements which existed before the war in certain countries, to adjust the total output to the estimated market requirements and to arrange for its equitable distribution. The negotiations initiated for this purpose led not only to an agreement between producers of rails similar to that which already existed before the war, but also to the Agreement between the steel manufacturers of France, Belgium, Germany and Luxemburg, concluded at Brussels on September 30th, 1926, the signatories to which have expressed a desire for its extension to the other great industrial countries. Austria, Czechoslovakia and Hungary have since adhered to this Agreement (see Annex VI giving the text of the Agreement and the share quotas).

Apart from providing for the apportionment of output between the countries concerned, the object of the Steel Agreement is, according to its authors, so far as possible to adapt actual production to immediate needs, or rather to enable such adaptations to take place in an orderly and regular manner, without the constant recurrence of crises. But, however great its practical utility, it does not solve the problem with which the iron and steel industry is ultimately faced: namely, how to

restore the balance between the productive capacity of the iron and steel industry and the world's demand for iron and steel products. The opinion of many industrialists seems to be that the present productive capacity increased by the war would not be excessive if the general economic situation were to become normal again.

In the United States of America, consumption of iron and steel per head to-day is more than twice as great as the average consumption in the leading European countries. This fact points to the possibility of a considerable further development of the iron and steel industry in Europe. To what extent such a development is likely to take place in the near future it is obviously impossible to forecast. But the industry is mainly devoted to the production of capital goods and its prosperity must depend largely on savings and capital enterprise.

II. ACTUAL OUTPUT AND CAPACITY OF PRODUCTION.

The world produces at present as much pig iron as in 1913, the record pre-war year, and considerably more steel. But Europe produced in 1925 and 1926 some 20 per cent less pig iron and some 5 per cent less steel. We are not here concerned with the abnormal conditions of production prevailing during the war or with the slump of 1921, but it may be noted that the 1913 figure for pig iron was never attained in the war period and that for steel only exceeded by a few per cent during the period 1916-18. As will be seen from the detailed world production tables of Annex I, the depression in 1921 cut down the output much below the figures for any year of the last pre-war quinquennium, the slump being particularly severe in the United Kingdom, largely as a result of the coal conflict of that year. In the United States, and, among the minor producing countries, in Canada, Czechoslovakia and Sweden, the slump extended over 1922; but since 1923 inclusive there has been a marked general recovery. The setback in Australia in 1922 and 1923 was due to labour disputes. The average world production of pig iron in the years 1923-26 exceeded that of the last four pre-war years by about 5 per cent; the increase in the case of steel amounted to 26 per cent.

The figures for 1926 in the Summary Table A below and in the Annex tables are largely estimates. For most of the countries, and for all leading producing countries, however, they are based on available monthly production statistics. For the others, estimates of the leading technical iron and steel reviews have been followed. Most of the figures and especially the totals for the various continents and for the world, therefore, are probably reliable approximations, though the increase in Asia may have been greater than is indicated. In the Annex tables, the pre-war production is shown as far as possible within both pre- and post-war frontiers for all countries which have undergone territorial changes.

The relative changes in production and the extent to which the output in the various countries in recent years has approached or exceeded the pre-war volume are

Table A.

(PIG IRON (INCLUDING FERRO-ALLOYS) AND STEEL (INGOTS AND CASTINGS).
Production in metric tons (000's omitted).

	Average ¹ 1909-1913	1913 ⁶	1923	1924	1925	1926 ⁷
PIG IRON						
<i>North America</i>	28,776	32,493	41,930	32,537	37,894	40,750
Canada	847	1,031	923	629	606	750
United States	27,929	31,462	41,007	31,908	37,288	40,000
<i>Caribbean and South America</i>	—	—	45	50	50	50
<i>Europe</i>	39,199	45,662	25,872	33,248	36,508	35,730
Belgium	2,060	2,485	2,148	2,844	2,543	3,401
Czechoslovakia	(968) ²	1,072	817	983	1,166	1,350
France	4,446	8,948	5,431	7,693	8,471	9,395
Germany	13,977	10,907	4,936	7,812	10,177	9,642
Italy	334	427	236	304	482	522
Luxemburg	2,104	2,677	1,406	2,157	2,346	2,512
Poland	(1,010) ³	1,031	520	334	315	328
Russia	3,668	4,220	530	757	1,551	2,430
Saar	1,244 ⁴	1,371	1,021	1,389	1,453	1,638
Spain	408	425	400	497	533	550
Sweden	629	742	302	535	463	480
United Kingdom	9,770	10,425	7,560	7,424	6,337	2,482
Other Countries	1,803 ⁵	932	565	519	671	1,000
<i>Asia</i>	300	607	1,806	2,079	2,038 ⁷	2,150
<i>Oceania</i>	37	47	335	423	446	500
World Total	68,312	78,809	69,988	68,337	76,936 ⁷	79,180
STEEL						
<i>North America</i>	28,527	32,862	46,560	39,199	46,886	50,000
Canada	835	1,060	897	660	766	790
United States	27,692	31,802	45,663	38,539	46,120	49,210
<i>Europe</i>	36,401	43,361	30,460	37,628	41,617	41,525
Belgium	2,138	2,467	2,297	2,875	2,549	3,374
Czechoslovakia	(1,050) ²	1,229	1,180	1,350	1,500 ⁷	1,600
France	3,883	6,973	5,109	6,900	7,415	8,386
Germany	14,547	12,236	6,305	9,835	12,194	12,340
Italy	958	934	1,219	1,358	1,785	1,712
Luxemburg	854	1,336	1,201	1,886	2,084	2,245
Poland	(1,536) ³	1,661	1,132	682	782	790
Russia	3,964	4,212	726	1,139	2,149	3,120
Saar	—	2,080	997	1,447	1,575	1,734
Spain	304	242	476	545	626	650
Sweden	618	749	310	550	518	519
United Kingdom	6,742	7,787	8,617	8,332	7,517	3,620
Other Countries	2,393 ⁵	1,455	891	729	923	1,435
<i>Asia</i>	300	346	1,377	1,639	1,800 ⁷	1,900
<i>Oceania</i>	—	14	147	302	469	500
World Total	65,228	76,583	78,544	78,768	90,772 ⁷	93,925

¹ The figures for the European countries (with the exception of Poland and Czechoslovakia) refer to pre-war boundaries, the production in 1909-1912 within post-war boundaries being impossible to ascertain (more especially as regards steel) in the case of several countries affected by territorial changes.

² Included in the figure for Austria-Hungary which is grouped with Other Countries.

³ Average 1911-1913 included in the figures for Germany and Russia.

⁴ Included in the figure for Germany.

⁵ Including the former Austro-Hungarian Empire, the average production of which in 1909-1913 was 1,793,000 tons of pig-iron and 2,374,000 tons of steel.

⁶ Production within post-war frontiers; for production figures referring to pre-war territories see Tables 2 and 3 of Annex I.

⁷ Provisional figures.

Table B.

PERCENTAGE DISTRIBUTION AND DEVELOPMENT OF THE WORLD PRODUCTION OF PIG IRON
(INCLUDING FERRO-ALLOYS) AND STEEL (INGOTS AND CASTINGS).

	1913	1923	1924	1925	1926	1925	1926
	Production ¹ as % of total	Production in each year as % of 1913 production within post-war frontiers				Production as % of total	
PIG IRON							
<i>North America</i>	41.23	² 129	² 100	² 117	² 125	49.25	51.46
Canada	1.31	90	61	59	73	0.79	0.95
U. S. A.	39.92	130	101	119	127	48.46	50.52
<i>Caribbean</i>						0.07	0.06
<i>Europe</i>	57.94	57	73	80	78	47.45	45.13
Belgium	3.15	86	114	102	137	3.30	4.29
Czechoslovakia	1.36	76	92	121	126	1.52	1.71
France	11.35	61	86	95	105	11.01	11.87
Germany	13.84	45	72	93	88	13.23	12.18
Italy	0.55	55	71	113	122	0.63	0.66
Luxemburg	3.40	53	81	88	94	3.05	3.17
Poland	1.31	50	32	31	32	0.41	0.41
Russia	5.35	13	18	37	58	2.02	3.07
Saar	1.74	74	101	106	119	1.89	2.07
Spain	0.54	94	117	125	129	0.69	0.69
Sweden	0.94	41	72	62	65	0.60	0.61
United Kingdom	13.23	73	71	61	24	8.24	3.13
Other Countries	1.18	61	56	72	107	0.86	1.27
<i>Asia</i>	0.77	298	343	336	354	2.65	2.72
<i>Oceania</i>	0.06	713	900	949	1,064	0.58	0.63
World Total	100	89	87	98	100	100	100
STEEL							
<i>North America</i>	42.91	³ 142	³ 119	³ 143	³ 152	51.65	53.24
Canada	1.38	85	62	72	75	0.84	0.84
U. S. A.	41.53	144	121	145	155	50.81	52.40
<i>Europe</i>	56.62	70	87	96	96	45.85	44.21
Belgium	3.22	93	117	103	137	2.81	3.59
Czechoslovakia	1.60	96	110	122	130	1.65	1.70
France	9.11	73	99	106	120	8.17	8.93
Germany	15.96	51	80	100	101	13.43	13.14
Italy	1.22	131	145	191	183	1.97	1.82
Luxemburg	1.74	90	141	156	168	2.30	2.39
Poland	2.17	68	41	47	48	0.86	0.84
Russia	5.50	17	27	51	74	2.37	3.32
Saar	2.72	48	70	76	83	1.74	1.85
Spain	0.32	197	225	259	269	0.69	0.69
Sweden	0.98	41	73	69	69	0.57	0.55
United Kingdom	10.16	111	107	97	46	8.28	3.86
Other Countries	1.92	61	50	63	99	1.02	1.53
<i>Asia</i>	0.45	398	474	520	549	1.98	2.02
<i>Oceania</i>	0.02	1,050	2,157	3,350	3,571	0.52	0.53
World Total	100	03	103	119	123	100	100

¹ Production within post-war boundaries.

² Production in each year as percentage of average production in 1909-13 (pig iron) :

	1923	1924	1925	1926
North America	146	113	132	142
Europe	66	85	93	91
World Total	102	100	113	116

³ Production in each year as percentage of average production in 1909-13 (steel):

	1923	1924	1925	1926
North America	163	137	164	174
Europe	84	103	114	114
World Total	120	121	139	144

shown in Table B on the preceding page and Tables 4-7 of Annex I. Table B gives, in summary form, the percentage distribution of world production in 1913 (post-war territories), 1925 and 1926 and the percentages which the production in each year 1923-26 constituted of that in 1913 (post-war territories)¹. Pig iron includes in all tables ferro-alloys for most countries and raw steel includes ingots and castings.

The iron and steel industry was exceptionally prosperous during the year 1913, and for this reason comparison should be made rather with the average figures for the quinquennium 1909-13. In the case of certain European countries, however, such a comparison is complicated by the fact that it is only possible to calculate the average production of the whole quinquennium for pre-war territories, comparable production figures for post-war territories not being available for the years 1909-1912 (see detailed Annex tables).

In 1926 the world production of pig iron and ferro-alloys very nearly attained the record figure of 1913, and exceeded the 1909-13 average by 16 per cent, while the production of steel ingots and castings exceeded the pre-war maximum by almost 23 per cent, and the quinquennial average by 44 per cent.

This advance, however, was almost wholly due to the unparalleled development of the iron and steel industry of the United States, where the production of pig iron was 22 per cent greater than in 1913 and that of steel almost 55 per cent greater (or 47 and 78 per cent respectively as compared with the average for the years 1909-13).

The other continents of the world, with the exception of Europe, have likewise made a remarkable advance, their pig-iron output being more than threefold and their steel production about sixfold that of 1913. Their heavy-metal industry before the war, however, was insignificant and is still relatively unimportant with an aggregate output of less than 4 per cent of the pig iron and less than 3 per cent of the steel production of the world.

The position of Europe in regard to the production of iron and steel is much less satisfactory, in spite of a remarkable recovery in recent years and more especially in 1924 and 1925. Immediately before the war, 57-58 per cent of all the pig iron and about 56 per cent of all the raw steel of the world were produced in Europe. By 1920, Europe's shares in the world output of pig iron and steel had dropped to 36 and 37 per cent respectively. In subsequent years the previous balance was largely restored, but North America has maintained the leading position (except for pig iron in 1924, which was a comparatively unfavourable year for the American iron and steel industry), and in 1925 it produced 49 per cent of the world output of pig iron against 47 per cent in Europe and almost 52 per cent of the raw steel against 46 per cent in Europe. In 1926 the balance turned once more against Europe, mainly as a result of the slump in the British iron and steel industry consequent upon the coal conflict, the reduction in the British production being only just counterbalanced by the increase in that of the other European countries. The actual percentages were for pig iron: North America 54 against Europe 45; and for steel: North America 53 against Europe 44.

¹ The Annex tables give full details for all countries and show the distribution of pre-war production on the basis of both pre- and post-war territories and the percentage development calculated on the basis both of the 1913 production and the average annual output in the period 1909-1913.

Europe's production of pig iron in 1925 was still short of the 1913 figure by 20 per cent and of the average for 1909-13 by 7 per cent, and its output of raw steel was 5 per cent less than in 1913 but 14 per cent greater than the 1909-13 average. The main causes of this slow recovery have already been discussed in the introductory section.

In the light of the comparative figures here given for the various continents the fact should be once more emphasised that the difficulties of the iron and steel industries mainly concern Europe, and within Europe the conditions of the industry have varied very widely from country to country.

Spain has more than doubled its steel production since 1913. In Italy in 1926 output was 83 per cent, in Luxemburg 68 per cent, in Belgium 35 per cent and in Czechoslovakia about 30 per cent greater than in 1913. But since 1923 a striking recovery in steel production has taken place in Germany, France and Russia. In 1926 Germany produced slightly more and France almost 20 per cent more steel than in 1913 within their present frontiers. In 1926 the first important results of the reconstructed or newly established iron and steel industry in the Kingdom of the Serbs, Croats and Slovenes became visible¹. On the other hand, the steel production of the United Kingdom, which in 1923 largely exceeded that in 1913, contracted steadily in subsequent years. The output of Poland has dropped below half of the 1913 figure and that of Russia, Hungary, Sweden and the Saar Territory is likewise still considerably below the 1913 level.

Belgium, Czechoslovakia, Italy and Spain have also increased their production of pig iron, Belgium by more than a third and Spain and Czechoslovakia by about a quarter. The output in Luxemburg and France (post-war frontiers) was about the same in both the years under consideration, while the other more important European pig-iron producing countries, except the Saar, where there has been an increase of 17 per cent, were below the 1913 standard.

It is interesting to observe that in 1926 the output of pig iron in Europe, excluding the United Kingdom, was 10 per cent higher than in 1925, and that of steel 11 per cent higher (the corresponding figures for the North-American continent being 7 and 9 per cent respectively). This increase was sufficient to outweigh the deficiency in the steel production of the United Kingdom and not far from sufficient to cover the drop in its pig-iron production. According to available American forecasts, the United States iron and steel production is not expected in 1927 to attain the record figures of 1926. In the case of Europe, a forecast is much more difficult to make for many reasons which cannot be entered upon here. But taking into consideration on the one hand the re-opening of the British iron and steel works after the closure of the coal dispute and, on the other, the slowly improving business conditions in many other countries, there would appear to be reason to believe that the production level of the two last years will at least be maintained. This, then, would mean a certain readjustment of the balance of the iron and steel production in favour of Europe.

A study of the figures in Table A will show that, while in the pre-war period 1909-13 on an average about 5 per cent more pig iron than raw steel was produced in the world, the balance was changed during and after the war with the result that, in the period

¹ The estimates for 1926 are those of the *Stahl und Eisen*.

1923-26, the world produced 16 per cent, and in 1926, 19 per cent more raw steel than pig iron. This shifting of the balance is practically universal and has been due, in part, to increased utilisation of scrap (which became plentiful during the war) as raw material for steel production, but mainly to the substitution of steel for wrought and cast iron. This point is further discussed and illustrated below in the section dealing with consumption.

It follows from what has been said that the production figures for steel are more indicative of the final demand ¹ for heavy metals than those for pig iron. Though for Europe as a whole the figures do not indicate any very important reduction in the effective demand in recent years as compared with the pre-war record of 1913, it is true that a considerable expansion of the demand between 1913 and 1926 would normally have been looked for. Meanwhile, the productive capacity of the industry, more especially in the case of steel, has been greatly increased. The difficulties with which the industry is faced, therefore, are mainly due — apart from temporary monetary causes — to the discrepancy between the technical or theoretical capacity and the actual output. But in certain European countries the whole economic structure of the industry is considered to require overhauling.

Although the information available concerning the capacity of the industry is incomplete and does not permit of any direct comparisons being made, a general idea of the position may be obtained from such estimates as do exist for the more important iron and steel countries. In so far as these estimates refer to theoretical capacity, however, the figures arrived at exaggerate the immediate potentialities of the industry. The American Iron and Steel Institute defines the *theoretical capacity* as “the capacity of existing plants in condition to operate” on a fixed date, and the *practical capacity* as “the production that may be attained in a year of maximum demand.” In regard to these definitions the Institute makes the following remark:

“Individual plants or individual units of plants all have a record or maximum production for some one month which cannot be maintained throughout a year. Accidents, interruptions for repairs, holidays and various other causes and conditions reduce the yearly output.”

On the basis of these considerations, the Institute made the following estimate at the end of 1925 of the annual productive capacity for pig iron and steel ingots of the *United States*:

	Theoretical capacity	Practical capacity
Pig iron	50,500,000 long tons	45,000,000 long tons
Steel ingots	56,000,000 » »	50,000,000 » »

Ferro-alloys are not included with pig iron, nor castings with steel. The actual production of pig iron was 36,300,000 long tons in 1925 and 39,100,000 in 1926 and the production of steel ingots 44,140,000 and 47,135,000 long tons respectively. (The

¹ As the steel industry produces on orders and, generally, not for stocks, the production figures can be taken as representative of the demand.

production of steel castings was 1,250,000 long tons in 1925 and may be estimated at about 1,350,000 tons in 1926.) The theoretical capacity at the end of 1925 thus exceeded the average production of pig iron in 1925-26 by 34 per cent and of steel ingots by 23 per cent, while the estimated practical capacity showed an excess of 20 per cent and 10 per cent.

The capacity figures quoted above do not include plants which had long been idle or were not likely to resume operations in the near future. They are therefore not directly comparable with the earlier capacity statistics of the Institute, which comprise all completed blast and steel furnaces. Judging from these statistics, however, the theoretical capacity of all blastfurnaces, active and idle, would appear to have increased by almost 25 per cent from the end of 1913 to the end of 1925 and that of the raw-steel works (ingots and castings) by roughly 50 per cent. Estimates of the practical capacity do not exist for any year previous to 1925. It will be observed, however, that the above percentages of the increase in capacity are in close agreement with those for production shown in Table B and in Tables 6 and 7 of Annex I.

Parallel with this increase in capacity and actual production, there has been a reduction in the total number of existing blastfurnaces from 462 in 1913 (473 in 1910) to 395 at the end of 1925. The last-mentioned figure includes 36 furnaces which have long been idle or were not likely to resume operations in the near future. In addition, there were 121 blastfurnaces temporarily idle. Of the 444 completed steel plants existing on the same date 55 were idle. Comparable pre-war figures for the total number of raw-steel plants do not exist.

In the *United Kingdom* there has likewise been a reduction in the number of blastfurnaces and a still greater reduction in the activity of those in existence, as will be seen from the following statement prepared from the statistics of the National Federation of Iron and Steel Manufacturers ¹:

	Total number in existence	Furnaces in course of erection	Number out of blast 5 years or more	Average num- ber in blast during year
1913	—	—	—	338
1920	481	17	38	285
1921	486	12	43	95
1922	485	12	39	132
1923	482	12	51	203
1924	475	7	65	185
1925	461	6	106	149
1926 (Jan.-April)	—	—	—	(145)
1926 (May-Nov.)	—	—	—	(9)
1926 (Jan.-Dec.)	—	—	—	56

Of the 482 blastfurnaces existing at the end of 1923, having regard to their equipment, 366 could be blowing at one time ². Since the war the maximum number blowing

¹ National Federation of Iron and Steel Manufacturers: Statistics of the Iron and Steel Industries (annual) and *Statistical Bulletin (Monthly)*.

² Information supplied by National Federation of Iron and Steel Manufacturers.

at any one time was 303 in September 1920. According to the estimates of the Federation, the *effective pig-iron capacity* (corresponding to what has been defined above as *practical capacity*) increased from about 11 million tons in 1913 to about 12 million tons in recent years, whereas the raw steel (ingots and castings) capacity was expanded by somewhat over 50 per cent from about 8 million to more than 12 million tons. The total number of open-hearth furnaces of the United Kingdom in the same period increased from 546 to 673. There are no statistics available with regard to the activity of these furnaces. A comparison with Table A, however, will show that the above capacity figures exceeded the actual average production in 1923-25 by more than 45 per cent for raw steel and almost 70 per cent for pig iron (or that steel production represented less than 70 and pig-iron output about 60 per cent of the practical output capacity).

In its "Memorandum on the German Iron and Steel Industry," the Fachgruppe der Eisen Schaffenden Industrie states that exact figures for the production capacity are not available. The number of blastfurnaces in existence in 1913 within the *German Customs Area* was 376, of which 46 were in Luxemburg, 64 in Lorraine, 28 in the Saar Territory, 21 in the present Polish Upper Silesia and the remaining 217 on post-war German territory. Measured according to the 1913 output, Germany, as a result of the war, has lost 42 per cent of its pig iron, 37 per cent of its raw steel and 34 per cent of its rolling-mill production. At the end of 1925, there existed in Germany 211 and, at the end of 1926, 206 blastfurnaces.

According to German official statistics,¹ 204 blastfurnaces were blowing in 1913 on the present territory and 141 in 1925. On an average, a little more than 100 furnaces were in blast in 1925 and about 90 in 1926². In the above-mentioned "Memorandum on the German Iron and Steel Industry", the production capacity of the present blastfurnaces is stated to be "not inconsiderably greater" than that of the furnaces existing before the war on the present territory. Judging from the statistics compiled by the Verein Deutscher Eisen und Stahl Industrieller, the theoretical capacity of the German blastfurnaces, in spite of the reduction in their absolute number, was increased by about 40 per cent from the end of 1922 to the end of 1926. The participation figures of the *Rohstahlgemeinschaft*, which exceed 15 million tons, offer a certain basis for a rough estimate of the productive capacity of the raw-steel works, which would appear to be at any rate, more than one-third in excess of the actual output in 1925 and 1926.

France possessed before the war 164 blastfurnaces, and obtained through the territorial changes after the war 68 furnaces situated in Lorraine. There are no exact pre- or post-war capacity figures available, but the Comité des Forges estimates the theoretical capacity of all blastfurnaces in existence on the present territory at about the double of those existing on the pre-war territory (*i.e.* excluding those in Lorraine). In this estimate are included furnaces damaged during the war which were under reconstruction at the end of 1926. The following statement, prepared from the statistics

¹ *Statistisches Jahrbuch.*

² *Stahl und Eisen*: « Ermittlungen des Vereins Deutscher Eisen und Stahl Industrieller ».

of the Comité des Forges, will give an idea of the progress which has been made in reconstruction and of the activity of the pig-iron industry since the end of 1921:

End of	<i>Number of Blastfurnaces.</i>			Total
	In Blast	Under reconstruction or repair	Idle	
1921	73	64	83	220
1922	116	48	55	219
1923	127	43	49	219
1924	133	48	39	220
1925	147	43	29	219
1926	154	30	33	217

At the end of 1913, 129 furnaces were blowing and 35 idle. Tables 2 and 6 of Annex I show that the French pig-iron production in 1926 was about 80 per cent bigger than that in 1913 on the former territory, and 115 per cent bigger than the average production in 1909-13 for the same territory.

The wrought- and cast-iron branches of the industry were particularly developed in the northern districts of France devastated during the war, and capacity is now less than in 1913, as it has not been considered worth while to reconstruct a number of the damaged works in view of the diminishing demand for their products. No estimates of the output capacity of the French raw-steel industry are available.

For the iron and steel industries of *Belgium* and *Luxemburg*, precise capacity figures are likewise lacking. The increase in the actual production both of pig iron and steel, however, would appear to be in general harmony with the expansion in output capacity. Of the 55 blastfurnaces in existence in Belgium, 52-53 were in blast in the second quarter, and all 55 in the greater part of the second half-year of 1926. Since March 1926, according to a statement of the General Board of the Mines, the iron and steel industry has worked at full capacity. Of the 45 blastfurnaces of Luxemburg, 33-37 on an average were in blast in 1925. The average proportion of active furnaces would appear to have been still higher in 1926, which has been an exceptionally good year for the Luxemburg industry.

The pre-war output capacity of *Italy* was very much greater for steel than for pig iron. Owing to the enlargement of the steel-works during the war, this difference has become still more accentuated. Only 12 coke blastfurnaces and 2 electric furnaces exist in Italy. There are no absolute or relative capacity figures available.

Such figures are likewise lacking for *Czechoslovakia*. For *Poland* the following figures have been submitted:

<i>Pig Iron</i> ¹ .	1913	1926
Blastfurnaces ready for use	34	24
Productive capacity (tons) . .	1,165,300	806,850

¹ Information supplied direct.

Raw Steel.

Martin furnaces ready for use . . .	69	54
Thomas converters » » » . . .	5	5
Electric furnaces » » » . . .	5	5
Aggregate productive capacity (tons)	1,714,000	1,483,000

The practical productive capacity (present Polish territory) has thus fallen by 30 per cent in the case of pig iron and by 13 per cent in the case of raw steel. The actual output of pig iron in 1926 represented less than 40 per cent and that of raw steel less than 54 per cent of the practical capacity.

The capacity of the rolling-mills is difficult to ascertain on account of the variety of the products and the character of the equipment, but is largely dependent upon that of the raw-steel works with which they generally are combined. Capacity figures are not available for any country.

An examination of the detailed tables of the actual output of finished and semi-finished iron and steel products of nine countries (Belgium, Czechoslovakia, France, Germany, Luxemburg, Poland, Sweden, the United Kingdom and the United States) given in Annex I (Tables 8-16) will explain why no attempt has been made to draw up a comparative statement. The systems of classification are too different to make it possible to summarise the various products according to a common scheme. Moreover, for certain countries pre-war figures are missing, or are not comparable with the post-war statistics for various reasons such as territorial changes and alterations in the classification of the products. Even articles or groups with more or less identical denominations are not strictly comparable from country to country.

The above reservations, however, do not seriously affect the value and interest of the tables as a basis for general comparisons of the range of production in the different countries and of the changes which have occurred in the period under review.

Germany is by far the biggest producer of finished steel in Europe. Its output of finished steel products in 1925 was almost double that of France and more than 40 per cent greater than that of the United Kingdom. Luxemburg, Belgium and Sweden produce in proportion more semi-finished steel for sale and export than the other countries here considered.

With regard to the composition of the output of finished products, the tables show that merchant steels are of the greatest relative importance in France, Belgium and Luxemburg, and plates and sheets and constructional steel in the United Kingdom and Germany, the last-mentioned country being, moreover, the most important rail producer in Europe. Plates and sheets form likewise the most outstanding group in the production of the steel mills in the United States and have increased in recent years more than any other group, a fact which presumably is due, at least in part, to the demand of the automobile industry.

The figures of the output of wrought iron in the United Kingdom illustrate the tendency for its substitution by steel. In 1913, the British ironworks produced 1,225,000 metric tons of puddled bars, scrap, ball and bushelling bars. By 1920

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The figures of the output of wrought iron in the United Kingdom illustrate the tendency for its substitution by steel. In 1913, the British ironworks produced 1,225,000 metric tons of puddled bars, scrap, ball and bushelling bars. By 1920

the output had dropped to less than one million and in 1925 to only 420,000 metric tons, whereas the British steel production remained practically unchanged.

III. LABOUR CONDITIONS.

The information available concerning the conditions of labour within the iron and steel industries of the various countries, more especially in regard to the number of hands, unemployment, hours of work, output per head, and wages, is incomplete and heterogeneous and does not lend itself readily to international comparisons. The main obstacle to an international comparison of the labour conditions of any particular industry or branch of industry arises from differences of classification and organisation. Thus only part, and a varying part, of the workmen classified as iron and steel workers are actually occupied in the heavy iron and steel industry proper.

The number of hands attached to a particular branch of the industry such as the blastfurnaces, the foundries and the rolling-mills, varies even over short periods according to the activity of the industry and a number of other factors. There are no complete figures available showing the increase or decrease since 1913 in the number of hands occupied within the different branches of the industry of the various countries. In recent years, France and Luxemburg have experienced a lack in the supply of domestic labour for their iron and steel industries and have had to employ foreign labour to a certain extent. In Belgium the conditions of employment have also been favourable, whereas in the United Kingdom the unemployment in 1924-25 has varied from 15 to 20 per cent. In Sweden, Poland and the Central European countries, the conditions of employment in the iron and steel industries have likewise been, and still are, far from satisfactory.

For Germany no separate unemployment figures for iron and steel workers are available, but the Reichsverband der Deutschen Industrie states that the unemployment in the branches here concerned is considerable and has increased since 1925 partly as a result of the "rationalisation" of the industry. In the opinion of the Reichsverband, it will not be possible in the future, even with increased production, to reabsorb within the iron and steel industry all the unemployed who were formerly occupied in that industry.

It follows from what has already been said that no comparison of the output per head can be made from country to country and, even in a single country, such calculations embracing the whole industry are extremely difficult, if not impossible, to make.

A fundamental change has taken place in the European iron and steel industry since before the war in regard to hours of work, inasmuch as the three-shift system has generally replaced the two-shift. It must be noted, however, on the one hand, that the eight-hour day was already in force before the war in certain regions, more

especially of the United Kingdom, and that, on the other hand, even now it is not generally applied, even in the restricted manner which a continuous running of the furnaces may make necessary.

From the information received with respect to wages, no general conclusions can be drawn. This information, as well as that regarding other conditions of labour, is summarised in Annex II.

IV. RAW MATERIALS USED.

The situation of the iron and steel industries of the various countries in regard to the supply of their various raw materials, *i.e.* iron ore, iron and steel scrap, coal and coke, presents great dissimilarities. Owing to the bulky character of these materials and the consequent importance of transport charges, such inequalities entail a far-reaching influence upon the competitive position of the industries.

The essential change, due to the war, in the geographical distribution of the iron-ore resources affects particularly France and Germany. Through the war and Luxemburg's withdrawal from the Customs Union with Germany, the German iron-ore industry lost the Lorraine-Luxemburg minette district, upon which it previously largely depended. The 1913 production of that district represented about 79 per cent of that of the whole Customs area. The iron-ore production in the present Polish Upper Silesia was relatively unimportant. As will be seen from the detailed iron-ore production table in Annex I (Table 1), the German output in recent years has remained somewhat below the pre-war output within the present frontiers. In spite of a very marked recovery in recent years, the French iron-ore production was, in 1925, still considerably below that of 1912 and 1913 within the present territory, though it exceeded the average for 1909-13. The output in the United Kingdom in 1925 had dropped to roughly two-thirds of the pre-war average, and that of Spain to less than one-half. The Luxemburg production roughly equalled and that of Sweden considerably exceeded the 1909-13 average.

On the whole, the production of iron ore in Europe has dropped more than that of pig iron, and in the United States the increase in the output over the pre-war average has been less marked for ore than for pig iron, the increase in 1925 being less than one-sixth for the former and roughly one-third for the latter. This phenomenon is no doubt due in part to the more successful extraction of metal from the ore, but also to the fact that the blastfurnaces during and after the war have become important consumers of scrap.

It is impossible to calculate for each country the average metal content of the ore produced, for it varies from district to district, and even between parts of the same district. In Great Britain, for instance, where it ranges from 22 to 23 per cent in Lincolnshire to 53 per cent in Cumberland, such an average would be of little value. In Germany the richest ores contain 41 per cent of metal, and the poorest 13.5 per cent.

The Reichsverband der deutschen Industrie calculates the average metal content of the ores produced in 1924 and 1925 at about 35 per cent. In France the average content of ore is 32 to 37 per cent in the Lorraine area, and 48 to 52 per cent in the areas of secondary importance. In Sweden the content varies from 40 to 70 per cent, but three-quarters of the ore produced in 1925 averaged from 60 to 70 per cent. The iron content of Czechoslovak ore is estimated at 34 per cent for deposits in Bohemia and 35 per cent for Slovakia. In this connection it is interesting to note that ores with a metal content of less than 45 per cent are not considered worth extracting in the United States of America. Because of these differences and of the absence of statistics on the average content of the quantities of ore mined in each country, the output figures are not comparable between countries.

The extent to which the countries with great iron and steel industries are dependent on foreign countries for their iron ore and scrap is shown in Table C, which gives the production, imports, exports and consumption of iron ore, and the foreign trade in scrap. For the reason just given as to the metal content of the ore, this table is subject to the reservations referred to above.

For France, estimates, based on available trade figures for the Saar Territory, are made for the imports and exports during 1923 and 1924 for the Customs area to which the 1925 trade statistics refer, that is for the whole area of France plus that of the Saar.

More detailed tables for the trade in iron ore and scrap of each particular country here concerned are given in Annex IV. Similar figures for the trade in coke will be found in Annex IV to the *Memorandum on Coal*.

The trade figures for iron ore in Table C are partly supplemented by those in Table D showing the imports, by country of origin, of ore into the chief pig-iron producing countries, *i.e.* the Belgo-Luxemburg Economic Union, France, Germany, the United Kingdom and the United States. This table gives a general idea of the changes in the currents of the ore imports since the war.

The radical change in Germany's position with regard to the supply of iron ore has already been mentioned. Even before the war Germany was the greatest ore importer, but it had then to supply ore for a much greater industrial area, including Lorraine, the Saar and Luxemburg. This fact, of course, has to be remembered when comparing the changes in the figures given in the consumption column of Table C. The sources of the German ore imports have changed considerably. In spite of the transfer of the mines of the formerly German part of Lorraine to France, German imports of French ore are now less than before the war. Whereas in 1913 one-third or 3.8 million tons of Germany's iron-ore imports came from France, in 1924 less than 6 per cent were purchased in that country. In 1925, however, the imports from France rose again to 10 per cent or 1.2 million tons, and in 1926 there would appear to have been a further increase.

The drop in the imports from France is partly due to the fact that French ore, before the war, played only a minor part in the supplies of the blastfurnaces situated within the present German frontiers. On the other hand, owing to the scarcity of good French coking coal, the blastfurnaces in Lorraine are largely dependent on imports of metallurgical coke from the Ruhr, but have been able to procure only part of their requirements from the German reparation deliveries.

Table C.

SHOWING PRODUCTION, TRADE AND CONSUMPTION OF IRON ORE AND TRADE IN SCRAP.
Metric tons (000's omitted).

Country	Year	IRON ORE					SCRAP			
		Production	Imports	Exports	Trade balance*	Consumption	Imports	Exports	Trade balance*	
Belgium	1913	151	7,085	725	+ 6,360	6,511	122	153	— 31	
	1923	4,197	6,512	728	+ 5,784	9,981	195	45	+ 150	
	1924	5,478	9,095	1,504	+ 7,591	13,069	111	102	+ 9	
	1925	6,953	8,887	1,792	+ 7,095	14,048	61	108	— 47	
Belgium and Luxemburg .	1923	675	833	101	+ 732	1,407	157	10	+ 147	
	1924	1,174	729	125	+ 604	1,778	116	1	+ 115	
	1925		826	82	+ 744		133	3	+ 130	
Czechoslovakia . .	1913	21,918	1,410	10,067	— 8,657	13,261	24	226	— 202	
	1923 ¹	23,349	534	7,118	— 6,584	16,765	189	633	— 444	
	1924 ¹	28,992	725	9,778	— 9,053	19,939	212	866	— 654	
	1925 ¹	35,741	1,238	9,227	— 7,989	27,752	65	1,306	— 1,241	
Germany	1909-13	30,749	11,030	2,657	+ 8,373	39,122	274	170	+ 104	
	1913 ²	35,941	14,024	2,613	+ 11,411	47,352	314	196	+ 118	
	1923	5,188	2,377	255	+ 2,122	7,310	174	381	— 207	
	1924	4,457	3,076	129	+ 2,947	7,404	44	397	— 353	
	1925	5,923	11,540	202	+ 11,338	17,261	249	286	— 37	
Italy	1913	603	8	10	— 2	601	326	7	+ 319	
	1923	341	5	85	— 80	261	434	—	+ 434	
	1924	238	79	83	— 4	234	538	—	+ 538	
	1925	513	309	—	+ 309	822	958	1	+ 957	
Poland	1923	454	668	15	+ 653	1,107	300	17	+ 283	
	1924	292	235	—	+ 235	527	152	4	+ 148	
	1925	212	259	27	+ 232	444	163	1	+ 162	
Spain	1913	10,789		8,907		1,882				
	1923	3,945		3,371		574				
	1924	4,813		3,827		986				
	1925	4,400		3,618		800 ³				
Sweden	1913	7,476	3	6,440	— 6,437	1,039	70	8	+ 62	
	1923	5,588	—	4,766	— 4,766	822	18	12	+ 6	
	1924	6,500	—	5,731	— 5,731	769	38	4	+ 34	
	1925	8,169	—	8,343	— 8,343	(— 174)	12	9	+ 3	
United Kingdom .	1913	16,253	7,561	5	+ 7,556	23,809	125	119	+ 6	
	1923	11,050	5,965	3	+ 5,962	17,012	215	118	+ 97	
	1924	11,228	6,022	2	+ 6,020	17,248	459	89	+ 370	
	1925	10,306	4,452	3	+ 4,449	14,755	91	112	— 21	
United States . . .	1913	62,972	2,280	1,241	+ 1,039	64,011	42	105	— 63	
	1923	70,461	2,812	1,135	+ 1,677	72,138	165	67	+ 98	
	1924	55,136	2,080	605	+ 1,475	56,611	68	100	— 32	
	1925	62,899	2,225	641	+ 1,584	64,483	102	84	+ 18	

* Export surplus —. Import surplus +.

¹ Including Saar.

² Pre-war territory including Luxemburg.

³ Estimate.

Table D.

IRON ORE: SOURCES OF SUPPLY.

Metric tons (000's omitted).

From:	Total Exports ¹			Imports into:					
				Belgium ²			France		
	1913	1924	1925	1913	1924	1925	1913	1924	1925 ³
Belgium . . .	725	1,504	1,792	—	—	—	21	330	719
France . . .	10,067	12,287	9,227 ³	4,754	8,355	8,211	—	—	—
Germany . . .	2,613	129	202	116	—	—	807	1	46
Luxemburg . . . ⁵	—	—	—	1,578	— ²	— ²	— ⁴	— ⁶	— ⁶
Spain . . .	8,907	3,827	3,618	153	120	138	458	195	201
Sweden ⁷ . . .	6,440	5,731	8,343	256	568	486	41	14	62
Algeria . . .	—	—	—	— ⁴	— ⁴	— ⁴	— ⁴	67	68
Cuba	1,413 ⁸	492 ³	—	—	—	—	—	—	—
Chile	—	965	1,234	— ⁴	— ⁴	— ⁴	— ⁴	— ⁴	— ⁴
Other countries	—	—	—	228	52	52	83	118	142
Total . . .				7,085	9,095	8,887	1,410	725	1,238

From:	Imports into:								
	Germany			United Kingdom			U. S. A.		
	1913	1924	1925	1913	1924	1925	1913	1924	1925
Belgium . . .	— ⁴	— ⁴	— ⁴	— ⁴	— ⁴	— ⁴	— ⁴	— ⁴	— ⁴
France . . .	3,811	180	1,201	332	515	222	—	—	—
Germany . . .	—	—	—	— ⁴	— ⁴	— ⁴	— ⁴	— ⁴	— ⁴
Luxemburg . . .	—	30	355	— ⁴	— ⁴	— ⁴	— ⁴	— ⁴	— ⁴
Spain	3,632	335	1,388	4,789	2,690	1,975	119	72	146
Sweden ⁷ . . .	4,867	2,103	7,455	869	1,072	877	279	323	151
Algeria	481	142	385	775	1,137	944	—	196	176
Cuba	—	—	—	—	—	—	1,523	290	555
Chile	— ⁴	— ⁴	— ⁴	— ⁴	— ⁴	— ⁴	—	1,163	1,132
Other countries	1,233	286	756	796	608	434	359	36	65
Total . . .	14,024	3,076	11,540	7,561	6,022	4,452	2,280	2,080	2,225

¹ Total exports of countries shown in first column.
² Belgium and Luxemburg in 1924 and 1925 constituted one Customs territory.
³ Including Saar.
⁴ Included in "Other countries".
⁵ Included in the exports of Germany.
⁶ Included in the exports of Belgium.
⁷ Imports from Norway representing mainly transit from Sweden are added to the figures for imports from Sweden.
⁸ Entirely for U. S. A.

The greater part — almost two-thirds — of the large German imports in 1925 were derived from Sweden, the iron ore exports of which country in that year, mainly on account of the increase in the German demand (from 4.9 million tons in 1913 to 7.4 million tons in 1925), greatly exceeded the 1913 volume. The increase in Germany's imports from Sweden is largely the outcome of contracts running to 1932 with Swedish mines based on fixed prices, and also of the diminution of German imports of Spanish ore. Contracts with Sweden existed before and during the war, but they were renewed, enlarged and extended by the Rhine-Westphalian iron and steel undertakings in 1923.

After Germany the largest iron-ore importers are the Belgo-Luxemburg Economic Union and the United Kingdom. As in 1913, almost the whole of the ore import of Belgium and Luxemburg comes from Lorraine. The setback in the British pig-iron industry with the consequent curtailment in its ore imports from Spain would appear to be the main cause of the depression in the iron-ore production of that country. In 1925 Sweden had the largest net exports of all iron-ore producing countries.

The results obtained by adding net imports to or subtracting net exports from production, constitute of course but a very rough measure of ore consumption. Reservations have been made above in regard to the comparability of different ores. Moreover, stocks which are not taken into account may falsify the results: thus in Sweden, in 1925, the exports were greater than the production. The actual ore consumption of the blastfurnaces in the United States and in Sweden is known and is shown below for 1923-25:

	U. S. A.	Sweden
	Metric tons (000's omitted)	
1923	73,469	404
1924	56,566	682
1925	66,497	608

It will be noted that the figures for actual ore consumption in the United States are in good agreement with those shown in Table C. This is probably true also in the case of the other principal ore-consuming countries, whereas in Sweden, where only a minor part of the output is consumed within the country, the figures show very great discrepancies.

The great iron and steel manufacturing countries are also very differently placed as regards the supply of coke for their blastfurnaces. While the collieries of the United States and the United Kingdom can easily satisfy the needs of their iron-works, and the German industry itself converts in its coke ovens all the coal it needs (the production of metallurgical coke exceeds consumption in Germany), Italy, on the other hand, possessed no good coal before the annexation of Triest and Istria and these coal-fields only yield about 150,000 tons a year. Italy is accordingly obliged to import about ten million tons of coal yearly. Her iron and steel industry therefore is even less favourably situated in this respect than in respect of iron ore. The return of Alsace-Lorraine to France has simultaneously increased that country's iron-ore resources and her coke requirements. In 1925, although there was an advance of about 500,000 tons in the manufacture of metallurgical coke in French ovens, and French

coke production was far higher than in 1913, coke directly imported or derived from foreign coal represented more than three-quarters of the consumption of the blast-furnaces. According to a report of the Comité des Forges, the quantities of coke and coking coal received from Germany in 1924 in respect of the deliveries in kind were 3,290,272 tons and 876,016 tons respectively.

Owing to the absence of national coal resources, the Luxemburg iron and steel industry is entirely dependent on foreign imports of coke and coal. As before the war, practically the whole of these imports came from the Ruhr, the Belgian coal and coke production being far from sufficient even for its own industry. In the Liège district, in 1925, according to information submitted by the General Board of the Belgian Mines, about 70 per cent of the coke production of the region was from foreign coal. In addition, considerable quantities of coke were imported, so that over three-quarters of the total fuel consumed is of foreign origin.

As mentioned in a previous section, scrap is now used to a much greater extent as raw material than before the war. Though the blastfurnace has become an important scrap consumer, scrap represents — as is emphasised in the observations submitted from Italy — a less suitable and economic raw material for pig iron than ore, and is used mainly as substitute for pig iron in the steel-works.

The *Reichsverband der Deutschen Industrie* estimates the scrap consumption in Germany in 1925 at 6.5 million tons as a minimum compared with 5.6 million tons in 1913 within the present frontiers. In France, according to the Comité des Forges, the scrap consumption of the steel-works alone rose from 1,474,000 tons in 1913 (present territory) to 2,848,000 in 1924 and 2,617,000 in 1925. There was likewise an increase in the scrap consumption of the Swedish steel-works in spite of a drop in the steel production of about 30 per cent in 1925 compared with 1913. According to estimates submitted from Poland, the scrap consumption of the steel-works situated within its present frontiers dropped from 942,000 tons in 1913 to 607,000 tons in 1925. The proportion of the scrap consumed to the raw steel produced, however, rose from 56.6 to 77.5 per cent. The corresponding proportion in German steel manufacture in 1925 is stated as 47 per cent and in the United Kingdom it rose from about 30 per cent in 1913 to roughly 50 per cent in 1925. In Czechoslovakia the proportion is said to be about 30 per cent. In Italy, where, even before the war, about half of the steel was produced from scrap, the post-war expansion in the steel output has been based almost exclusively on this raw material. Whereas the consumption of pig iron in the steel manufacture only rose from 482,000 tons in 1913 to 500,000 tons in 1925, that of scrap increased from 516,000 to 1,492,000 tons in the same period.

As regards the scrap trade (see Table C), a rapid and steady increase in the demand from Italy may be noted and also a marked increase in France's exports balance, due to the utilisation of old metal found on the battlefields and in the devastated regions, and also to the liquidation of American and British stocks. The increase in the German scrap exports in post-war as compared with pre-war years is mainly the outcome of the Geneva Agreement, under which Germany has undertaken to deliver up to June 15th, 1927, certain quantities of scrap to Polish Upper Silesia.

V. CUSTOMS TARIFFS.

In Table 1 of Annex III are shown the rates of Customs import duties in 1913 and 1926 in certain countries on a number of products of the iron and steel industry.

The articles chosen, although limited in number, are believed to be fairly typical and representative of the industry. It is difficult to choose a typical article equally applicable in all countries, because (a) the determining factor in Customs classifications differs from country to country (*e.g.* weight, diameter, thickness, content, value, etc.) and (b), when the determining factor is of the same kind in any two countries, the range of the specifications never, or very seldom, coincides (*e.g.* although countries A and B may both show rails, the one will make the dividing line at 15 kilograms and the other at 30 kilograms). This applies particularly to specific-rate tariffs and consequently particularly to Europe.

Apart from these difficulties, comparisons between specific and *ad valorem* rates cannot be made directly, and in certain countries the classification has been changed since the war.

For the Argentine and Brazil, the specific-rate equivalents have been shown in the table, because their so-called *ad valorem* rates are really specific in effect.

In view of the reservations made above, it is difficult to draw definite conclusions from the table. It would appear, however, from a general survey, that, although in many cases the post-war show an increase in rates over the pre-war years, nevertheless the *ad valorem* incidence of the tariffs has decreased, at any rate in Europe, when prices are taken into account. Thus the conventional rates of Czechoslovakia are lower in nearly all instances, and those of France in all instances so far as the most-favoured-nation countries are concerned. All the Austrian rates in 1925 were lower. In the Netherlands, the United Kingdom and Denmark, there are no duties. In Sweden there has been no change and in Germany but little. The Italian, Belgian and Swiss rates are higher, but if prices are taken into consideration the *ad valorem* rates work out for Italy at any rate probably at about the pre-war level. The same is true of Hungary except in the case of tool steel, where a high protective tariff has been imposed.

Spain and the Kingdom of the Serbs, Croats and Slovenes are the only European countries which can be said to show a decided increase in all cases. In Roumania only the gold rates for pig iron remain below the pre-war level; those for all other iron and steel products are higher than before the war.

In three of the countries further distant from the centre of the European industry — Canada, China and Brazil — rates have been but slightly modified, while in Japan the increase in specific rates has probably resulted in no *ad valorem* rise. In Australia and India the new duties are appreciably higher than the old, and in the Argentine an automatic rise has resulted from the raising of the valuation tariff by 60 per cent.

Owing to the conversion of the American tariff from an *ad valorem* to a specific

basis, comparison is rendered difficult. But rates would appear in balance to be higher now than they were.

In regard to the degree of protection of the iron and steel industries of the various countries, the National Federation of (British) Iron and Steel Manufacturers remarks that the depreciation of certain currencies has operated in exactly the same way as a Customs tariff.

VI. IMPORTS AND EXPORTS.

In Annex IV will be found a series of detailed tables showing the imports and exports by the principal producing and consuming countries of iron and steel products, including pig iron and raw steel. Owing to differences in the classification and arrangement of the trade statistics, the figures do not include identical articles for all countries and are not strictly comparable. But for each individual country they have as far as possible been rendered comparable for exports and for imports and from year to year. The pre-war figures refer, of course, to the then existing territorial divisions. The post-war figures for Germany and France are affected by the transfer of Alsace-Lorraine, those for Belgium and Poland are similarly affected by the inclusion in 1922 of Luxemburg within the former and of Upper Silesia within the latter Customs area.

The movement of the trade, like that of the production of the various countries has, of course, been influenced by a number of factors more or less temporary in character, such as exchange fluctuations, labour disputes (particularly in Belgium in 1925), the occupation of the Ruhr, etc., which should be borne in mind.

The following Table E, which is a summary of Table 2 of Annex III, shows the net imports or exports in 1913 and 1923-25 of (a) pig iron, (b) raw steel, (c) cast iron and steel products and (d) other iron and steel products for Belgium-Luxemburg, Czechoslovakia, France, Germany, Italy, Japan, Poland, Spain, Sweden, the United Kingdom and the United States. The figures for France for 1923 and 1924 have been adjusted in accordance with available data relative to the trade of the Saar with France and Germany in order to make them directly comparable with those of 1925 when the Saar was included in the French Customs territory.

The picture of the general situation displayed by the table is very similar to that afforded by the production statements above, except in the case of the United States of America. In that country the increase in the production in 1925 was accompanied by a fall in the export surplus to about one-third of the 1913 amount, domestic consumption having grown. But even in 1913 the exports were smaller in proportion to production than in any of the other important iron and steel countries. Parallel with the drop in the exports of finished iron and steel there has been an increase in the net imports of pig iron and raw steel, of which there was an export surplus in 1913.

As regards Europe, the table shows a steady increase in recent years in the export balances of France and the Belgo-Luxemburg Economic Union, though the latter suffered a slight decline in 1925 owing to the Charleroi strike. France is the greatest exporter of pig iron and raw steel. The Belgo-Luxemburg Economic Union takes the second place after France as an exporter of raw steel and is the leading exporter

Table E.

SHOWING SURPLUS EXPORTS OR IMPORTS OF PIG IRON, RAW STEEL AND STEEL PRODUCTS.

(-) = export surplus. (+) = import surplus.

Metric tons (000's omitted).

Country	Year	Pig iron	Raw steel ingots, blooms, billets, slabs	Cast-iron and steel products	Other iron and steel products	Total iron and steel
Belgium	1913	+ 562	- 77	- 17	- 1,155	- 687
	1923	+ 249	- 335	- 19	- 1,874	- 1,979
Belgium and Luxemburg }	1924	+ 197	- 647	- 25	- 2,267	- 2,742
	1925	+ 228	- 855	- 23	- 1,924	- 2,574
Czechoslovakia	1923	- 168	} 1	} 1	- 349	- 517
	1924	- 18			- 281	- 299
	1925	- 21			- 374	- 395
France	1913	- 63	- 302	} 1	- 93	- 458
	1923 ²	- 412	- 793		- 697	- 1,902
	1924 ²	- 590	- 1,220		- 869	- 2,679
	1925 ²	- 659	- 2,068		- 983	- 3,710
Germany	1913 ³	- 730	- 690	- 193	- 4,391	- 6,004
	1923	+ 221	+ 236	- 118	+ 92	+ 431
	1924	+ 197	+ 115	- 95	- 485	- 268
	1925	- 19	+ 106	- 51	- 2,099	- 2,063
Italy	1913	+ 221	+ 7	+ 31	+ 232	+ 491
	1923	+ 132	+ 5	+ 3	+ 74	+ 214
	1924	+ 197	+ 30	+ 4	+ 140	+ 371
	1925	+ 264	+ 150	+ 4	+ 359	+ 777
Japan	1923	+ 366	} 1	} 1	+ 604	+ 970
	1924	+ 457			+ 924	+ 1,381
	1925	+ 316			+ 418	+ 734
Poland	1923	+ 93	- 96	- 27	- 132	- 162
	1924	+ 10	- 16	+ 3	- 70	- 73
	1925	+ 12	- 12	+ 2	- 50	- 48
Spain	1913		+ 95		+ 80	+ 175
	1923		+ 184		+ 47	+ 231
	1924		+ 179		+ 46	+ 225
	1925		+ 213		+ 56	+ 269
Sweden	1913	- 95	- 15	+ 7	- 121	- 224
	1923	- 73	- 5	+ 12	+ 53	- 13
	1924	- 48	- 7	+ 8	+ 101	+ 54
	1925	- 29	- 5	+ 8	+ 56	+ 30
United Kingdom ⁴	1913	- 923	+ 518	- 216	- 2,161	- 2,782
	1923	- 794	+ 414	- 69	- 2,595	- 3,044
	1924	- 295	+ 708	- 52	- 1,808	- 1,447
	1925	- 278	+ 658	- 53	- 1,354	- 1,027
United States	1913	- 135	- 213	1	- 2,350	- 2,698
	1923	+ 445	+ 16	- 28	- 1,819	- 1,386
	1924	+ 235	+ 35	- 29	- 1,472	- 1,231
	1925	+ 409	+ 23	- 33	- 1,329	- 930

¹ Not shown separately.

² The official trade statistics of France include the Saar in 1925. In the above table the figures for 1923 and 1924 have been adjusted in accordance with available figures for the iron and steel trade of France and Germany with the Saar in order to make them as far as possible comparable with the figures for 1925.

³ Pre-war Customs territory, including Luxemburg.

⁴ 1913 including Ireland; 1923-25 excluding Irish Free State.

of finished iron and steel, the slight decline in 1925 being due, as already mentioned, to temporary causes. Indeed, the combined net exports of iron and steel of France, Belgium and Luxemburg in 1925, after deducting reciprocal trade, was considerably bigger than the aggregate net exports of all other iron and steel exporting countries together.

The most striking feature of Table E, however, is the recovery, particularly in 1925, in the steel exports of Germany, which in 1923 were less than the imports.

On the other hand, there has been a steady decline since 1923 in the export balance of the United Kingdom, Poland and Sweden. Also Czechoslovakia's export surplus has dropped, mainly on account of the shrinkage in its pig iron exports. The net exports of iron and steel from the United Kingdom were bigger in 1923 than before the war. The subsequent falling-off is principally due to the marked increase in the imports of finished iron and steel, which in 1923 were abnormally low. The National Federation of (British) Iron and Steel Manufacturers remarks that the contraction of the imports in 1923 was largely due to the Ruhr occupation, which also was responsible for the expansion of the exports.

The main importing countries included in the table, namely Italy, Spain and Japan, have all greatly increased their imports in recent years; but, whereas in Italy and Japan the imports of finished iron and steel have increased in the same proportion as or more than those of pig iron and raw steel, in the case of Spain only the imports of raw products have grown, the net imports of finished iron and steel having dropped 30 to 40 per cent as compared with 1913.

In order to gauge the relative competitive power of the various countries, it is desirable to show their exports distinguished by country of destination. This is done in Table F below for the five great producing countries — Belgium, France, Germany, the United Kingdom and the United States of America — for the years 1913, 1924 and 1925.

This Table shows that the export markets of the leading continental countries are mainly European, whereas the European countries are of secondary importance for the British exports, of which in recent years as before the war only about one-fourth went to Europe. The Far East remains the principal market for the British products, and it is of interest to note that exports to Asia have declined much less than those to any of the other markets save Africa. All European countries are buying less from the United Kingdom, as too are the principal South-American countries, though the United Kingdom still remains their main source of supply. British exports to Australia and India have contracted in the face of the growing competition of the domestic industries.

Both the Belgo-Luxemburg Union and the United States have increased their exports to Asia, and Germany is now regaining her pre-war position in that market and exported much more iron and steel to the United States in 1925 than in 1913. Belgium has, moreover, considerably increased her exports to the United States of America and succeeded with France in obtaining an important position in the British and German domestic markets. About three-fourths of the French post-war exports to Belgium were in transit. The French trade statistics, therefore, do not render it possible to ascertain the ultimate destination of her exports, more especially to overseas markets.

Table F.
EXPORTS OF IRON AND STEEL PRODUCTS.
(000's omitted.)

Countries of destination	From Germany			From Belgium and, in 1924-1925, from Luxemburg			From France			From United Kingdom			From United States		
	1913 ¹	1924	1925	1913	1924	1925	1913	1924	1925	1913	1924	1925	1913	1924	1925
	Metric tons			Metric tons			Metric tons			Long tons			Long tons		
<i>Europe</i>	4,331	604	1,462	671	1,322	1,709	382	2,337	3,189	1,213	851	720	346	81	32
Scandinavian Countries . .	432	206	201	—	—	—	—	—	—	270	181	147	3	1	1
Russia, Finland	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Baltic States	160	13	61	—	—	—	—	—	—	—	—	—	—	—	—
United Kingd.	1,205	125	384	434	1,127	1,177	17	516	709	—	—	—	270	55	51
Netherlands . .	600	114	561	108	113	129	—	—	—	146	77	102	11	2	3
Belgium	646	7	91	—	—	—	289	993	1,210	126	166	112	23	10	5
Germany	—	—	—	11	414	183	17	360	647	199	89	76	6	1	1
Saar	—	3	2	—	—	—	—	196	—	—	—	—	—	—	—
France	225	—	1	66	97	77	—	—	—	203	123	73	3	3	9
Spain and Portugal . .	61	2	19	31	57	26	—	—	—	82	84	75	7	4	2
Italy	290	18	36	21	14	117	4	113	393	144	93	106	23	5	10
Switzerland . .	337	46	46	—	—	—	55	159	230	9	7	7	—	—	—
Central Europe ²	243	56	45	—	—	—	—	—	—	—	—	—	—	—	—
Balkan States	132	14	15	—	—	—	—	—	—	34	31	22	—	—	—
<i>North America . .</i>	54	18	145	—	63	134	—	—	—	364	255	266	1,431	500	589
Canada	—	—	—	—	—	—	—	—	—	187	118	102	1,431	500	589
United States	54	18	145	—	63	134	—	—	—	177	137	164	—	—	—
<i>Caribbean . . .</i>	—	—	—	—	—	—	—	—	—	11	14	13	211	273	240
Mexico	—	—	—	—	—	—	—	—	—	—	—	—	101	108	96
Cuba and West Indies	—	—	—	—	—	—	—	—	—	11	14	13	110	165	144
<i>South America . .</i>	484	158	³	239	245	235	—	—	—	572	381	406	217	154	178
Brazil	—	—	—	99	64	66	—	—	—	118	66	55	72	68	46
Argentina	484	158	³	120	154	139	—	—	—	359	230	272	84	55	88
Chile	—	—	—	20	27	30	—	—	—	60	43	34	61	31	44
Other	—	—	—	—	—	—	—	—	—	35	42	45	—	—	—
<i>Asia</i>	527	237	329	250	524	343	—	—	—	1,405	1,197	1,122	262	417	398
India	213	71	125	139	244	162	—	—	—	896	599	633	29	24	27
China	—	—	—	54	139	57	—	—	—	86	104	74	38	54	195
Japan	314	142	142	57	141	124	—	—	—	238	239	135	151	288	127
Other	—	24	62	—	—	—	—	—	—	185	255	280	44	51	49
<i>Africa</i>	—	24	53	84	82	89	80	77	108	444	372	443	32	31	24
Egypt	—	—	—	39	54	64	—	—	—	63	44	43	—	—	—
South Africa	—	24	53	45	28	25	—	—	—	261	207	218	32	31	24
Other	—	—	—	—	—	—	80	77	108	120	121	182	—	—	—
<i>Oceania</i>	—	—	—	43	—	3	—	—	—	721	591	585	164	26	24
Australia	—	—	—	43	—	3	—	—	—	567	454	432	152	23	22
New Zealand . . .	—	—	—	—	—	—	—	—	—	154	137	153	12	3	2
<i>Unallocated</i> ⁴ . .	472	288	615 ⁵	—	59	18	69	174	352	—	—	—	—	43	33
<i>Other countries . .</i>	441	229	659 ⁵	288	516	581	99	230	226	239	190	176	245	186	110
<i>Total</i>	6,309	1,558	3,263	1,575	3,311	3,112	630	2,818	3,875	4,969	3,851	3,731	2,908	1,711	1,678
										Equivalent in metric tons:					
										5,049	3,913	3,791	2,955	1,738	1,705

¹ Including Luxemburg.

² Including Austria-Hungary, Czechoslovakia and Poland.

³ Included in other countries.

⁴ The group "unallocated" in the table comprises the iron and steel products for which specification by countries of destination is not given in the trade statistics. The greater portion of the "unallocated" products was probably exported to the countries specified in the table, whereas the sums shown under "other countries" were not consigned to any of the countries specified.

⁵ The increase in this item is mainly due to change of classification making a separation according to countries of destination impossible in many cases

Table G.

EXPORTS OF IRON AND STEEL PRODUCTS *.
Metric tons (000's omitted).

Articles and Years	Belgium ¹		France ²		Germany ³		United Kingd.		United States	
	Quant.	%	Quant.	%	Quant.	%	Quant.	%	Quant.	%
Pig iron and ferro-alloys:										
1913.	17	1	113	18	856	14	1,142	23	292	10
1924.	130	4	784	28	67	4	610	16	46	3
1925.	97	3	710	18	226	7	569	15	39	2
Blooms, billets, ingots, etc.:										
1913.	159	10	321	51	701	11	4	—	235	8
1924.	731	22	1,319	47	47	3	11	—	5	—
1925.	923	30	2,096	54	108	3	5	—	4	—
Construction iron and steel bars, angles, girders, beams, joists, etc.:										
1913.	745	47	—	—	590	9	522	10	631	21
1924.	1,462	44	—	—	56	4	395	10	288	16
1925.	1,313	42	—	—	119	4	343	9	307	18
Plates and sheets (including tin-plate), hoops and strips:										
1913.	202	13	14	2	1,837	29	1,603	32	644	22
1924.	258	8	74	2	441	28	1,777	45	657	38
1925.	275	9	229	6	960	30	1,663	44	692	41
Wire and rods:										
1913.	68	4	6	1	462	7	119	2	306	10
1924.	103	3	110	4	175	11	130	3	168	10
1925.	133	4	163	4	340	10	120	3	145	9
Rails, sleepers and fishplates:										
1913.	165	11	76	12	636	10	635	13	460	16
1924.	226	7	292	10	89	6	280	7	210	12
1925.	171	5	241	6	404	12	317	8	154	9
Tubes and pipes, etc.:										
1913.	6		5		409	7	406	8	287	10
1924.	17	1	19	1	123	8	256	7	245	14
1925.	21	1	70	2	310	10	291	8	276	16
Other iron and steel products										
1913.	213	14	95	15	818	13	618	12	100	3
1924.	384	11	220	8	560	36	456	12	119	7
1925.	179	6	366	10	796	24	483	13	88	5
Total:										
1913.	1,575	100	630	100	6,309	100	5,049	100	2,955	100
1924.	3,311	100	2,818	100	1,558	100	3,915	100	1,738	100
1925.	3,112	100	3,875	100	3,263	100	3,791	100	1,705	100

* Excluding ore and scrap.

¹ Including Luxemburg in 1924 and 1925.

² Including Saar in 1925.

³ In 1913 old territory including Luxemburg.

Owing to the differences from country to country of the classification adopted in the trade statistics, no statement of the trade in iron and steel products divided according to groups of products can be accepted without serious reservations. An attempt has been made, however, in Table G to divide these products into seven main groups. The result is not wholly satisfactory as, quite apart from the comparability of the seven groups themselves, in certain cases a very important share of the total exports fails to fall within the framework of this classification and has to be lumped under " Other iron and steel products ". Full details will, however, be found in the individual tables of Annex IV.

It would be interesting to take stock of the trade in iron and steel products at various stages of manufacture between the great steel-producing countries and show the movement of this trade by groups of products; but such a table would be very difficult to draw up owing to the classification of the various Customs statistics, which differentiate between the semi-finished product and the finished product in different ways.

The percentages which the exports of each category of product form of each country's total exports of iron and steel show the main changes which have taken place since 1913 in the relative composition of these exports.

The most striking fact brought out by the table is the drop in the absolute and relative importance of the crude iron and steel (pig iron, ingots, blooms, billets, etc.) in the exports of Germany, the United Kingdom and the United States, and the increase of these articles in the exports of the Belgo-Luxemburg Union and France. Moreover, the exports by the three first-mentioned countries of construction steel, bars, angles, etc. have greatly diminished. The exports of permanent railway material (rails, sleepers and fishplates) from the United Kingdom and the United States show a similar, though even more marked, decline in recent as compared with pre-war years, whereas Germany in 1925 regained her former position. In the exports of plates and sheets, the United Kingdom and the United States have maintained or even strengthened their pre-war position — the former alone supplying about one-half of the quantity entering into the world's trade — with the result that the relative importance of this group in the exports of these countries has greatly increased. This group of products has likewise increased in relative importance in France's steel exports as well as in those of Germany in spite of the drop, in the case of Germany, in the absolute figures.

VII. CONSUMPTION.

In order to estimate even roughly the consumption of iron and steel from the production and trade statistics certain adjustments have to be made. It is important to avoid double-counting the pig iron, but at the same time pig iron cannot be ignored altogether, for the consumption of raw steel does not constitute an accurate index of

the total consumption of the products of the iron and steel industry owing to the fact that wrought and cast iron have in recent years been replaced to a considerable extent by the cheaper grades of finished steel. To the production of raw steel, therefore, must be added that part of the pig iron produced which was not used for the manufacture of steel. By combining the import or export balance of raw steel and semi-finished and finished iron and steel (as shown in Table E above)¹ with the sum thus obtained a figure for total consumption can be calculated. This consumption figure, although it fails to take into account on the one hand material wasted in the process of manufacture and on the other hand imports and exports of such finished products as machinery, etc., affords nevertheless a certain measure of the changes in consumption from one period to another.

Table H below shows the production, imports or exports, total consumption and consumption per head of iron and steel during the years 1913, 1923 and 1925, in Belgium, Czechoslovakia, France, Germany, Japan, Poland, Sweden, the United Kingdom and the United States of America.

The figures for total consumption in each country are necessarily of but limited interest owing to the territorial changes which have taken place, and more attention should be paid to those showing consumption per head, which afford a sort of rough index of the degree of industrialisation of the various countries. While the aggregate consumption of iron and steel of the United States shown in the table rose from approximately 36 million tons in 1913 to about 54 million tons in 1925, or by some 50 per cent, the aggregate consumption of the United Kingdom, Belgium, Luxemburg, Germany, the Saar, France and Italy (excluding the estimated production in Polish Upper Silesia), which happened in 1913 to be exactly the same as that of the United States of America, dropped to roughly 34 million tons in 1925 or by some 5 per cent.

The changes which have taken place in production and consumption of this group of European countries may be summarised as follows:

	1913	1925
	metric tons (000,000's)	
Aggregate production of raw steel	33.7	34.9
Aggregate production of pig iron not used as raw material for steel ²	10.8	7.2
	<hr/>	
Total production	44.5	42.1
<i>Less</i> aggregate net exports of iron and steel, excluding pig iron .	— 8.5	— 8.1
	<hr/>	
Consumption	36.—	34.—

¹ The imports and exports of pig iron are excluded from this calculation, the former because they are wholly or mainly included in the raw-steel production and the latter because they are wholly or mainly excluded from the net production of iron and steel as calculated above.

² The aggregate pig iron production of the countries in question was roughly 37.1 million tons in 1913 (excluding estimated production in the present Polish Upper Silesia) and 31.8 million tons in 1925. The portion representing pig iron not used as raw material for steel thus dropped from about 29 per cent of total pig iron production in 1913 to roughly 22-23 per cent in 1925.

Table H.
CONSUMPTION OF IRON AND STEEL.

Countries	Years	Production ¹	Surplus ² Imp. + or exports —	Consumption	Consumption per head	Population
		Metric tons (000's omitted)			Kg.	(000's omitted)
Belgium	1913	2,700	— 1,249	1,451	190	7,638
Belgium & Luxemburg	1923	3,675	— 2,228	1,447	182	7,937
	1924	4,975	— 2,939	2,036	254	8,005
	1925	4,860	— 2,802	2,058	255	8,073
Czechoslovakia . . .	1923	1,425	— 349	1,076	77	13,972
	1924	1,650	— 281	1,369	97	14,108
	1925	1,850 ³	— 374	1,476	104	14,244
France Including Saar .	1913	6,400	— 395	6,005	151	39,790
	1923	7,850	— 960	6,890	170	40,473
	1924	10,650	— 1,395	9,255	228	40,633
	1925	11,350	— 3,051	8,299	203	40,793
Germany	1913 ⁴	22,806	— 5,274	17,532	261 ⁵	67,225
	1923	7,500	+ 210	7,710	125	61,718
	1924	11,265	— 465	10,800	174	62,107
	1925	14,398	— 2,044	12,354	197 ⁵	62,572
Italy	1913	1,070	+ 270	1,340	38	35,598
	1923	1,285	+ 82	1,367	34	39,657
	1924	1,438	+ 174	1,612	40	40,103
	1925	1,942	+ 513	2,455	61	40,548
Japan ⁶	1923	1,125	+ 604	1,729	30	58,482
	1924	1,275	+ 924	2,199	37	59,139
	1925	1,400	+ 418	1,818	30	59,737
Poland	1923	1,175	— 255	920	32	28,515
	1924	740	— 83	657	23	28,882
	1925	875	— 60	815	28	29,249
Sweden	1913	980	— 129	851	151	5,638
	1923	420	+ 62	482	80	6,018
	1924	700	+ 102	802	133	6,036
	1925	660	+ 59	719	119	6,054
United Kingdom ⁷ .	1913	12,700	— 1,859	10,841	236	45,862
	1923	11,525	— 2,250	9,275	207	44,738
	1924	11,250	— 1,152	10,098	224	45,049
	1925	9,800	— 749	9,051	200	45,359
United States . . .	1913	38,425	— 2,563	35,862	372	96,512
	1923	54,150	— 1,831	52,319	468	111,693
	1924	45,500	— 1,461	44,039	387	113,727
	1925	55,350	— 1,339	54,011	468	115,378

¹ Production of raw steel (ingots and castings) plus that part of pig iron production which is not used as raw material for steel (for the steel figures, see Table 3 of Annex I).

² Net imports or exports of iron and steel including raw steel, but excluding pig iron and scrap.

³ Estimate.

⁴ Pre-war Customs area including Luxemburg.

⁵ Calculated on the basis of a more restricted number of articles imported and exported as proposed by the *Fachgruppe der Eisen schaffenden Industrie*, the consumption figures were 262 kg. per head in 1913 and 206 kg. per head in 1925.

⁶ Information regarding the composition of the pig iron production not available; the quantities of pig iron included in the production column estimated on the assumption that the quantities not used as raw material for steel constitute about 30 per cent of the pig iron produced.

⁷ 1913 including Ireland; 1923-1925 excluding the Irish Free State.

It will be noted that the raw-steel production has actually increased and that aggregate net exports of the iron and steel products here concerned (less the net imports of such products into Italy) has slightly dropped in 1925 as compared with 1913. The fall in the consumption, therefore, was entirely due to the decline in the output of pig iron not converted into steel, that is, in the output of finished iron products.

The figures for consumption per head of population offer a similar, though rather less startling, picture of the developments of the iron and steel industry in the United States. The iron and steel consumption *per capita*, as calculated in Table H, increased in that country from 372 kg. in 1913 to 468 kg. in 1925, *i.e.* by a little over 23 per cent, while in the group of European countries mentioned above it has fallen from 184 to 172 kg. or by between 6 and 7 per cent. In this connection it should be remarked that the population of the United States increased much more rapidly during the years under review than that of these European countries. Taking the European production countries individually, it will be found that the *per capita* consumption has fallen as compared with the last pre-war year in Germany, the United Kingdom, Sweden and, in recent years, in Poland. The heavy drop in the German figures is, of course, in part explained by the loss of important iron and steel production districts. But, the recovery in German consumption since 1923 is striking. On the other hand, the British figures of the consumption per head are influenced by the fact that in 1913 the population of the whole of Ireland is included, while the post-war figures exclude the Irish Free State, where no doubt the demand for iron and steel is relatively low.

In Belgium, France, Italy, and, in recent years, Czechoslovakia, the iron and steel consumption per head of the population has increased relatively rapidly. The drop in the Belgo-Luxemburg consumption figure in 1925 was due to the extended strike in the Charleroi district.

VIII. PRICES.

In view of the striking contrast between the conditions of the industry in America and Europe which has been emphasised in preceding sections, a study of comparative price movements in these two continents would be of special interest. Unfortunately, it is almost impossible to make exact price comparisons for iron and steel. On account of integration of the production, a very great portion of the pig-iron output goes directly to the steel-works and of the raw steel to the rolling-mills of the same or associated undertakings. Only a fraction of the raw product therefore appears on the market, and this mainly as special qualities.

Moreover, apart from the difficulty of selecting internationally comparable products and qualities, emphasised in the observations submitted by the producers' associations, the instability of the exchanges in recent years precludes all possibility of exact measurements. Prices, too, are often calculated on different bases even within each individual

country, transport charges being sometimes taken into account and sometimes not. Lastly, the real prices are often different from the base prices (*Richtpreise*), and the export prices from those applied to the home market. From such price statements as exist, however, certain general conclusions can be drawn.

Whereas the United States iron and steel prices in 1925 appeared to be at about the same level as the general price index for that country, the European prices at the end of that year — after an uninterrupted fall since the beginning of 1923 — lay much below the general level of wholesale prices in the various countries, except perhaps in Germany.

There were, moreover, great differences in the relative levels of the iron and steel prices in the different European countries. By the end of 1925, they would appear on an average to have been about 20-25 per cent above the prices ruling at the end of 1913 in the United Kingdom and Germany, whereas in France and Belgium, measured in gold according to the dollar exchange rate, they were actually below the 1913 quotations.

In 1926 the conditions did not change substantially, although there was a certain improvement in European iron and steel prices during the second half of the year, consequent upon the British coal conflict. On the other hand, there was a much bigger increase in the prices of coal and coke, which, as emphasised above, play a preponderating rôle as raw material of the industry.

IX. ORGANISATION OF THE INDUSTRY: AGREEMENTS. SELLING AND PURCHASING ORGANISATIONS.

After what was said in the first part of this memorandum as to the dimensions of the establishments and plant and the amount of capital invested in iron and steel works, there is no need of statistics to show that the industry, forced as it is to adopt large-scale production, is generally conducted in large undertakings, integration among these being common on account of the technical and economic advantages of such combination.

Indeed, an advanced stage of business concentration had been reached before the war in the iron and steel industry of a number of countries which took varied forms. It took the form "sometimes of a combine which by a policy of integration promoted the improvement of the processes of distribution and endeavoured to reduce the cost of production; sometimes of a rigorously disciplined cartel, where each member, dependent on the others for an even balance of production and consumption, is subjected to a severe control and turns over the commercial side of its undertaking to a selling organisation; and sometimes again of the mere *comptoir* (selling syndicate) seeking the advantages of co-operative selling" ¹.

DE ROUSIERS: "Les grandes industries modernes — La Métallurgie", page 282.

Examples of these three types of combination are afforded by the United States, Germany and France. The lesser degree of commercial concentration in Great Britain was due perhaps to the elasticity of a market offering better facilities for international trade than that of the other great iron and steel producing countries.

It should be observed, however, that even before the war the British rail makers had participated in the international agreements concluded at different times between German, French, Belgian, Russian and American rail manufacturers.

Since the war it is in Germany that industrial and commercial concentration in the iron and steel industry seems to have made the greatest strides. Thus, in 1926 the United Steel Works of the Ruhr were constituted (*Die Vereinigten Stahlwerke A.-G.*), a company with a capital of 800,000,000 marks, in which some of the principal metallurgical firms of the Ruhr have pooled their mines and their iron and steel works on an agreed basis of participation, in order to ensure unity of administration and joint technical and commercial exploitation. This group controls 41 per cent of the interests represented in the Raw Steel Union and about 36 per cent of the interests in the Rails and Rail-Sections Association and the Merchant Steel Associations.

The principal selling associations or agreements for the regulation of production existing to-day in Germany are the following:

The *Roheisenverband*, which includes almost all the blastfurnaces and sells all the pig-iron output of its members, except what is used in their own undertakings; the *Rohstahlgemeinschaft*, formed in November 1924, which includes almost all the steel works and regulates production according to demand on the basis of fixed quotas, but does not interfere with the distribution of orders nor with the selling or fixing of prices; the *Stahlwerksverband*, founded in 1904 as a selling organisation for certain rolled products (known as A products), dissolved in 1920 and reconstituted in July 1925, which comprises in its new form, in addition to a selling association for A products, other syndicates for merchant steel (*Stabeisenverband*), heavy sheets (*Grobblechverband*), and hoops (*Bandeisenverband*). There are other associations for tubes and wire rods (*Walzdrath*). No organisation of the kind exists in Germany for buying purposes.

In France, the "comptoirs" existing before the war, which were reorganised after the conclusion of peace, have to-day disappeared.

In the international field, the association of the rail manufacturers (International Rail-Makers Association), which before the war included the American rail-makers, has been reconstituted since the war by the British, German, Belgian, Luxemburg and French manufacturers under the name of the European Rail-Makers Association. Its headquarters are in London.

The text of the International Steel Agreement, to which Austria, Czechoslovakia and Hungary subsequently adhered, signed at Brussels on September 30th by the representatives of the French, German, Belgian and Luxemburg industries, will be found annexed. No official documentation is available on the series of Conventions by which the iron and steel industries of Central and Eastern Europe have divided certain markets among themselves.

ANNEXE I.

**TABLEAUX SUR LA PRODUCTION DE MINERAIS DE FER, FONTE ET FERRO-
ALLIAGES, ACIER (LINGOTS ET MOULAGE), FER ET ACIER FINIS, POUR
LES ANNÉES 1909-1913 ET 1920-1926.**

Sources : Statistiques officielles des Mines et Industries métallurgiques.
Relevés spéciaux fournis par les Administrations officielles de statistique.
Statistiques des Organisations centrales de Producteurs.
Rapports des Chambres de Commerce.

Dans quelques cas de peu d'importance ces sources ont été complétées par des renseignements
contenus dans certaines revues techniques telles que : *Stahl und Eisen*, *Iron Age*, *Iron Trade
Review*, etc.

ANNEX I.

**TABLES ON THE PRODUCTION OF IRON ORE, PIG IRON AND FERRO-ALLOYS,
STEEL (INGOTS AND CASTINGS), FINISHED IRON AND STEEL PRODUCTS
FOR THE YEARS 1909-1913 AND 1920-1926.**

Sources : Official Statistics of Mines and Metallurgical Industries.
Special Statements submitted by the official statistical administrations.
Statistics of Producers' Central Organisations.
Reports of Chambers of Commerce.

These sources have in a few cases of no great importance been supplemented by information
contained in certain technical reviews such as : *Stahl und Eisen*, the *Iron Age*, the *Iron Trade
Review*, etc.

Annexe I.
Tableau 1.

MINÉRAIS DE FER.

PRODUCTION EN MILLIERS DE TONNES MÉTRIQUES.

(a) = Territoire d'avant-guerre.

(b) = Territoire d'après-guerre.

PAYS	1909	1910	1911	1912	1913	Moyenne Average 1909-1913
Amérique du Nord.						
Canada	243	236	191	196	279	229
Etats-Unis	52,115	57,927	44,578	56,032	62,972	54,725
Terre-Neuve.....	894	1,077	1,194	1,033	1,263	1,092
Amérique Centrale.						
Cuba.....	945	1,441	1,182	1,420	1,607	1,319
Amérique du Sud.						
Chili.....		32	28	6	14	² 20
Europe.						
Allemagne	{ (a) 19,712	22,446	23,819	27,199	28,608	24,357
	{ (b) 7,309				7,309	6,418
Autriche	{ (a) 2,490	2,628	2,766	2,927	3,039	2,770
	{ (b) 1,586	1,759	1,829	1,881	2,031	1,817
Belgique.....	200	124	151	167	151	159
Espagne.....	8,786	8,666	8,773	9,133	10,789	9,229
France.....	{ (a) 11,890	14,606	16,639	19,160	21,918	16,842
	{ (b) 26,333	31,258	34,393	39,243	43,054	31,456
Grèce.....	531	585	527	446	314	581
Hongrie.....	{ (a) 1,965	1,906	1,950	1,991	2,059	1,874
	{ (b) 377	366	374	410	395	384
Italie	505	551	374	582	603	523
Luxembourg	5,794	6,263	6,060	6,511	7,333	6,392
Norvège	41	102	221	408	545	263
Pologne.....	(b) 356	401	408	459	449	415
Portugal			20	29	49	³ 33
Roumanie.....	{ (a) 447	461	464	308	325	
	{ (b) 447			464	465	460
Royaume S. H. S.	(b) 15,041	15,470	15,767	14,011	229	
Royaume-Uni	5,120	5,785	6,867	7,071	9,537	15,307
Russie ⁴	{ (a) 3,885	5,550	6,151	6,699	10,300	6,876
	{ (b) 2,026	1,994	2,064	2,178	1,800	
Suède	3,885	5,550	6,151	6,699	7,476	5,952
Tchécoslovaquie	(b) 2,026	1,994	2,064	2,178	1,800	2,012
Asie.						
Chine					440	
Indes	85	55	372	589	377	296
Japon					172	
Colonies japonaises						
Afrique.						
Algérie	891	1,065	1,074	1,190	1,349	1,114
Congo Belge					20	
Egypte						
Tunisie.....	217	366	403	478	598	412
Union Sud Africaine.....						
Océanie.						
Australie.....	118	160	124	116	176	139

¹ Estimation.

² Moyenne 1910-13.

³ Moyenne 1911-13.

⁴ Chiffres d'avant-guerre se rapportant à la Russie d'Europe seule ; chiffres d'après-guerre se rapportant à U. R. S. S. (y compris territoire d'Asie).

IRON ORE.

PRODUCTION IN METRIC TONS (000'S OMITTED).

(a) = Pre-war territory.

(b) = Post-war territory.

1920	1921	1922	1923	1924	1925	COUNTRIES
117	54	16	28	1	3	North America.
68,686	29,963	47,883	70,461	55,136	62,899	Canada.
519	522	1,019	733			United States.
						Newfoundland.
897	132	452	374			Caribbean.
						Cuba.
3	8	290	673			South America.
						Chile.
6,299	5,824	5,928	5,188	4,457	5,923	Europe.
						(a) } Germany.
						(b) }
435	711	1,112	1,211	714	1,030	(a) } Austria.
17	59	63	117	145	166	(b) }
5,480	3,226	3,240	3,945	4,813	4,400	Belgium.
						Spain.
13,921	14,201	21,106	23,349	28,992	35,741	(a) } France.
46	55	49	100	102	95	(b) }
						Greece.
102	36	46	138	102	71	(a) } Hungary.
390	279	311	341	238	513	(b) }
3,704	3,032	4,449	4,080	5,333	6,787	Italy.
79	57	259	386	522	425	Luxemburg.
183	304	395	454	292	212	Norway.
13	10	18	9	9		(b) } Poland.
						Portugal.
74	91	95	99	103	107	(a) } Roumania.
19	16	61	245	330	139	(b) }
12,910	3,534	6,977	11,050	11,228	10,306	(b) } S. H. S.
						United Kingdom.
160	144	225	500	1,094	2,500	(a) } Russia ¹ .
4,524	6,464	6,201	5,588	6,500	8,169	(b) }
1,053	801	313	675	1,174		Sweden.
						(b) } Czechoslovakia.
1,489	1,365	1,088	833			Asia.
567	957	635	817	1,468		China.
315	87	165	231		318	India.
447	233					Japan.
						Japanese Colonies.
1,060	707	1,019	1,448	1,775	1,787	Africa.
80	81	75	106	107		Algeria.
78	55	104	132	150		Belgian Congo.
434	274	500	838			Egypt.
2	2	1	1			Tunis.
						Union of South Africa.
615	701	172	569	731	751	Oceania.
						Australia.

¹ Estimate.

² Average 1910-1913.

³ Average 1911-1913.

⁴ Pre-war figures refer to European Russia only, post-war figures refer to U. S. S. R. (including Asiatic Territory).

Annexe I.
Tableau 2.

FONTE ET FERRO-ALLIAGES

PRODUCTION EN MILLIERS DE TONNES MÉTRIQUES.

(a) = Territoire d'avant-guerre.

(b) = Territoire d'après-guerre.

PAYS	1909	1910	1911	1912	1913	Moyenne Average 1909-1913
Amérique.						
Amérique du Nord	26,896	28,492	24,865	31,131	32,493	28,776
Canada	688	752	837	928	1,031	847
Etats-Unis	26,208	27,740	24,028	30,203	31,462	27,929
Amérique Centrale et du Sud ²	—	—	—	—	—	—
Europe	33,390	36,898	38,432	41,615	45,662	39,199
Allemagne { (a) ³	11,365	13,097	13,616	15,174	16,632	13,977
(b) ³	—	—	—	—	10,907	9,240
Autriche { (a) ⁴	1,465	1,505	1,596	1,760	1,814	1,628
(b)	494	547	575	601	607	565
Belgique	1,616	1,852	2,046	2,301	2,485	2,060
Espagne	429	373	409	403	425	408
Finlande	⁵ 12	¹ 10	9	10	9	10
France { (a)	3,574	4,038	4,470	4,939	5,207	4,446
(b) ³	5,885	6,736	7,174	7,976	8,948	7,334
Hongrie ⁶ { (a)	160	151	156	169	190	165
(b)	160	151	156	169	190	165
Italie	208	352	303	380	427	334
Luxembourg	1,553	1,696	1,918	2,678	2,677	2,104
Norvège	—	—	—	—	—	—
Pologne (b)	—	—	948	1,050	1,031	⁷ 1,010
Roumanie (b)	¹ 63	¹ 66	¹ 67	¹ 69	¹ 69	¹ 67
Royaume des Serbes, Croates et Slovènes (b)	—	—	—	—	⁸ 57	—
Royaume-Uni	9,685	10,172	9,678	8,891	10,425	9,770
Russie { (a)	2,875	3,044	3,593	4,203	4,629	3,668
(b)	—	—	—	—	4,220	—
Sarre (b)	1,132	1,198	1,220	1,301	1,371	1,244
Suède	448	608	638	707	742	629
Tchécoslovaquie (b)	922	878	930	1,040	1,072	968
Asie					607	¹⁰ 300
Chine ¹¹	—	—	—	—	160	—
Indes	39	36	49	146	207	96
Japon ¹²	—	—	—	—	240	—
Afrique ¹³						
Océanie	27	41	37	34	47	37
Australie	27	41	37	34	47	37
Monde entier	60,352	65,467	63,333	72,926	78,809	68,312

¹ Estimation.

² Production estimée du Mexique et du Brésil.

³ La Sarre donnée séparément.

⁴ Y compris Bosnie et Herzégovine.

⁵ 1908.

⁶ Fonte seulement; chiffres exacts pour ferro-alliages non disponibles.

⁷ Moyenne 1911-1913.

⁸ Bosnie et Herzégovine.

⁹ D'après une estimation de « Stahl und Eisen ».

¹⁰ Y compris estimations pour Japon et Chine, vu le manque de chiffres exacts.

¹¹ Y compris estimation de la production indigène.

¹² Y compris Corée et Kouang-Toung.

¹³ Production faible dans l'Union Sud-Africaine; chiffres exacts manquent.

¹⁴ Y compris une estimation de la production de ferro-alliages.

PIG-IRON AND FERRO-ALLOYS.
PRODUCTION IN METRIC TONS (000'S OMITTED).

(a) = Pre-war territory.

(b) = Post-war territory.

1920	1921	1922	1923	1924	1925	1926	COUNTRIES
38,534	17,581	28,065	41,930	32,537	37,894	40,750	America.
1,017	626	410	923	629	606	750	North America.
37,517	16,955	27,655	41,007	31,908	37,288	40,000	Canada.
15	45	30	45	50	150	50	U. S. A.
							Caribbean and South America ² .
22,541	18,589	25,875	25,872	33,248	36,508	35,730	Europe.
6,016	7,462	9,190	4,936	7,812	10,177	9,642	(a) } Germany.
							(b) } ³
100	224	321	342	267	380	380	(a) } Austria.
1,116	876	1,613	2,148	2,844	2,543	3,401	(b) } ⁴
251	247	210	400	497	533	550	Belgium.
10	10	13	9	10	11	10	Spain.
							Finland.
3,433	3,358	5,128	5,431	7,693	8,471	9,395	(a) } France.
							(b) } ³
	71	98	125	116	93	110	(a) } Hungary.
88	61	158	236	304	482	522	(b) } ⁵
693	970	1,679	1,406	2,157	2,346	2,512	Italy.
6	3	4	26	65	88	100	Luxemburg.
411	444	480	520	334	315	328	Norway.
19	33	31	39	46	64	100	(b) Poland.
							(b) Roumania.
6	12	16	24	15	35	300	(b) S. H. S.
8,164	2,657	4,980	7,560	7,424	6,337	2,482	United Kingdom.
							(a) } Russia.
115	115	187	530	757	1,551	2,430	(b) } ⁶
891	1,149	1,157	1,021	1,389	1,453	1,638	Italy.
485	320	275	302	535	463	480	(b) Saar.
737	577	335	817	983	1,166	1,350	Sweden.
							(b) Czechoslovakia.
1,437	1,402	1,349	1,806	2,079	12,038	12,150	Asia.
400	375	310	400	374	1375	1400	China ¹¹ .
316	377	345	609	885	813	850	India.
721	650	694	797	820	1850	900	Japan ¹² .
							Africa ¹³.
349	358	85	335	423	446	1500	Oceania.
349	358	85	335	423	446	500	Australia.
62,876	37,975	55,404	69,988	68,337	176,936	179,180	World.

¹ Estimated.

² Estimated production of Mexico and Brazil.

³ Saar shown separately.

⁴ Including Bosnia and Herzegovina.

⁵ 1908.

⁶ Pig-iron only; reliable figures for ferro-alloys not available.

⁷ Average 1911-1913.

⁸ Bosnia and Herzegovina.

⁹ According to estimate of "Stahl und Eisen".

¹⁰ Includes general estimates for Japan and China where no figures are available.

¹¹ Estimate for native production included.

¹² Including Korea and Kwantung.

¹³ Small amount produced in Union of South Africa, but no exact figures available.

¹⁴ Including estimate of the production of ferro-alloys.

Annexe I.
Tableau 3.

ACIER (INGOTS ET MOULAGE).

PRODUCTION EN MILLIERS DE TONNES MÉTRIQUES.

(a) = Territoire d'avant-guerre.

(b) = Territoire d'après-guerre.

PAYS	1909	1910	1911	1912	1913	Moyenne Average 1909-1913
Amérique						
Amérique du Nord	25,028	27,266	24,859	32,618	32,862	28,527
Canada	690	754	804	867	1,060	835
Etats-Unis	24,338	26,512	24,055	31,751	31,802	27,692
Amérique Centrale et du Sud ²	—	—	—	—	—	—
Europe ³	29,410	33,097	35,830	40,305	43,361	36,401
Allemagne ⁴ { (a) (b) ⁵	11,515	13,101	14,303	16,215	17,600	14,547
Autriche { (a) (b)	¹ 1,370	1,519	1,615	1,905	^{1 6} 1,853	1,652
Belgique	1,580	1,945	2,183	2,515	565	2,138
Espagne	308	316	323	330	242	304
Finlande	⁸	⁸	⁸	⁸	7	
France { (a) (b) ⁵	3,039	3,413	3,847	4,429	4,687	3,883
Hongrie { (a) (b)	¹ 600	670	748	819	830	733
Italie ⁷	890	982	1,001	981	443	—
Luxembourg	535	598	716	1,087	934	958
Norvège	—	—	—	—	1,336	854
Pologne (b)	—	—	1,387	1,569	1,661	⁸ 1,536
Roumanie (b)	¹ 128	¹ 132	¹ 133	¹ 134	¹ 140	¹ 133
Royaume Serb.-Cr.-Slov. (b)	—	—	—	—	¹ 300	—
Royaume-Uni	5,976	6,476	6,565	6,905	7,787	6,742
Russie { (a) (b)	3,155	3,444	3,902	4,447	4,869	3,964
Sarre (b)	—	—	—	—	4,212	—
Suède	434	624	618	664	2,080	—
Tchécoslovaquie (b)	868	932	1,029	1,188	749	618
Asie	—	—	—	—	346	¹⁰ 300
Chine	—	—	—	—	43	—
Indes	—	—	—	—	63	—
Japon ¹¹	—	—	—	—	240	—
Afrique ¹²	—	—	—	—	—	—
Océanie	—	—	—	—	14	—
Australie	—	—	—	—	14	—
Monde entier	54,438	60,363	60,689	72,923	76,583	65,228

¹ Estimation ou chiffre provisoire.

² Production faible au Brésil et au Mexique, dont les chiffres exacts ne sont pas disponibles.

³ Les années 1909-12 comprennent des estimations de 5 à 10.000 tonnes pour Finlande.

⁴ Y compris jusqu'à 1913, une faible quantité de moulage produit en Luxembourg.

⁵ La Sarre donnée séparément.

⁶ Y compris 57.000 tonnes produites en Bosnie et Herzégovine.

⁷ Non compris jusqu'à 1913, une faible quantité de moulage.

⁸ Moyenne 1911-1913.

⁹ D'après une estimation de « Stahl und Eisen ».

¹⁰ Moyenne approximative pour 1912-1913.

¹¹ Y compris Corée et Kouang-Toung.

¹² Production faible dans l'Union Sud-Africaine, dont les chiffres exacts ne sont pas disponibles.

¹³ Y. compris une estimation de la production de moulage.

STEEL (INGOTS AND CASTINGS).

PRODUCTION IN METRIC TONS (000's OMITTED).

(a) = Pre-war territory.

(b) = Post-war territory.

1920	1921	1922	1923	1924	1925	1926	COUNTRIES
43,934	20,779	36,667	46,560	39,199	46,886	¹³ 50,000	America.
1,127	679	494	897	660	766	790	North America.
42,807	20,100	36,173	45,663	38,539	46,120	¹³ 49,210	Canada.
—	—	—	—	—	—	—	U. S. A.
—	—	—	—	—	—	—	Caribbean and South America ² .
26,504	22,300	30,652	30,460	37,628	41,617	¹ 41,525	Europe ³ .
7,798	9,265	11,314	6,305	9,835	12,194	12,340	(a) } Germany ⁴ .
—	—	—	—	—	—	—	(b) }
198	294	481	500	370	464	¹ 550	(a) } Austria.
1,253	764	1,565	2,297	2,875	2,549	3,374	(b) }
¹ 250	306	314	476	545	626	¹ 650	Belgium.
6	14	14	26	31	30	¹ 30	Spain.
—	—	—	—	—	—	—	Finland.
3,050	3,102	4,534	5,109	6,900	7,415	8,386	(a) } France.
—	—	—	—	—	—	—	(b) }
62	166	257	283	239	231	¹ 250	(a) } Hungary.
774	714	1,046	1,219	1,358	1,785	1,712	(b) }
585	754	1,394	1,201	1,886	2,084	2,245	Italy ⁷ .
—	—	—	—	2	3	5	Luxemburg.
972	855	996	1,132	682	782	790	Norway.
¹ 35	45	68	82	87	¹ 95	¹ 100	(b) } Poland.
—	—	—	—	—	¹ 100	⁹ 500	(b) } Roumania.
9,212	3,763	5,974	8,617	8,332	7,517	3,620	S.H.S.
—	—	—	—	—	—	—	United Kingdom.
163	184	361	726	1,139	2,149	¹ 3,120	(a) } Russia.
675	920	1,262	997	1,447	1,575	1,734	(b) }
498	236	351	310	550	518	519	(b) } Saar.
973	918	721	1,180	1,350	¹ 1,500	¹ 1,600	Sweden.
—	—	—	—	—	—	—	(b) } Czechoslovakia.
1,021	1,066	1,181	1,377	1,639	¹ 1,800	¹ 1,900	Asia.
52	48	120	200	¹ 200	¹ 150	¹ 150	China.
158	186	152	218	340	¹ 450	¹ 500	India.
811	832	909	959	1,099	¹ 1,200	¹ 1,250	Japan ¹¹ .
—	—	—	—	—	—	—	Africa ¹² .
219	255	54	147	302	¹ 469	¹ 500	Oceania.
219	255	54	147	302	¹ 469	¹ 500	Australia.
71,678	44,400	68,554	78,544	78,768	¹ 90,772	¹ 93,925	World.

¹ Estimated or provisional figure.

² Small amount produced in Brazil and Mexico for which no figures are available.

³ The years 1909-12 include estimates of 5-10,000 tons for Finland.

⁴ Including up to 1913 insignificant amount of castings produced in Luxemburg.

⁵ Saar Basin given separately.

⁶ Including 57,000 tons produced in Bosnia and Herzegovina.

⁷ Excluding up to 1913 an insignificant amount of castings.

⁸ Average 1911-1913

⁹ According to estimate of "Stahl und Eisen".

¹⁰ Estimated average for 1912-1913.

¹¹ Includes Korea and Kwantung.

¹² Small amount produced in Union of South Africa for which no figures are available.

¹³ Including estimate of the production of castings.

Annexe I.

Tableau 4.

FONTE.

POURCENTAGE DE LA PRODUCTION ENTIÈRE MONDIALE PRODUITE DANS CHAQUE PAYS ET GROUPE CONTINENTAL DANS LES ANNÉES INDIQUÉES.

Annex I.

PIG IRON.

Table 4.

PERCENTAGE WHICH THE PRODUCTION OF EACH COUNTRY AND CONTINENTAL GROUP CONSTITUTED OF TOTAL WORLD PRODUCTION IN THE YEARS SHOWN.

PAYS	¹ Moyenne ¹ Average 1909-1913	² 1913	1920	1921 ¹	1922	1923	1924	1925	1926
	%	%	%	%	%	%	%	%	%
Amérique du Nord	42.12	41.23	61.29	46.30	50.66	59.91	47.61	49.25	51.46
Canada	1.23	1.31	1.62	1.65	0.74	1.32	0.92	0.79	0.94
Etats-Unis	40.89	39.92	59.67	44.65	49.92	58.59	46.69	48.46	50.52
Amérique Centrale et du Sud			0.02	0.12	0.05	0.06	0.07	0.07	0.06
Europe	57.38	57.94	35.85	48.95	46.71	36.97	48.65	47.45	45.13
Allemagne	20.46	13.84	9.57	19.65	16.59	7.05	11.43	13.23	12.18
Autriche	2.38	0.77	0.16	0.59	0.58	0.49	0.39	0.49	0.48
Belgique	3.02	3.15	1.78	2.31	2.91	3.07	4.16	3.30	4.29
Espagne	0.60	0.54	0.40	0.65	0.38	0.57	0.73	0.69	0.69
Finlande	0.01	0.01	0.02	0.03	0.02	0.01	0.01	0.01	0.01
France	6.51	11.35	5.46	8.84	9.25	7.76	11.26	11.01	11.87
Hongrie	0.24	0.24		0.19	0.18	0.18	0.17	0.12	0.14
Italie	0.49	0.55	0.14	0.16	0.28	0.34	0.44	0.63	0.66
Luxembourg	3.08	3.40	1.10	2.55	3.03	2.01	3.16	3.05	3.17
Norvège			0.01	0.01	0.01	0.04	0.10	0.11	0.13
Pologne		1.31	0.65	1.17	0.87	0.74	0.49	0.41	0.41
Roumanie		0.09	0.03	0.09	0.06	0.06	0.07	0.08	0.13
Royaume S. H. S.		0.07		0.03	0.03	0.03	0.02	0.05	0.38
Royaume-Uni	14.30	13.23	12.99	7.00	8.99	10.80	10.86	8.24	3.13
Russie	5.37	5.35	0.18	0.30	0.34	0.76	1.11	2.02	3.07
Sarre		1.74	1.42	3.02	2.09	1.46	2.03	1.89	2.07
Suède	0.92	0.94	0.77	0.84	0.50	0.43	0.78	0.60	0.61
Tchécoslovaquie		1.36	1.17	1.52	0.60	1.17	1.44	1.52	1.71
Asie	0.44	0.77	2.29	3.69	2.43	2.58	3.05	2.65	2.72
Chine		0.20	0.64	0.99	0.56	0.57	.55	0.49	0.51
Indes	0.14	0.26	0.50	0.99	0.62	0.87	1.30	1.06	1.07
Japon		0.31	1.15	1.71	1.25	1.14	1.20	1.11	1.14
Océanie	0.06	0.06	0.55	0.94	0.15	0.48	0.62	0.58	0.63
Australie	0.06	0.06	0.55	0.94	0.15	0.48	0.62	0.58	0.63
Monde	100	100	100	100	100	100	100	100	100
Production mondiale (en milliers de tonnes métriques) ...	68,312	78,809	62,876	37,975	55,404	69,988	68,337	76,936	79,180

¹ Base : Production dans territoire d'avant guerre.
² Base : Production dans territoire d'après guerre.

¹ Base : Production within pre-war frontiers.
² Base : Production within post-war frontiers.

Annexe I.

Tableau 5.

ACIER.

POURCENTAGE DE LA PRODUCTION ENTIÈRE¹ MONDIALE PRODUITE DANS CHAQUE PAYS ET GROUPE CONTINENTAL DANS LES ANNÉES INDIQUÉES.

Annex I.

Table 5.

STEEL.

PERCENTAGE WHICH THE PRODUCTION OF EACH COUNTRY AND CONTINENTAL GROUP CONSTITUTED OF TOTAL WORLD PRODUCTION IN THE YEARS SHOWN.

¹ Moyenne ¹ Average 1909-1913	1913	1920	1921	1922	1923	1924	1925	1926	COUNTRIES
%	%	%	%	%	%	%	%	%	
43.73	42.91	61.29	46.30	53.49	59.28	49.77	51.65	53.24	North America.
1.28	1.38	1.57	1.53	0.72	1.14	0.84	0.84	0.84	Canada.
42.45	41.53	59.72	45.27	52.77	58.14	48.93	50.81	52.40	U. S. A.
									Caribbean and South America.
55.81	56.62	36.93	50.23	44.71	38.78	47.77	45.95	44.21	Europe.
22.30	15.96	10.87	20.87	16.50	8.03	12.49	13.43	13.14	Germany.
2.53	0.74	0.28	0.66	0.70	0.64	0.47	0.51	0.59	Austria.
3.28	3.22	1.75	1.72	2.29	2.92	3.65	2.81	3.59	Belgium.
0.47	0.32	0.35	0.69	0.46	0.61	0.69	0.69	0.69	Spain.
0.01	0.01	0.01	0.03	0.02	0.03	0.04	0.03	0.03	Finland.
5.95	9.11	4.25	6.99	6.61	6.50	8.76	8.17	8.93	France.
1.12	0.58	0.09	0.37	0.38	0.36	0.30	0.26	0.27	Hungary.
1.48	1.22	1.08	1.61	1.52	1.45	1.72	1.97	1.82	Italy.
1.31	1.74	0.82	1.70	2.04	1.55	2.39	2.30	2.39	Luxemburg.
	2.17	1.36	1.93	1.45	1.44	0.87	0.86	0.84	Norway.
	0.18	0.05	0.10	0.10	0.10	0.11	0.10	0.11	Poland.
	0.39						0.11	0.11	Roumania.
10.33	10.16	12.85	8.47	8.71	10.97	10.58	8.28	3.86	S. H. S.
6.08	5.50	0.23	0.42	0.53	0.93	1.45	2.37	3.32	United Kingdom.
	2.72	0.94	2.07	1.84	1.27	1.84	1.74	1.85	Russia.
0.95	0.98	0.69	0.53	0.51	0.40	0.70	0.57	0.55	Saar.
	1.60	1.36	2.07	1.05	1.50	1.71	1.65	1.70	Sweden.
0.46	0.45	1.42	2.40	1.72	1.75	2.08	1.98	2.02	Czechoslovakia.
	0.06	0.07	0.11	0.17	0.25	0.25	0.16	0.16	Asia.
	0.08	0.22	0.42	0.22	0.28	0.43	0.50	0.53	China.
	0.31	1.13	1.87	1.33	1.22	1.40	1.32	1.33	India.
	0.02	0.31	0.57	0.08	0.19	0.38	0.52	0.53	Japan.
	0.02	0.31	0.57	0.08	0.19	0.38	0.52	0.53	Oceania.
									Australia.
100	100	100	100	100	100	100	100	100	World.
65,228	76,583	71,678	44,400	68,554	78,544	78,768	90,772	93,925	World Production (000's metric tons).

¹ Base : Production dans territoire d'avant-guerre.
² Base : Production dans territoire d'après-guerre.

¹ Base : Production within pre-war frontiers.
² Base : Production within post-war frontiers.

Annexe I.
Tableau 6.

FONTE.

INDICES DE PRODUCTION.

- (a) Base : Moyenne de la production en 1909-1913 dans territoire d'avant-guerre = 100.
(b) Base : Production en 1913 dans territoire d'après-guerre = 100.

PIG-IRON.

Annex
Table

INDICES OF PRODUCTION.

- (a) Base : Average production 1909-1913 within pre-war frontiers = 100.
(b) Base : Production in 1913 within post-war frontiers = 100.

PAYS	Milliers de tonnes métriques Metric tons (000's omitted)	1920	1921	1922	1923	1924	1925	1926	COUNTRIES
Amérique du Nord { (a) (b)	28,776 32,493	134 119	61 54	98 86	146 129	113 100	132 117	142 125	(a) } North America. (b) }
Canada { (a) (b)	847 1,031	120 99	74 61	48 40	109 90	74 61	73 59	89 73	(a) } Canada. (b) }
Etats-Unis { (a) (b) ...	27,929 31,462	134 119	61 54	99 88	147 130	114 101	134 119	143 127	(a) } U. S. A. (b) }
Europe { (a) (b)	39,199 45,662	58 49	47 41	66 57	66 57	85 73	93 80	91 78	(a) } Europe. (b) }
Allemagne { (a) (b)	13,977 10,907	43 55	53 68	66 84	35 45	56 72	73 93	69 88	(a) } Germany. (b) }
Autriche { (a) (b)	1,628 607	6 16	14 37	20 53	21 56	16 44	23 63	23 63	(a) } Austria. (b) }
Belgique { (a) (b)	2,060 2,485	54 45	43 35	78 65	104 86	138 114	122 102	165 137	(a) } Belgium. (b) }
Espagne { (a) (b)	408 425	62 59	61 58	51 49	98 94	122 117	131 125	135 129	(a) } Spain. (b) }
France { (a) (b)	4,446 8,948	77 38	76 38	115 57	122 61	173 86	191 95	211 105	(a) } France. (b) }
Hongrie { (a) (b)	165 190	43 37	59 52	76 66	70 61	56 49	67 58	67 58	(a) } Hungary ⁴ . (b) }
Italie { (a) (b)	334 427	26 21	18 14	47 37	71 55	91 71	144 113	156 122	(a) } Italy. (b) }
Luxembourg { (a) (b) ..	2,104 2,677	33 26	46 36	80 63	67 53	103 81	112 88	119 94	(a) } Luxemburg. (b) }
Pologne (b)	1,031	40	43	47	50	32	31	32	(b) } Poland.
Royaume des Serbes, Croates et Slovènes (b)	578	11	21	28	42	26	61	526	(b) } S. H. S.
Royaume-Uni { (a) (b)	9,770 10,425	84 78	27 25	51 48	77 73	76 71	65 61	25 24	(a) } United Kingdom (b) }
Russie { (a) (b)	3,668 4,220	3 3	3 3	5 4	14 13	21 18	42 37	66 58	(a) } Russia. (b) }
Sarre (b)	1,371	65	84	84	74	101	106	119	(b) } Saar.
Suède { (a) (b)	629 742	77 65	51 43	44 37	48 41	85 72	74 62	76 65	(a) } Sweden. (b) }
Tchécoslovaquie (b)	1,072	69	54	31	76	92	121	126	(b) } Czechoslovakia.
Asie { (a) (b)	² 300 607	479 236	467 231	450 222	602 298	693 343	679 236	717 354	(a) } Asia. (b) }
Chine (b) ³	160					250	250	250	(b) } China ² .
Indes { (a) (b)	96 207	329 153	393 182	359 167	634 294	922 428	847 393	885 411	(a) } India. (b) }
Japon (b)	240	300	271	289	332	342	354	375	(b) } Japan.
Océanie ⁴ { (a) (b)	37 47	943 743	968 762	230 181	905 713	1,143 900	1,205 949	1,351 1,064	(a) } Oceania ³ . (b) }
Monde { (a) (b)	68,312 78,809	92 80	56 48	81 70	102 89	100 87	113 98	116 100	(a) } World. (b) }

¹ Fonte seulement.

² Estimation sur la base de chiffres disponibles.

³ Les chiffres de la production de Chine sont trop approximatifs pour justifier le calcul d'un index.

¹ Pig-iron only.

² Estimate on basis of available figures.

³ Production figures for China too approximate to justify

Annexe I.
Tableau 7.

ACIER.

INDICES DE PRODUCTION.

- (a) Base : moyenne de la production en 1909-1913 dans territoire d'avant-guerre = 100.
(b) Base : production en 1913 dans territoire d'après-guerre = 100.

STEEL.

Annex I.
Table 7.

INDICES OF PRODUCTION.

- (a) Base : Average production 1909-1913 within pre-war frontiers = 100.
(b) Base : Production in 1913 within post-war frontiers = 100.

PAYS	Milliers de tonnes métriques Metric tons (000's omitted)	1920	1921	1922	1923	1924	1925	1926	COUNTRIES
Amérique du Nord { (a) (b)	28,527 32,862	154 134	73 63	129 112	163 142	137 119	164 143	175 152	(a) } North America. (b) }
Canada { (a) (b)	835 1,060	135 106	81 64	59 47	107 85	79 62	92 72	95 75	(a) } Canada. (b) }
Etats-Unis { (a) (b)	27,692 31,802	155 135	73 63	131 114	165 144	139 121	167 145	178 155	(a) } U. S. A. (b) }
Europe { (a) (b)	36,401 43,361	73 61	61 51	84 71	84 70	103 87	114 96	114 96	(a) } Europe. (b) }
Allemagne { (a) (b)	14,547 12,236	54 64	64 76	78 92	43 51	68 80	84 100	85 101	(a) } Germany. (b) }
Autriche { (a) (b)	1,652 565	12 35	18 52	29 85	30 88	22 65	28 82	93 97	(a) } Austria. (b) }
Belgique { (a) (b)	2,138 2,467	59 51	36 31	73 63	107 93	134 117	119 103	158 137	(a) } Belgium. (b) }
Espagne { (a) (b)	304 242	82 103	101 126	103 130	157 197	179 225	206 259	214 269	(a) } Spain. (b) }
France { (a) (b)	3,883 6,973	79 44	80 44	117 65	132 73	178 99	191 106	216 120	(a) } France. (b) }
Hongrie { (a) (b)	733 443	8 14	23 37	35 58	39 64	33 54	32 52	34 56	(a) } Hungary. (b) }
Italie { (a) (b)	958 934	81 83	75 76	109 112	127 131	142 145	186 191	179 183	(a) } Italy. (b) }
Luxembourg { (a) (b)	854 1,336	69 44	88 56	163 104	141 90	221 141	244 156	263 168	(a) } Luxembourg. (b) }
Pologne (b)	1,661	59	51	60	68	41	47	48	(b) } Poland.
Royaume-Uni { (a) (b)	6,742 7,787	137 118	56 48	89 77	128 111	124 107	111 97	54 46	(a) } United Kingdom. (b) }
Russie { (a) (b)	3,964 4,212	4 4	5 4	9 9	18 17	29 27	54 51	79 74	(a) } Russia. (b) }
Sarre (b)	2,080	32	44	61	48	70	76	83	(b) } Saar.
Suède { (a) (b)	618 749	81 66	38 32	57 47	50 41	89 73	84 69	84 69	(a) } Sweden. (b) }
Tchécoslovaquie (b)	1,229	79	75	58	96	110	122	130	(b) } Czechoslovakia.
Asie (b)	346	295	308	341	398	474	520	549	(b) } Asia.
Chine ¹ (b)	43					450	350	350	(b) } China ¹ .
Indes (b)	63	251	295	241	346	540	714	794	(b) } India.
Japon (b)	240	338	347	379	400	458	500	521	(b) } Japan.
Océanie ² (b)	14	1,564	1,821	386	1,050	2,157	3,350	3,571	(b) } Oceania ² .
Monde { (a) (b)	65,228 76,533	110 94	68 58	105 90	120 103	121 103	139 119	144 123	(a) } World. (b) }

¹ Les chiffres de la production de Chine sont trop approximatifs pour justifier le calcul d'un index exact.

² Australie.

¹ Production figures for China too approximate to justify exact index calculations.

² Australia.

Annexe I.
Tableau 8.

ALLEMAGNE.
(Y compris le Luxembourg de 1909 à 1913.)

PRODUCTION D'ACIER MI-FINI ET FINI.
(En milliers de tonnes métriques.)

	1909	1910	1911	1912	1913
Acier mi-fini pour la vente	2,085	2,263	2,613	3,287	2,800
Acier fini :					
Rails, traverses et éclisses	1,485	1,608	1,719	1,929	2,470
Longuerines	4,320	4,934	5,376	1,949	1,556
Barres d'acier				4,277	4,430
Feuillards et rubans				370	396
Fils laminés	909	966	999	1,041	1,158
Tôles et plaques	1,502	1,652	1,946	2,029	2,299
Fer-blanc	55	57	65	72	83
Tubes	166	216	250	650	750
Essieux et roues	242	266	292	349	374
Pièces forgées	413	458	530	210	208
Autres aciers finis				137	177
Total acier fini	9,092	10,157	11,177	13,058	13,899
Production totale des laminoirs	11,177	12,420	13,790	16,345	¹ 16,699

¹ De ce total 11.005 milliers de tonnes ont été produites dans les frontières actuelles.

Tableau 9.

BELGIQUE.

PRODUCTION D'ACIER MI-FINI ET FINI, ET DE FER MALLÉABLE.
(En milliers de tonnes métriques.)

	1909	1910	1911	1912	1913
Acier mi-fini.					
Loupes, billettes, etc.					
Acier fini.					
Marchand	629	673	711	879	856
Fers profilés, en formes spéciales	139	172	184	196	214
Longuerines et V's	152	168	197	214	175
Rails	214	348	338	339	342
Matériel de chemins de fer ¹					
Bandages et essieux	34	32	35	40	34
Tiges en fil de fer ²					
Feuillards et rubans ¹					
Tiges ¹					
Plaques	283	300	342	400	380
Autres produits	119	141	139	170	162
Total acier fini	1,570	1,834	1,946	2,238	2,163
Fer ³					
Marchand					
Autres produits finis					
Total fer et acier finis					

¹ Non mentionné séparément avant 1922.

² Non mentionné séparément avant 1920.

³ Avant 1914, le fer est compris dans l'acier.

GERMANY.
(Including Luxemburg in 1909-1913.)
PRODUCTION OF SEMI-FINISHED AND FINISHED STEEL.
(000's metric tons.)

1920	1921	1922	1923	1924	1925	
701	836	943	715	830	952	Semi-finished Steel for Sale.
685	1,113	1,208	657	1,053	1,499	Finished Steel : Rails, sleepers and fish-plates.
451	583	624	338	461	676	Girders.
2,620	2,466	2,940	1,656	2,321	2,839	Steel bars.
258	246	322	174	282	389	Hoops and strips.
573	630	875	438	909	1,073	Rolled wire.
1,438	1,495	1,729	944	1,375	1,729	Sheets and plates.
31	56	74	44	86	91	Tinplates.
382	392	515	209	476	637	Tubes.
271	350	342	180	207	119	Axles and wheels.
150	129	167	95	128	183	Forgings.
77	60	82	38	46	59	Other finished steel.
6,935	7,520	8,878	4,771	7,344	9,294	Total Finished Steel.
7,636	8,356	9,821	5,486	8,174	10,246	Total Rolling-mill Production.

¹ Of this total 11,005 thousand tons were produced within the present frontiers.

BELGIUM.

PRODUCTION OF SEMI-FINISHED AND FINISHED STEEL AND WROUGHT IRON.
(000's metric tons.)

1920	1921	1922	1923	1924	1925	
		308	506	597	529	Semi-finished Steel : Blooms, billets, etc.
349	248	307	546	624	507	Finished Steel : Merchant.
117	101	148	152	252	156	Special sections.
84	65	152	197	201	137	Girders and V's.
129	128	180	217	228	167	Rails.
		37	40	47	44	Railway material ¹ .
19	18	23	34	39	27	Tyres and axles.
131	114	94	123	138	189	Wire rods ² .
		10	24	27	15	Hoops and strips ¹ .
		65	71	73	48	Rods ¹ .
249	160	274	353	458	490	Plates.
8	3	4	12	37	35	Other products.
1,086	837	1,294	1,769	2,124	1,815	Total Finished Steel :
145	120	155	188	175	83	Iron ³ .
17	39	19	22	24	18	Merchant.
						Other finished products.
1,248	996	1,468	1,979	2,323	1,916	Total Finished Iron and Steel.

¹ Not shown separately until 1922.

² Not shown separately until 1920.

³ Before 1914 iron is included with steel.

Annexe I.
Tableau 10.

ÉTATS-UNIS¹.

PRODUCTION DE FER LAMINÉ ET D'ACIER FINIS.
(En milliers de tonnes métriques.)

	1909	1910	1911	1912	1913
Acier :					
Rails	3,072	3,694	2,868	3,380	3,559
Plaques et tôles	4,302	5,034	4,560	5,969	5,843
Plaques à clous et à crampons	65	46	49	46	38
Tiges à fil de fer	2,373	2,278	2,489	2,696	2,504
Pièces de construction	2,312	2,303	1,943	2,892	3,053
Barres marchandes	3,316	3,847	3,096	3,756	4,021
Barres pour béton armé	162	240	263	279	325
Lames d'acier et acier à tuyaux	2,066	1,857	2,012	2,486	2,542
Feuillards		266			285
Rubans et liens à balles de coton		432			508
Barres à attacher, éclisses, etc.					697
Tôle laminée corroyée					
Traverses de chemins de fer					
Pièces forgées, laminées ; loupes, etc.		467			546
Tous autres produits laminés, finis	2,291	1,503	2,091	3,548	1,267
Total acier.....					
Fer :					
Plaques et tôles					
Barres marchandes					
Lames de fer ; fer à tuyaux					
Tous autres produits laminés, finis					
Total acier et fer	19,959	21,967	19,371	25,052	25,188

¹ Les chiffres non donnés séparément sont compris dans « autres produits laminés finis ».

Tableau 11. FRANCE.

PRODUCTION D'ACIER FINI.
(En milliers de tonnes métriques.)

FRANCE.

Table 11.

PRODUCTION OF FINISHED STEEL.
(000's metric tons.)

	¹ 1912	¹ 1913	1920	1921	1922	1923	1924	1925	
Acier fini :									Finished Steel :
Bandages	55	70	37	48	34	42	60	61	Tyres.
Rails	517	461	174	293	400	370	537	497	Rails.
Traverses et éclisses....				37	65	57	108	127	Sleepers and fishplates.
Longuerines et raccords..	491	586	261	268	442	506	693	827	Girders and joints.
Plaques et tôle	585	600	361	366	444	559	692	674	Plates and sheets.
Plaques étamées (fer-blanc)				16	31	37	52	68	Tin plates.
Barres marchandes	1,126	968	780	759	1,123	1,255	1,643	1,702	Merchant bars.
Ressorts	102	121	56	10	9	9	12	11	Springs.
Pièces forgées.....				37	37	42	56	41	Forgings.
Feuillards et rubans	—	—	20	18	30	48	71	73	Hoops and strips.
Tiges à fil de fer				118	253	331	385	407	Wire rods.
Fil de fer	229	217	152	88	91	87	98	100	Wire.
Moulages en acier	95	102	75	78	103	136	168	155	Steel mouldings.
Tubes et tuyaux	51	62	31	30	60	70	97	108	Tubes and pipes.
Autres produits.....	—	—	11	17	24	36	38	52	Other products.
Total	3,251	3,187	1,958	2,189	3,147	3,587	4,709	4,903	Total.

¹ Chiffres se réfèrent au territoire d'avant-guerre, à cause des changements dans la classification. La production totale des laminoirs dans le territoire d'après-guerre en 1909-13 était la suivante (en milliers de tonnes métriques) : 2.799, 3.185, 3.680, 4.395, 4.681. Les détails concernant la décomposition ne sont pas disponibles pour les années 1909-12, à cause d'un manque de spécification dans les chiffres pour la Lorraine. Le chiffre de 1913 était composé comme suit : (en milliers) Rails, traverses et éclisses 781, longuerines et rapports 886, barres marchandes 1.604 plaques et tôles larges 669, fil pour machines 275, fer-blanc 39 et autres produits 427. Ces chiffres ne sont pas strictement comparables avec ceux d'après-guerre.

¹ Figures refer to pre-war territory. Total rolling mill production, in post-war territory in 1909-13, was as follows (000's metric tons) : 2,799 ; 3,185 ; 3,680 ; 4,395 ; 4,681. Details as to composition are not available for the years 1909-12 on account of the lack of specification of the figures for Lorraine. The 1913 figure was composed as follows (000's) Rails, sleepers, and fishplates 781, girders and joints 886, merchant bars 1,604, sheets and broad plates 669, machine wire 275, tinplates 39 and other product 427. These figures are not strictly comparable with the post-war figures.

UNITED STATES ¹.
PRODUCTION OF FINISHED, ROLLED IRON AND STEEL.
(000's metric tons.)

1920	1921	1922	1923	1924	1925	
2,646	2,214	2,207	2,951	2,472	2,830	Steel :
9,487	4,308	8,055	9,644	8,184	9,922	Rails.
21	15	22	23	22	22	Plates and sheets.
3,187	1,589	2,696	3,124	2,562	2,890	Nail and spike plates.
3,360	1,293	2,760	3,458	3,336	3,661	Wire rods.
6,228	1,389	3,720	5,230	4,086	5,455	Structural shapes.
582	230	584	691	666	832	Merchant bars.
3,271	1,844	2,682	3,573	3,052	3,100	Bars for reinforced concrete.
337	170	226	224	182	208	Skelp, flue and pipe steel.
395	113	272	352	298	361	Hoops.
585	384	555	720	588	779	Bands and cotton ties.
21	18	13	37	51	58	Splice bars, tie-plate bars, etc.
26	10	15	20	15	14	Rolled sheet piling.
454	110	331	453	352	350	Railroad ties.
2,262	769	1,817	2,336	1,956	2,700	Rolled forging blooms, etc.
						All other finished rolled products.
	14,456	25,955	32,836	27,822	33,182	Total Steel Products.
	21	41	6	34	42	Iron :
	201	323	441	263	295	Plates and sheets.
	117	223	220	169	182	Merchant bars.
	214	332	332	246	220	Skelp, flue and pipe iron.
						All other finished rolled products.
32,866	15,009	26,874	33,835	28,534	33,921	Total Steel and Iron Products.

¹ Figures not shown separately are included among " Other finished, rolled products ".

Tableau 12. LUXEMBOURG ¹.

PRODUCTION EN ACIER FINI ET MI-FINI.

(En milliers de tonnes métriques.)

LUXEMBURG ¹. Table 12.

PRODUCTION OF SEMI-FINISHED AND FINISHED STEEL.
(000's metric tons.)

	1914	1920	1921	1922	1923	1924	1925	
Acier mi-fini	385	168	231	485	297	616	615	Semi-finished Steel.
Acier fini :								Finished Steel :
Matériel pour voie ferrée	81	26	99	79	59	116	134	Permanent railway material.
Raccords et grandes formes	208	104	102	197	177	236	291	Joints and large shapes.
Barres et petites formes	215	142	112	332	339	470	526	Bars and small shapes.
Tiges à fil de fer	51	36	52	68	83	96	106	Wire rods.
Feuillards	6	—	12	33	41	51	53	Hoops.
Tôles	—	18	7	—	—	—	—	Sheets.
Autres produits	—	50	85	143	125	205	240	Other products
Total acier fini.....		376	469	852	824	1,174	1,350	Total Finished Steel.

¹ Les chiffres d'avant-guerre de la production par articles pour le Luxembourg ne sont pas séparés de ceux de l'Allemagne. La production totale de (a) semi-fini et (b) acier fini en 1909-13, était cependant la suivante (en milliers de tonnes métriques) : 1909, (a) 218 et (b) 315 ; 1910, (a) 213 et (b) 376 ; 1911, (a) 278 et (b) 430 ; 1912, (a) 381 et (b) 546 ; 1913 (a) 420 et (b) 670.

¹ The pre-war Luxembourg production figures by articles are not separated from those of Germany. The total production of (a) semi-finished and (b) finished steel in 1909-13 however was as follows (000's metric tons) : 1909 (a) 218 and (b) 315 ; 1910, (a) 213 and (b) 376 ; 1911, (a) 278 and (b) 430 ; 1912, (a) 381 and (b) 546 ; 1913, (a) 420 and (b) 670.

Annexe I.

Tableau 13.

POLOGNE.

POLAND.

Annex I.

Table 13.

PRODUCTION EN ACIER MI-FINI ET FINI

(En milliers de tonnes métriques)

PRODUCTION OF SEMI-FINISHED AND FINISHED STEEL

(000's metric tons)

	1913	1922	1923	1924	1925	
Acier mi-fini pour la vente	151	127	137	98	82	Semi-finished Steel for Sale.
Acier fini :						Finished Steel :
Rails, voie normale	70	25	43	25	91	Rails, ordinary gauge.
Rails, voie étroite	19	16	15	15	14	Rails, narrow gauge.
Traverses, plaques, etc.	139	22	29	30	35	Sleepers, plates, etc.
Poutrelles	115	75	57	38	44	Girders.
Acier marchand et acier profilé ..	478	336	388	194	188	Merchant steel and sections.
Ruban, laminé à chaud.....	21	13	18	10	15	Bands, hot-rolled.
Fil laminé	64	36	51	19	31	Rolled wire.
Tôles	278	201	159	118	145	Sheets.
Acier spécial pour ressorts, instru- ments, etc.....	8	19	7	14	21	Special steel for springs, tools, etc.
Autres qualités de fer et d'acier ..	7	5	10	8	2	Other iron and steel.
Total acier fini	1199	748	777	471	586	Total Finished Steel.

Tableau 15.

SUÈDE ¹.

SWEDEN ¹.

Table 15.

PRODUCTION DE FER ET ACIER, MI-FINIS ET FINIS.

(En milliers de tonnes métriques.)

PRODUCTION OF SEMI-FINISHED AND FINISHED

IRON AND STEEL.

(000's metric tons.)

	1913	1920	1921	1922	1923	1924	1925	
Fer et acier, en barres	203	157	66	108	97	163	169	Bar iron and steel.
Billetes, loupes, etc.	288	196	115	198	156	296	299	Billets, blooms, etc.
Total	491	353	181	306	253	459	468	Total
Ebauches de tubes creusées ou non	51	27	7	19	15	32	26	Tube blanks, hollow and plain.
Autre fer mi-fini	45	31	15	32	25	39	39	Other semi-finished iron.*
Angles, longuerines, bandages....	33	20	10	16	12	21	16	Angles, girders, tyres.
Feuillards, etc.	92	70	31	52	48	76	78	Hoops, etc.
Tiges à fil et rubans	79	53	17	41	40	58	51	Wire rods and strips.
Plaques et tôles	55	46	25	32	26	46	53	Plates and sheets.
Rails, essieux et éclisses	5	5	1	1	2	2	2	Rails, axles and fishplates.
Non spécifiés	6	6	5	6	10	12	12	Unenumerated.
Total	366	258	111	199	178	286	277	Total.

¹ Chiffres comparables non disponibles pour 1909-1912.

¹ Comparable figures not available for 1909-1912.

Annexe I.

Tableau 14. ROYAUME-UNI¹.

PRODUCTION D'ARTICLES FINIS EN ACIER ET DE
FER MALLÉABLE.

(En milliers de tonnes métriques.)

Annex I.

UNITED KINGDOM¹. Table 14.

PRODUCTION OF FINISHED STEEL PRODUCTS AND
WROUGHT IRON.

(000's metric tons.)

	1920	1921	1922	1923	1924	1925	
Acier :							Steel :
Pièces forgées.....	300	138	128	256	265	245	Forgings.
Brillant, étiré ou laminé à froid	90	27	46	65	78	73	Bright, cold-drawn and rolled.
Plaques	1,680	687	586	1,034	1,154	872	Plates.
Tôles	365	165	394	519	507	527	Sheets.
Fers-blancs, ternes et plaques noires	619	296	684	738	863	779	Tin, terne and black plates.
Tôles galvanisées	467	302	607	700	771	860	Galvanised sheets.
Rails.....	580	429	543	719	650	629	Rails.
Traverses et éclisses....	56	54	81	126	90	111	Sleepers and fishplates.
Pièces de construction..	2,163	727	1,145	1,704	1,725	1,730	Structural shapes.
Tiges à fil de fer	265	91	215	331	268	207	Wire rods.
Feuillards et rubans ...	256	127	241	371	385	391	Hoops and strips.
Acier à ressorts.....	97	44	50	87	97	89	Spring steel.
Total.....	6,938	3,087	4,720	6,650	6,853	6,513	Total.
Fer :							Iron :
Production de la forge :							Forge production :
Barres puddlées	598	221	223	337	314	219	Puddled bars.
Déchets, loupes et barres	393	186	233	319	296	201	Scrap, ball and bushel- ling bars.
Total.....	991	407	456	656	610	420	Total.
Produits finis des lami- noirs :							Finished mill production :
Barres, tiges, ronds, carrés, plats, an- gles, « tees », formes, profilés et tiges à clous fendues. }	605	253	298	421	385	267	Bars, rods, rounds, squares, flats, an- gles, tees, shapes, sections and slit nail rods.
Fer à tubes laminé, feuillards et rubans	109	32	39	50	51	36	Rolled tube, hoops and strips.
Tous autres produits finis	59	23	20	25	28	26	All other finished pro- ducts.
Total.....	773	308	357	496	464	329	Total.

¹ Chiffres comparables d'avant-guerre non disponibles.

¹ No pre-war series of comparable figures available.

Annexe I.

Tableau 16. TCHÉCOSLOVAQUIE

PRODUCTION DE FER ET ACIER, MI-FINIS ET FINIS.

(En milliers de tonnes métriques.)

Annex I.

CZECHOSLOVAKIA

Table 16.

PRODUCTION OF SEMI-FINISHED AND FINISH IRON AND STEEL.

(000's metric tons.)

	1909	1910	1911	1912	1913	1923	1924	1925	
Rails, traverses, éclisses . . .	82	55	63	68	74	74	89	58	Rails, sleepers, fishplates
Longuerines	106	112	127	137	97	43	62	73	Girders
Barres et fils laminés	241	282	322	414	306	508	472	534	Bars and rolled wire
Plaques et tôles	73	73	81	90	74	148	183	252	Plates and sheets
Tôles galvanisées	16	19	19	20	19	20	22	22	Galvanized sheets
Total . . .	518	541	612	729	570	793	828	939	Total

ANNEX II.

**STATEMENTS CONCERNING THE NUMBER OF OCCUPIED WORKERS,
UNEMPLOYMENT, HOURS OF WORK AND WAGES IN THE IRON AND
STEEL INDUSTRY OF CERTAIN COUNTRIES.**

Prepared from information collected by the International Labour Office.

NUMBER OF OCCUPIED WORKERS.

The total number of workmen employed in the iron and steel industry in certain countries is given below with available specification according to main branches of production:

United States:

Blastfurnaces	}	1914	29,356
		1923	36,712
Steel-works and rolling-mills	}	1914	248,716
		1923	388,201
Total	}	1914	278,072
		1923	424,913

Average number of wage-earners engaged in the industry according to the Census of Manufactures, 1923. Later date not available.

United Kingdom. — 1924:

Blastfurnaces, including coke ovens at blast-furnaces	28,533
Steel furnaces and rolling-mills, etc.	117,052
Total	145,585

Average number employed according to statistics of the National Federation of Iron & Steel Manufacturers. Wrought iron, tinplate and galvanised sheet workers not included.

Blastfurnaces	}	Dec. 1924	30,190
		July 1926	24,490
Steel furnaces and rolling-mills etc.	}	Dec. 1924	236,530
		July 1926	193,850
Total	}	Dec. 1924	266,720
		July 1926	218,340

Number of workers insured under the Unemployment Insurance Act. These statistics include the workers in certain branches of production excluded above.

Germany. — 1924:

Blastfurnaces	24,371
Steel-works	33,287
Rolling-mills	90,830
Total	148,488

Average number employed according to information communicated by the *Fachgruppe der Eisen schaffenden Industrie beim Reichsverband der Deutschen Industrie.*

France. — 1926:

Blastfurnaces	22,300
Steel-works and rolling-mills	87,000
Total	109,300

Estimate of the *Comité des Forges de France.*

Belgium:

Blastfurnaces	}	1913	5,289
		1925	5,930
Steel-works	}	1913	*
		1925	10,703
Rolling-mills	}	1913*	30,011
		1925	23,955
Total	}	1913	35,300
		1925	40,588

According to official statistics on the mining and metallurgical industries.

* The number of workers employed in the steel-works in 1913 is included in that shown for the rolling-mills.

Luxemburg:

Blastfurnaces	{	1913	5,233
		1925	6,222
Steel-works	{	1913	*
		1925	2,638
Rolling-mills	{	1913*	6,514
		1925	5,978
Foundries	{	1913	432
		1925	1,042
Total	{	1913	12,179
		1925	15,890

According to the reports of the Luxemburg Chamber of Commerce.

* The number of workers employed in the steel-works in 1913 is included in that shown for the rolling-mills.

Sweden:

Iron and steel works including blast-furnaces and foundries, etc.	{	1913	27,146
		1925	25,397

According to official mining statistics.

Spain. — 1924:

Iron production	13,125
Steel production	8,094
Total	21,219

According to information submitted to the Preparatory Committee for the Economic Conference.

UNEMPLOYMENT.

There are no comparative statistics as to the average number of unemployed workers in the iron and steel industry. In *Germany*, the official returns do not state to what branch of industry the unemployed belong and the Trade Union figures comprise all metal-workers in a single group. *The Reichsverband der Deutschen Industrie* merely observes that unemployment increased considerably in the iron and steel industries during the year 1925. In the *United Kingdom* the proportion of unemployed to the total number of workers was estimated at the end of 1924 at 18 per cent in the pig-iron industry and 29.6 per cent in the steel industry (as against 10.8 per cent for all industries). From the monthly statistics published since 1920 on the number of unemployed, we extract the following information showing the percentage of unemployed in the blastfurnaces and rolling-mills:

	March 1914	March 1924	March 1925	March 1926	December 1926
(a) Blastfurnaces:					
Percentage of unemployed	—	11.8	18.1	15.4	44.7
(b) Iron and steel rolling-mills:					
Percentage of unemployed	2.9 ¹	16.3	23.9	20.1	34.5
Number of working days of the establishments in question	564,214 ¹	423,734	360,144	404,400	274,826
Number of workers represented by these establishments	103,308 ¹	78,883	67,328	75,407	51,805

In the *United States*, the monthly index of the labour employed in the iron and steel industries gives the following average figures for 1924 and 1925 and for the last few months of 1926:

¹ Trade Union returns.

Index of Labour employed in the Iron and Steel Industry.

<i>Date</i>	1923 (monthly average) = 100
1924 (average)	93.5
1925 "	95.9
September 1926	98.2
October 1926	98.1
November 1926	97.0

The number of workers represented in the calculation for November 1926 was 285,173.

HOURS OF WORK.

In the absence of exact comparative statistics, it is impossible to draw up a table of the real working-day in the iron and steel industry. In a general way it may be said that a fundamental change has taken place since 1914 through the substitution of the three-shift for the two-shift system. It must be noted, however, on the one hand that the eight-hour day was already adopted before the war in certain regions (more especially of the United Kingdom) and that, on the other hand, it is not yet generally applied, even with the modifications necessary where the furnaces are maintained continuously in full blast. In the *United Kingdom*, the average duration of work in summer was, in 1924, according to the results of an enquiry by the Ministry of Labour, 50 hours per week in the blastfurnaces and 44 hours in the steel-works and rolling-mills

In the *United States*, prior to 1924, the blastfurnace and open-hearth furnace departments were largely on a 12-hour day basis and bar-mills usually operated two turns per day of from 9 to 12 hours each. Available information for 1924, however, shows that the eight-hour day had been adopted at that time to a large extent by the plants in all three departments, only a few of them still retaining the 12-hour day. Since then there has been practically no change in the hours of work in either blastfurnaces, open-hearth furnaces or bar-mills.

In *Germany*, at the end of 1923, an order was made authorising the prolongation of the working-day beyond eight hours in all the iron and steel industries, but a new ordinance in 1925 made the application of the eight-hour day compulsory for work in blastfurnaces and cokeries. In *France* and in *Belgium* the application of the eight-hour day is provided for by law and by regulations.

OUTPUT PER HEAD.

It is generally considered impossible to calculate the average output per worker owing to the variety of the work done and the absence of any international definition of the categories of work and of workers under consideration, and also because of the varying standards of plant and equipment prevailing in the various works.

WAGES.

Figures for the *total wages paid* to the workers in the iron and steel industry are available only for a few countries as shown below:

United States:

	<i>Total wage bill</i>	<i>Average per head</i>	
Blastfurnaces	{ 1914 \$22,780,000	\$775	According to Census of Manufactures 1923. Later date not available.
	{ 1923 \$58,935,000	\$1,605	
Steel-works and rolling-mills	{ 1914 \$188,143,000	\$756	
	{ 1923 \$637,825,000	\$1,643	
Total	{ 1914 \$210,923,000	\$760	
	{ 1923 \$696,760,000	\$1,640	

United Kingdom. — 1924:

	Total wage bill	Average per head	
Blastfurnaces, including coke ovens at blast-furnaces	£4,629,910	£162.3	According to statistics of the National Federation of Iron and Steel Manufacturers.
Steel furnaces and rolling-mills, etc.	£18,477,790	£157.7	
Total	£23,107,700	£159.5	

Wrought iron, tinplate and galvanised sheet workers not included.

Germany. — 1924:

	Total wage bill	Average per head	
Blastfurnaces	R.M. 47,691,000	R.M. 1,957	According to official returns.
Steel-works and rolling-mills	R.M.236,965,000	R.M. 1,909	
Total	R.M.284,656,000	R.M.1,917	

Luxemburg. — 1925:

	Total wage bill	Average per head	
Blastfurnaces	Frs. 49,662,000	Frs. 7,982	According to the report of the Luxemburg Chamber of Commerce.
Steel-works	» 20,858,400	» 7,907	
Rolling-mills	» 49,899,000	» 8,347	
Foundries	» 7,692,100	» 7,382	
Total	Frs. 128,111,500	Frs. 8,070	

The figures for average annual earnings of the workers employed when converted to a common gold basis will show that discrepancies of up to almost one hundred per cent exist between different producing countries in Europe. In relation to the United States of America, the discrepancy measured in terms of money in certain cases amounts to several hundred per cent.

In regard to the figures for Germany, the *Fachgruppe der Eisen schaffenden Industrie beim Reichsverband der Deutschen Industrie* remarks that 1924 was an abnormal year and that the wages in the iron and steel industry have been considerably increased since then.

With respect to the *wage rates* for different categories of the iron and steel workers in the various countries there is little reliable information available.

In the blastfurnaces, the workers are generally paid by the hour (with bonuses for output); in the *United Kingdom* and the *United States* the wages vary on a sliding scale with the selling price of the product. When the workers are paid on a piece-work basis, the wages are rated by the ton, and in some cases time-wages (by the hour) are calculated in the form of a percentage added to a basic figure.

Similar differences are found in the steel-works and rolling-mills. Data regarding wage rates are mostly available only in the form of percentages of tonnage, and in the case of time-work, percentages added to base rates. As a rule, the earnings are known only in the shape of average earnings per worker.

In the *United States* a special enquiry into wages is held every two years. The average earnings in 1913 and 1922-26 of certain categories of blastfurnace workers are shown below:

Blastfurnaces:			\$ per hour	\$ per week
Stockers	1913		0.192	15.00
	1922		0.352	26.06
	1924		0.465	28.10
	1926		0.465	27.95
Operatives	1913		0.171	12.43
	1922		0.315	21.69
	1924		0.401	25.15
	1926		0.390	24.34

The average earnings per hour in 1924, compared with those in 1913, in certain departments of the steel-works were as follows:

<i>Bessemer converters:</i>	<i>\$ per hour</i>	<i>Index</i> (1913 = 100)
All occupations	0.624	227
Operatives	0.448	233
 <i>Open-hearth furnaces:</i>		
All occupations	0.635	269
Operatives	0.434	232
 <i>Puddling shops:</i>		
All occupations	0.721	234
Operatives	0.355	205

In the United Kingdom, the returns of the Ministry of Labour show that the average wage calculated over four selected weeks of the year rose in 1924 to 63/1 for workers occupied in the production of pig iron and 61/5 for workers in the steel-works and rolling-mills. According to the *Bulletin* of the National Federation of Iron and Steel Manufacturers, the average wage of all iron and steel workers collectively amounted to 63/4 in March 1926.

No general statistics are available as to the average wages paid in Germany and France.

ANNEXE III

1. TABLEAU INDIQUANT LES DROITS DE DOUANE A L'IMPORTATION.
2. TABLEAU SOMMAIRE INDIQUANT LES IMPORTATIONS, LES EXPORTATIONS ET LA BALANCE DU COMMERCE EN FONTE, ACIER BRUT, ARTICLES EN FONTE DE FER ET D'ACIER ET AUTRES ARTICLES DE FER ET D'ACIER.

ANNEX III

- (1) TABLE SHOWING CUSTOMS IMPORT DUTIES.
- (2) SUMMARY TABLE SHOWING IMPORTS, EXPORTS AND BALANCE OF TRADE IN PIG IRON, RAW STEEL, CAST IRON AND STEEL, AND OTHER IRON AND STEEL PRODUCTS.

Tableau 1.

DROIT DE DOUANE A L'IMPORTATION.
Taux par 100 kg., sauf indication contraire.

Table 1.

CUSTOMS IMPORT DUTIES.
Rates per 100 kg., unless otherwise noted.

Pays	Etalon monétaire Unit of currency	Fonte (forgée et de moulage) contenant moins de 15 % de manganèse		Fer rond en barres, laminé à chaud, diam. 20 à 75 mm. soit environ 20 à 60 kg. par mètre		Poutres et longuerines (acier de construction) diam. maximum 12 cm. ou plus		Rails pesant 15 kg. ou plus par mètre		Country
		1913	1926	1913	1926	1913	1926	1913	1926	
Allemagne ¹ Général Conventionnel.	Gold mark	1,—	1,—	2,50 2,50	2,50	2,50	2,50 1,50 ²	2,50	2,50	Germany ¹ General. Conventional.
Autriche : Général Conventionnel.	Gold krone	1,90	0	6,50	2,50	6,50	2,50 ³	6,—	4,50 3,—	Austria : General. Conventional.
Belgique : 1913 général 1926 maximum 1926 minimum 1926 convention. : Allemagne France	Franc papier	—,20	1,80 —,60	1,—	9,— 3,—	1,—	9,— 3,—	1,—	9,— 3,—	Belgium : 1913 general. 1926 maximum. 1926 minimum. 1926 conventional. Germany. France.
Danemark : Général	Krone papier	0	—,50	0	4,50	0	4,50	0	0	Denmark : General.
Espagne : Général Deuxième tarif Conventionnel : Royaume-Uni. France	⁴ Peseta	1,40 1,40	10,— 3,80	8,— 6,40	45,— 18,—	8,— 6,40	45,— ⁵ 18,— ⁵	7,— ⁴ 5,60 ⁴	35,— 14,—	Spain : General. Second tariff. Conventional : United Kingdom France.
France : Général Minimum Conventionnel : Autriche Estonie et Lettonie Finlande Pologne Tchécoslovaquie Canada Etats-Unis Espagne	Franc papier	2,25 1,50	12,— 3,—	6,75 4,50	30,60 7,65	7,50 5,—	34,— 8,50	9,— 6,—	36,— 9,—	France : General. Minimum. Conventional : Austria. Estonia and Latvia. Finland. Poland. Czechoslovakia. Canada. United States. Spain
Hongrie : Général Conventionnel.	Korona ⁶ (or) (gold)	1,90	2,50 0	6,50	7	6,50	7,—	6,—	7,—	Hungary : General. Conventional.
Italie : Général Conventionnel.	Lira-or	1,— 1,—	3,12 2,81	6,50 6,—	11,20 10,15	6,50 6,—	11,20 10,15	6,— 6,—	11,20 9,80	Italy : General. Conventional.
Pays-Bas : Général	Guilder	0	0	0	0	0	0	0	0	Netherlands : General.
Pologne : Général	Zloty-or		5,—		8,—		8,—		7,—	Poland : General.

¹ Conventionnel d'après-guerre : Autriche, Belgique, Italie et Suisse.

² S'applique seulement aux poutrelles « double T » aux rebords larges et parallèles dont la largeur dépasse 60 cm.

³ Exempt, quand elles dépassent 50 cm.

⁴ Or (ou équivalent).

⁵ Moins de 25 kg. par mètre.

⁶ Depuis le 15 mai 1925, couronnes-papier à 14.500 pour 1 couronne-or. (La parité exacte 14.473 couronnes-papier pour 1 couronne-or.)

¹ Post-war conventional: Austria, Belgium, Italy, and Switzerland.

² Applies only to wide and parallel-flanged « double T » girders, having a transverse section of more than 60 cm.

³ Free, if exceeding 50 cm.

⁴ Gold (or equivalent).

⁵ Less than 25 kg. per metre.

⁶ Since May 15th, 1925, paper crowns at 14,500 per gold crown. (True parity is 14,473 paper = 1 gold crown.)

Tableau 1 (suite).
DROITS DE DOUANE A L'IMPORTATION
Taux par 100 kg., sauf indication contraire.

Table 1 (continued).
CUSTOMS IMPORT DUTIES
Rates per 100 kg., unless otherwise noted.

Pays	Etalon monétaire Unit of currency	Fonte (forgée et de moulage) contenant moins de 15% de manganèse Pig-iron (forge and foundry) containing less than 15% manganese		Fer rond en barres, laminé à chaud, diam. 20 à 75mm. soit environ 20 à 60 kg. par mètre Round bar iron, hot-rolled, diam. 20 to 75 mm. (i.e. about 20 to 60 kg. per metre)		Poutres et longuerines (acier de construction) diam. maximum 12 cm. ou plus Beams and girders structural steel) greatest diam. 12 cm. or over		Rails pesant 15 kg. ou plus par mètre Rails weighing 15 kg. or more per metre		Country
		1913	1926	1913	1926	1913	1926	1913	1926	
Roumanie 1: Général Conventionnel	Leu-or	0,50	0,05	1,—	6,70	3,—	8,25	5,— 3,—	8,25	Roumania 1: General. Conventional.
Royaume-Uni: Général	£	0	0	0	0	0	0	0	0	United Kingdom. General.
Royaume des Serbes, Croates et Slovènes: Maximum Minimum Conventionnel	Dinar-or	0	4,— 3,—	2,50 0,50	6,50 5,—	4,— 2,—	14,— 12,— 10,—	6,— 1,50	14,— 12,—	Kingdom of Serbs, Croats and Slo- venes: Maximum. Minimum. Conventional.
Suède: Général	Krona	0	0	1,50	1,50	0	0	0	0	Sweden: General.
Suisse: Général Conventionnel	Franc	0,10	0,20	2,—	4,—	0,30	0,30	0,30	0,60	Switzerland: General. Conventional.
Tchécoslovaquie: Général Conventionnel	Koruna 2	1,90	19,— 9,50	6,50	78,— 39,—	6,50	78,— 39,—	6,—	72,—	Czechoslovakia: General. Conventional.
Argentine: Général	Peso-oro	0,09	0,144	0,15	0,24	0,20	1,41	0	0,32	Argentina: General.
Australie: Général Royaume-Uni Interméd. Préf. britannique	£	0 0	2.— 1.10.— 1.—	0 0	4.— 3.5.— 2.4.—	0 0	4.10.— 3.15.— 2.8.—	15% 10%	4.5.— 3.10.— 2.5.—	Australia: General. United Kingdom. Intermediate. Brit. pref.
Brésil: Général	Milreis	2,—	2,—	10,—	10,—	12,—	12,—	15,—	15,—	Brazil: General.
Canada: Général Interméd. Préf. britannique	\$	2,50 2,25 1,50	2,50 2,50 1,50	7,— 6,— 4,25	7,— 6,— 4,25	7,— 6,— 4,25	7,— 6,— 4,25	7,— 6,— 4,50	7,— 6,— 4,50	Canada: General. Intermediate. Brit. Pref.
Chine 5 6: Général	Haikwan tael	0,14	0,11	0,14	0,23	0,25	0,23	0,125	0,18	China 5 6: General.
Etats-Unis: Général	\$	0	0,75 7	5%	20% 8	10%	4,48 7	0	2,24 7	U.S.A. General.
Inde 7: Général	Rupee	1%	9,—	1%	35,—	1%	30,—	0	14,—	India 7: General.
Japon 6: Général Conventionnel	Yen	0,10 0,083	0,10 0,083	0,60	1,10	0,60	1,10	0,60	0,95	Japan 6: General. Conventional.

1 Coefficient d'après-guerre, pour paiements en lei-papier = 30, dès le 5 juin 1926. (Parité exacte = 50, environ).

2 Avant-guerre, or; après-guerre, papier.

3 Si le poids dépasse 50 lbs. par yard, les taux sont: £3 15s., £3 et £1 15s. respectivement.

4 Si le poids dépasse 120 lbs. par yard, les taux sont: 3,—, 2,75 et 2,— respectivement (avant-guerre); après guerre, 3,—, 3,— et 2,—.

5 Augmentés de 10% dès le 1er novembre 1925 (Board of Trade Journal, 17 septembre 1925, page 323).

6 Par picul = 133 1/2 lbs. anglais = 60 kg.

7 Par tonne de 1.016 kg.

8 Approximatif. Taux différents, parfois *ad valorem*, parfois spécifiques (changement d'après la valeur), de 17 à 35% *ad valorem*, environ.

1 Post-war coefficient for payments in paper-lei = 30, from June 5th, 1926. (True parity = about 50).

2 Pre-war, gold; post-war, paper.

3 If over 50 lbs. per yard; the rates are: £3 15s., £3 and £1 15s. respectively.

4 If over 120 lbs. per lineal yard, the rates are: 3,—, 2,75 and 2.— respectively (pre-war); post-war, 3.—, 3.— and 2.—.

5 After November 1st, 1925, increased by 10 per cent (Board of Trade Journal, September 17th, 1925, page 323).

6 Per picul = 133 1/2 lbs. English = 60 kg.

7 Per long ton.

8 Approximate. Various rates some *ad valorem*, some specific (varying by value ranging from about 17 to 35 per cent *ad valorem*).

Tableau 1 (suite).

DROITS DE DOUANES A L'IMPORTATION
Taux par 100 kg. sauf indication contraire.

Table 1 (continued).

CUSTOMS IMPORT DUTIES
Rates per 100 kg. unless otherwise noted.

Pays	Etalon monétaire	Acier rapide (en lingots)		Acier p ^r machines (en lingots)		Plaques d'acier (brutes) de 5 ^m d'épaisseur		Tubes et tuyaux en fer malléable, bruts 2 ^m d'épaisseur, moins de 40 cm. de diam.		Country
		Unit of currency	High-speed-tool steel (in ingots)	Machine steel (in ingots)	Steel plates (rough) 5 ^m thick	Tubes and pipes of malleable iron, rough 2 ^m thick, less than 40 cm. diameter				
		1913	1926	1913	1926	1913	1926	1913	1926	
Allemagne 1:										Germany 1:
Général	Gold	1,50	3,— ²	1,50 ⁴	1,50 ⁴	3,—	3,—	6,—	6,—	General.
Conventionnel. . .	Mark	1,50	18,— ³ 2,50 ² 11,50 ³	1,50 ⁴	— ⁴			5,—	5,—	Conventional.
Autriche:										Austria:
Général	Gold	3,80	0 ²	3,80	0 ²	9,50	1,—	15,50	11,—	General.
Conventionnel. . .	Kronen								0	Conventional.
Belgique:										Belgium:
1913 général . . .	Franc	1,—		1,—		1,—		2,—		1913 general.
1926 maximum . .	papier		15 %		15 %		13,50		36,— ⁵	1926 maximum.
1926 minimum . .			5 %		5 %		4,50		63,— ⁶	1926 minimum.
1926 conventionnel			10 %		10 %		6,75		12,— ⁵ 21,— ⁶ 21,60 ⁵ 36,75 ⁶	1926 conventional
Allemagne.										Germany.
Tchécoslovaquie. .									21,60 ⁵ 36,75 ⁶	Czechoslovakia.
Danemark:										Denmark:
Général	Krone	0	0	0	0	0	0	0	0	General.
Espagne:										Spain:
Général	Peseta	8,—	75,—	8,—	75,—	11,—	58,—	9,—	85,— ²	General.
Deuxième tarif . .	7	6,40	30,—	6,40	30,—	8,—	22,—	7,—	34,— ²	Second tariff.
Conventionnel. . .										Conventional.
Royaume-Uni. . . .			27,—		27,—		20,70			United Kingdom.
France			27,—		27,—		20,70			France.
Suède, Italie			27,—		27,—					Sweden, Italy.
France:										France:
Général	Franc	22,50	156,—	7,50	78,—	10,50	39,20	13,50	126,—	General.
Minimum.	papier	15,—	39,—	6,50	19,50	7,—	9,80	9,—	31,50	Minimum.
Conventionnel:										Conventional:
Autriche			85,80		78,—		39,20		126,—	Austria.
Estonie										Estonia.
Lettonie et			156,—		78,—		39,20		126,—	Latvia and
Finlande										Finland.
Pologne			85,80		78,—		30,38		31,50	Poland.
Tchécoslov.			85,80		78,—		30,38		78,75	Czechoslovakia.
Canada.			58,50		22,50		14,70		47,25	Canada.
Etats-Unis										U.S.A.
Espagne			39,—		19,50		9,80		31,50	Spain.
Hongrie:										Hungary:
Général	Korona	3,80	25,—	3,80	9,—	9,50	9,50	15,50	20,—	General.
Conventionnel. . .	gold ⁸		15,—		6,—					Conventional.

1 Conventionnel d'après-guerre: Autriche, Belgique, Italie et Suisse.

2 Alliages de bas contenu.

3 Alliages de haut contenu.

4 Non donné séparément dans le tarif allemand. Mêmes taux que pour « acier rapide ».

5 Tirés à chaud.

6 Tirés à froid.

7 Or (ou équivalent).

8 Depuis le 15 mai 1925, couronnes-papier à 14.500 francs-or.

(La parité exacte: 14.473 cour.-papier pour 1 cour.-or.)

1 Post-war conventional: Austria, Belgium, Italy and Switzerland.

2 Low-alloyed.

3 High-alloyed.

4 Not specified in German tariff. Same rates as high-speed-tool steel.

5 Hot-drawn.

6 Cold-drawn.

7 Gold (or equivalent).

8 Since May 15th, 1925, paper crowns at 14,500 per gold-crown. (True parity is 14,473 paper = 1 gold-crown.)

Tableau 1 (suite).

DROITS DE DOUANE A L'IMPORTATION.
Taux par 100 kg., sauf indication contraire.

Table 1 (continued).

CUSTOMS IMPORT DUTIES.
Rates per 100 kg., unless otherwise noted.

Pays	Etalon monétaire Unit of currency	Acier rapide (en lingots) High-speed-tool steel (in ingots)		Acier p ^r machines (en lingots) Machine steel (in ingots)		Plaques d'acier (brutes) de 5 ^m d'épaisseur Steel plates (rough) 5 ^m thick		Tubes et tuyaux en fer malléable, bruts 2 ^m d'épaisseur, moins de 40 cm. de diam. Tubes and pipes of malleable iron, rough 2 ^m thick, less than 40 cm. diameter		Country
		1913	1926	1913	1926	1913	1926	1913	1926	
Italie:										Italy:
Général	Lira-or	?	?	?	?	7,—	13,60	15,—	24,—	General.
Conventionnel. . .		2,75	3,90	2,75	3,90	7,—	11,90	14,—	24,—	Conventional.
Pays-Bas:										Netherlands:
Général	Guilder	0	0	0	0	0	0	0	0	General.
Pologne:										Poland:
Général	Zloty-or		5,—		5,—		8,—		25,—	General.
Roumanie 1:										Roumania 1:
Général	Leu-or	9,— ?	13,50 ?	9,— ?	13,50 ?	3,—	9,—	9,—	4,—	General.
Conventionnel. . .								7,—		Conventional.
Royaume-Uni:										United Kingdom:
Général	Livre sterling	0	0	0	0	0	0	0	0	General.
Royaume des Serbes, Croates et Slovénes:										Kingdom of the Serbs, Croats and Slovenes:
Maximum	Dinar-or	4,—	14,—	4,—	14,—	6,—	14,—	15,—	15,—	Maximum.
Minimum		2,—	10,—	2,—	10,—	5,—	12,—	8,50	12,—	Minimum.
Conventionnel. . .			10,—		10,—		10,—			Conventional.
Suède:										Sweden:
Général	Krona	7,50	7,50	7,50	7,50	3,—	3,—	4,—	4,—	General.
Suisse:										Switzerland:
Général	Franc	2,50	1,—	0,10	0,50	0,60	0,60	1,—	1,—	General.
Conventionnel. . .		0,60						0,60		Conventional.
Tchécoslovaquie:										Czechoslovakia:
Général	Koruna 2	3,80	38,—	3,80	38,—	9,50	114,—	15,50	248,—	General.
Conventionnel. . .			22,—		22,—		58,50		173,60	Conventional.
Argentine:										Argentina:
Général	Peso-oro	2,—	3,52	2,—	3,52		3,52	2,—	3,46	General.
Australie:										Australia:
Général	Livre sterling	0	30 %	0	30 %	0	4,5.—	0	40 %	General.
Royaume-Uni. . . .		0		0		0		0		United Kingdom.
Interméd.			25 %		25 %		3,8.—		35 %	Intermediate.
Préf. britannique			20 %		20 %		2,8.—		27 ½ %	British pref.
Bésil:										Brazil:
Général	Milreis	12,—	12,—	12,—	12,—	12,—	12,—	10,—	10,—	General.
Canada:										Canada:
Général	\$	7,—	7,—	7,—	7,—	3,—	3,—	15 % 3	30 % 4	General.
Interméd.		6,—	6,—	6,—	6,—	2,75	2,75	12,5 % 3	30 % 4	Intermediate.
Préf. britannique		4,25	4,25	4,25	4,25	2,—	2,—	10 % 3	20 % 4	British pref.
Chine: 5 6										China: 5 6
Général	Haikwan tael	0,75	5 %	0,75	5 %	0,25	0,23	5 %	5 %	General.
Etats-Unis:										U.S.A.:
Général	\$	15 %	8 %	15 %	8 %	15 %	20 % 7	10 %	16,80 8	General.
Inde 8:										India 8:
Général	Rupee	1 %	10 %	1 %	10 %	1 %	30,—	1 %	10 %	General.
Japon 9:										Japan 9:
Général	Yen	7,5 %	10 %	7,5 %	10 %	0,60	1,10	2,80	18 % 9	General.
Conventionnel. . .										Conventional.

1 Coefficient d'après-guerre pour paiements en lei-papier = 30, dès le 5 juin 1926 (parité exacte: 50 env.)

2 Avant-guerre, or; après-guerre, papier.

3 Dépassant le diamètre de 4 pouces.

4 Diamètre de 4 à 10 pouces. Les taux pour ceux de plus de 10 pouces sont: 15, 15, 10 % pour ceux de moins de 4 pouces, 30, 27 ½, 15 %.

5 Augmentés de 10 % dès le 1^{er} novembre 1925 (Board of Trade Journal, 17 septembre 1925, page 323).

6 Par picul = 133 1/3 lb. anglais = 60 kg.

7 Approximatif. Taux différents, parfois ad valorem, parfois spécifiques (changeant d'après la valeur) de 17 à 35 %, environ.

8 Par tonne de 1,016 kg.

9 Au-dessous de 15 cm. de diamètre: autres = 15 %.

1 Post-war coefficient for payments in paper-lei = 30, from June 5th, 1926 (true parity about 50).

2 Pre-war, gold; post-war, paper.

3 Over 4 inches diameter.

4 4 to 10 inches diam. Rates for over 10 in. are: 15, 15, 10 per cent. Rates for under 4 in. are: 30, 27 ½, 15 per cent.

5 After November 1st, 1925, increased by 10 per cent (Board of Trade Journal, September 17th, 1925, page 323).

6 Per picul = 133 1/3 lb. English = 60 kg.

7 Approximate. Various rates, some ad valorem, some specific (varying by value) ranging from about 17 to 35 per cent ad valorem.

8 Per long ton.

9 Under 15 cm. diameter. Other = 15 per cent.

Tableau 2.

COMMERCE DE FONTE ET DE FER ET ACIER.
En milliers de tonnes métriques.

Pays	Fonte Pig iron			Acier brut: lingots, loupes, billets, planches Raw steel: ingots, blooms, billets, slabs			Articles en fonte de fer et d'acier Cast iron and steel products			Autres articles de fer et d'acier Other iron and steel products			Total de fonte, fer et acier Total iron and steel			Country
	Im- port.	Ex- port.	Ba- lance ¹	Im- port.	Ex- port.	Ba- lance ¹	Im- port.	Ex- port.	Ba- lance ¹	Im- port.	Ex- port.	Ba- lance ¹	Im- port.	Ex- port.	Ba- lance ¹	
Allemagne 1913 ²	126	856	- 730	11	701	- 690	20	213	- 193	148	4.539	- 4.391	305	6.309	- 6.004	1913 ³ Germany.
1923	313	92	+ 221	298	62	+ 236	12	130	- 118	1.136	1.044	+ 92	1.759	1.328	+ 431	1923
1924	264	67	+ 197	162	47	+ 115	23	118	- 95	841	1.326	- 485	1.290	1.558	+ 268	1924
1925	207	226	- 19	214	108	+ 106	19	70	- 51	760	2.859	- 2.099	1.200	3.263	- 2.063	1925
Belgique 1913	579	17	+ 562	82	159	- 77	10	27	- 17	217	1.372	- 1.155	888	1.575	- 687	1913 Belgium.
Belgique 1923	380	81	+ 249	99	434	- 335	5	24	- 19	121	1.995	- 1.874	555	2.534	- 1.979	1923 Belgium
and 1924	327	130	+ 197	84	731	- 647	4	29	- 25	154	2.421	- 2.267	569	3.311	- 2.742	1924 and
Luxemb. 1925	325	97	+ 228	68	923	- 855	5	28	- 23	140	2.064	- 1.924	538	3.112	- 2.574	1925 Luxembourg
Espagne 1913				105	10	+ 95				81	1	+ 80	186	11	+ 175	1913 Spain
1923				189	5	+ 184				49	2	+ 47	238	7	+ 231	1923
1924				203	24	+ 179				49	3	+ 46	252	27	+ 225	1924
1925				217	4	+ 213				59	3	+ 56	276	7	+ 269	1925
Etats-Unis 1913	157	292	- 135	22	235	- 213	-	3	-	78	2.428	- 2.350	257	2.955	- 2.698	1913 United States.
1923	483	38	+ 445	23	7	+ 16	-	28	- 28	83	1.902	- 1.819	589	1.975	- 1.386	1923
1924	281	46	+ 235	40	5	+ 35	-	29	- 29	186	1.658	- 1.472	507	1.738	- 1.231	1924
1925	448	39	+ 409	27	4	+ 23	-	33	- 33	300	1.629	- 1.329	775	1.705	- 930	1925
France 1913	50	113	- 63	19	321	- 302				103	196	- 93	172	630	- 458	1913 France
1923 ⁴	82	494	- 412	114	907	- 793	3	3		192	889	- 697	388	2.290	- 1.902	1923 ⁴
1924 ⁴	56	646	- 590	77	1.297	- 1.220				127	996	- 869	260	2.939	- 2.679	1924 ⁴
1925 ⁴	51	710	- 659	28	2.096	- 2.068				86	1.069	- 983	165	3.875	- 3.710	1925 ⁴
Italie 1913	222	1	+ 221	7	-	+ 7	31	-	+ 31	250	18	+ 232	510	19	+ 491	1913 Italy
1923	132	-	+ 132	5	-	+ 5	3	-	+ 3	81	7	+ 74	221	7	+ 214	1923
1924	202	5	+ 197	30	-	+ 30	4	-	+ 4	147	7	+ 140	383	12	+ 371	1924
1925	266	2	+ 264	150	-	+ 150	4	-	+ 4	365	6	+ 359	785	8	+ 777	1925
Japon 1923	366	-	+ 366							634	30	+ 604	1.000	30	+ 970	1923 Japan
1924	457	-	+ 457	3	3		3	3		976	52	+ 924	1.433	52	+ 1.381	1924
1925	316	-	+ 316							473	55	+ 418	789	55	+ 734	1925
Pologne 1923	94	1	+ 93	9	105	- 96	11	38	- 27	87	219	- 132	201	363	- 162	1923 Poland
1924	19	9	+ 10	4	20	- 16	5	2	+ 3	47	117	- 70	75	148	- 73	1924
1925	14	2	+ 12	4	16	- 12	5	3	+ 2	29	79	- 50	52	100	- 48	1925
Royaume-Uni ⁵ 1913	219	1.142	- 923	522	4	+ 518	24	240	- 216	1.502	3.663	- 2.161	2.267	5.049	- 2.782	1913 United Kingdom ⁵
1923	112	906	- 794	434	20	+ 414	21	90	- 69	776	3.371	- 2.595	1.343	4.387	- 3.044	1923
1924	315	610	- 295	719	11	+ 708	35	87	- 52	1.399	3.207	- 1.808	2.468	3.915	- 1.447	1924
1925	291	569	- 278	663	5	+ 658	44	97	- 53	1.766	3.120	- 1.354	2.764	3.791	- 1.027	1925
Suède 1913	100	195	- 95	-	15	- 15	17	10	+ 7	173	294	- 121	290	514	- 224	1913 Sweden
1923	35	108	- 73	-	5	- 5	17	5	+ 12	173	120	+ 53	225	238	- 13	1923
1924	44	92	- 48	-	7	- 7	14	6	+ 8	273	172	+ 101	331	277	+ 54	1924
1925	51	80	- 29	-	5	- 5	15	7	+ 8	237	181	+ 56	303	273	+ 30	1925
Tchéco-slovaquie 1923	16	184	- 168							11	360	- 349	27	544	- 517	1923 Czecho-slovakia
1924	64	82	- 18	3	3		3	3		20	301	- 281	84	383	- 299	1924
1925	62	83	- 21							27	401	- 374	89	484	- 395	1925

¹ Excédent d'exportation —; excédent d'importation +.² Territoire d'avant-guerre, y compris Luxembourg.³ Non donnés séparément.⁴ Y compris la Sarre. Les statistiques officielles du commerce pour la France comprennent la Sarre en 1925. Dans le tableau ci-dessus, les chiffres pour 1923 et 1924 ont également été modifiés conformément aux chiffres disponibles relatifs au commerce du fer et de l'acier de la France et de l'Allemagne avec la Sarre, afin de les rendre comparables avec les chiffres de 1925.⁵ 1913 y compris Irlande; 1923-1925 non compris l'Etat libre d'Irlande.

Table 2.

TRADE IN PIG IRON AND OTHER IRON AND STEEL PRODUCTS.
Metric tons (000's omitted).

¹ Export surplus —; import surplus +.² Pre-war territory, including Luxembourg.³ Not shown separately.⁴ The official trade statistics of France include the Saar in 1925. In the above table also the figures for 1923 and 1924 have been adjusted in accordance with available figures for the iron and steel trade of France and Germany with the Saar in order to make them directly comparable with the figures for 1925.⁵ 1913 including Ireland; 1923-1925 excluding Irish Free State.

ANNEXE IV.

TABLEAUX DÉTAILLÉS DES IMPORTATIONS ET EXPORTATIONS DES
MINÉRAIS DE FER, DÉCHETS DE FER ET DE PRODUITS
EN FER ET EN ACIER DES PRINCIPAUX PAYS
CONSOMMATEURS ET PRODUCTEURS.

ANNEX IV.

DETAILED TABLES OF IMPORTS AND EXPORTS OF IRON ORE, SCRAP
IRON, AND IRON AND STEEL PRODUCTS OF THE PRINCIPAL
CONSUMING AND PRODUCING COUNTRIES.

ALLEMAGNE

GERMANY

1 : A

COMMERCE EN MINÉRAI DE FER ET DÉCHÊTS DE FER.

TRADE IN IRON ORE AND SCRAP IRON.

Milliers de tonnes métriques						Metric tons (000's omitted).			
Pays	1912	1913	1920	1921	1922	1923	1924	1925	Countries
Minérai de fer.									
Imports from:									
Spain.									
France.									
Algeria.									
Luxembourg.									
Norway.									
Sweden.									
Other countries.									
									Total Imports.
									Total Exports.
Déchets de fer.									
Imports from:									
Total Imports.									
Total Exports.									

1 : B.

IMPORTATIONS DE FONTE, FER ET ACIER PAR ARTICLES
ET PAR PAYS D'ORIGINE.IMPORTS OF IRON AND STEEL BY ARTICLES AND BY
COUNTRIES OF ORIGIN.

Articles.	1912	1913	1920	1921	1922	1923	1924	1925	Articles.
Fonte et alliages de fer	140	126	106	136	306	313	264	207	Pig iron and ferro-alloys.
Tuyaux en fonte	1	1	12	20	39	7	17	19	Cast-iron pipes.
Parties de machines en fonte	9	8	2	4	2	2	2	—	Cast-iron machine parts.
Autres articles en fonte	12	11	4	1	11	3	4	—	Other castings.
Lingots	12	11	34	124	325	298	162	214	Ingots.
Longuerines	2	1	78	233	163	77	45	131	Girders.
Feuillards et bandes	26	25	—	—	642	512	434	347	Hoops and strips.
Plaques, épaisseurs	4	2	—	—	46	49	43	10	Plates, thick.
Plaques entre 1 et 5 mm d'épaisseur	1	1	17	30	28	47	36	20	Plates over 1 and under 5 mm.
Tôles de 1 mm d'épaisseur max.	13	13	—	—	26	45	17	25	Sheets up to 1 mm.
Plaques étamées, tôles galvanisées et autres plaques recouvertes	49	42	4	3	18	21	18	17	Tinned plates, galvanised sheets and other coated plates.
Autres plaques	—	—	—	—	1	2	1	—	Other plates.
Fils de fer laminés ou tirés, et tiges	15	12	14	31	51	108	50	48	Wire, rolled or drawn, and wire rods.
Fils de fer et câbles	1	1	—	—	—	—	—	—	Wire and wire ropes.
Autres articles en fil	1	1	—	—	—	—	—	—	Other wire goods.
Clous en fil	1	1	—	—	—	—	—	—	Wire nails.
Tubes en spirale et autres	5	8	2	3	12	36	24	15	Coil tubes and other tubes.
Rails, rails de tramways, traverses, éclisses et autres matériaux de voie ferrée	2	—	16	69	147	198	134	96	Rails, tram rails, sleepers and fishplates, and other per- manent-way material.
Roues de chemins de fer, essieux et bandages	2	1	—	—	3	14	5	1	Railway wheels, axles and tyres.
Articles de fer et acier, fer en bar- res laminé ou étiré à froid	21	23	5	5	11	8	10	—	Iron and steel goods, bar iron, cold-rolled or drawn.
Fer et acier de construction	—	1	3	2	3	2	—	5	Structural iron and steel.
Vis, clous et rivets	1	2	2	4	7	3	9	—	Screws, nails and rivets.
Chaines, etc.	4	4	—	—	—	—	—	—	Chains, etc.
Non spécifiés	10	10	20	10	15	14	15	45	Unenumerated.
Total	332	305	319	675	1.856	1.759	1.290	1.200	Total.

1 Mai-décembre.

1 May-December.

ALLEMAGNE (suite)

1 : B

GERMANY (continued)

IMPORTATIONS DE FONTE, FER ET ACIER PAR ARTICLES
ET PAR PAYS D'ORIGINEIMPORTS OF IRON AND STEEL BY ARTICLES AND BY
COUNTRIES OF ORIGIN

Pays d'origine.	Milliers de tonnes métriques.						Metric tons (000's omitted).		Countries of Origin.
	1912	1913	1920	1921	1922	1923	1924	1925	
Belgique	167	11	2	—	5	—	2	18	Belgium.
France	42	7	3	27	5	2	2	30	France.
Royaume-Uni	38	160	12	1	55	248	81	50	United Kingdom.
Suède	8	75	20	14	21	63	27	46	Sweden.
Autriche	5	24	7	3	21	146	22	15	Austria.
Etats-Unis	5	12	19	13	1	—	2	—	United States.
Luxembourg	—	—	54	207	516	153	206	199	Luxemburg.
Tchécoslovaquie	—	—	7	4	23	320	136	72	Czechoslovakia.
Sarre	—	—	151	276	480	258	317	437	Saar.
Alsace-Lorraine	—	—	14	113	507	113	272	192	Alsace-Lorraine.
Haute-Silésie polonaise	—	—	1	3	187	409	194	73	Polish Upper Silesia.
Autres pays	67	16	29	14	35	47	29	68	Other countries.
Total	332	305	319	675	1.856	1.759	1.290	1.200	Total.

1 : C.

EXPORTATIONS DE FONTE, FER ET ACIER PAR ARTICLES
ET PAR PAYS DE DESTINATION.EXPORTS OF IRON AND STEEL BY ARTICLES AND BY
COUNTRIES OF DESTINATION.

Articles.	1912				1921				Articles.
	1912	1913	1920	V-XII	1922	1923	1924	1925 ¹	
Fonte et alliage de fer	1.059	856	84	176	180	92	67	226	Pig iron and ferro-alloys.
Tuyaux en fonte	57	73	23	23	49	36	35	70	Cast-iron pipes.
Autres articles en fonte	24	130	84	60	108	94	83	—	Other castings.
Lingots, loupes, billettes et planches	695	701	20	27	112	62	47	108	Ingots, blooms, billets and slabs.
Longuerines	497	447	460	345	39	25	24	71	Girders.
Feuillards et bandes	487	1.173	—	—	474	172	222	536	Hoops and strips.
Plaques épaisses	299	461	—	—	170	117	122	299	Plates, thick.
Plaques de 1 à 5 mm. d'épaisseur	92	108	232	150	47	37	50	58	Plates over 1 and under 5 mm.
Tôles d'un mm. maximum	33	41	—	—	26	13	29	32	Sheets, up to 1 mm.
Plaques étamées, tôles galvanisées	—	—	—	—	—	—	—	—	Tinned plates, galvanised sheets.
Plaques et tôles, autres	49	54	16	23	27	19	18	35	Other plates and sheets.
Fils, laminés ou tirés, tiges de fil	434	462	84	118	174	123	175	340	Wire, rolled or drawn, wire rods.
Tuyaux et tubes	237	336	84	72	135	53	88	240	Pipes and tubes.
Rails	523	501	—	—	286	42	58	293	Rails.
Traverses	139	102	—	—	23	4	23	79	Sleepers.
Eclisses	53	33	140	210	33	5	8	32	Fishplates.
Solives de rails et autre matériel	—	—	—	—	—	—	—	—	Rail joist studs and other rail-
de chemin de fer	35	34	—	—	26	10	12	—	way material.
Roues de chemin de fer, essieux,	—	—	—	—	—	—	—	—	Railway wheels, axles and buffer
tampons de ressort	111	113	29	39	52	18	22	71	springs.
Fer et acier de construction	86	109	44	43	50	16	23	48	Structural iron and steel.
Vis, clous, rivets, écrous, boulons	23	27	25	22	29	13	24	—	Screws, nails, rivets, nuts, bolts.
Câbles, treillis, fils barbelés	7	7	23	31	65	41	73	53	Wire ropes, wire netting and
Clous de fil	57	69	31	47	67	60	70	57	barbed wire.
Non spécifiés	524	472	346	240	402	276	283	615	Wire nails.
Total	5.881	6.309	1.725	1.626	2.574	1.328	1.558	3.263	Unenumerated.
									Total.
Pays de destination.									Countries of Destination.
Belgique	794	646	67	67	108	25	7	91	Belgium.
Danemark	155	167	177	65	126	95	105	71	Denmark.
France	236	225	34	11	12	2	—	1	France.
Sarre	—	—	55	65	89	13	3	2	Saar.
Pays-Bas	555	600	490	329	464	167	114	561	Netherlands.
Royaume-Uni	1.021	1.205	41	163	160	115	125	384	United Kingdom.
Norvège	101	115	100	46	69	37	38	38	Norway.
Suède	114	150	126	68	88	61	63	92	Sweden.
Russie et Finlande	148	160	27	96	41	23	10	53	Russia and Finland.
Etats baltes	—	—	2	14	28	12	3	8	Baltic States.
Haute-Silésie polonaise	—	—	—	—	176	139	30	4	Polish Upper Silesia.
Autriche	255	243	54	98	73	24	23	28	Austria.
Tchécoslovaquie	—	—	22	26	26	5	3	13	Czechoslovakia.
Suisse	346	337	130	32	64	36	46	46	Switzerland.
Italie	266	290	37	28	43	18	18	36	Italy.
Espagne	25	61	10	6	40	7	2	19	Spain.
Roumanie	147	132	—	2	49	23	14	15	Roumania.
Indes britanniques	110	213	71	—	103	42	71	125	British India.
Indes néerlandaises	—	—	—	—	57	21	24	62	Dutch East Indies.
Chine et Japon	207	314	9	94	179	109	142	142	China and Japan.
B Brésil et Argentine	381	484	75	79	256	109	158	—	Brazil and Argentine.
Etats-Unis	27	54	1	—	23	20	18	145	United States.
Afrique du Sud britannique	—	—	—	2	29	17	24	53	British South Africa.
Autres pays ou non spécifiés	993	913	197	335	271	208	517	1.274	Other countries or unspecified.
Total	5.881	6.309	1.725	1.626	2.574	1.328	1.558	3.263	Total.

¹ Les chiffres ne sont pas exactement comparables avec ceux des années précédentes à cause du changement de classification.

¹ Figures not exactly comparable with those for earlier years on account of change in classification.

BELGIQUE

BELGIUM

2 : A.

COMMERCE EN MINÉRAI DE FER, DÉCHETS ET FERRAILLE

TRADE IN IRON ORE AND SCRAP.

	Milliers de tonnes métriques					Metric tons (000's omitted)			
	1912	1913	1920	1921	1922 I-IV	1922 V-XII	1923	1924	1925
Belgique U.E.B.L.									
Minérai de fer.									
Importations de:									
France	4.396	4.754	1.261	910	571	2.332	5.960	8.355	8.211
Norvège	170	256	170	149	64	167	340	539	475
Espagne	159	153	151	101	55	76	132	120	138
Suède	57	—	93	21	—	15	44	29	11
Portugal	51	63	50	58	27	26	26	35	28
Luxembourg	1.366	1.578	689	419	217	—	—	—	—
Autres pays	216	281	126	24	5	18	10	17	24
Importations totales	6.415	7.085	2.540	1.690	935	2.634	6.512	9.095	8.887
Exportations totales	688	725	153	176	56	732	728	1.504	1.792
Déchets et ferraille.									
Importations totales	110	122	226	196	92	217	195	111	61
Exportations totales	178	153	11	70	39	131	45	102	108

Iron Ore.	
Imports from:	
France	8.211
Norway	475
Spain	138
Sweden	11
Portugal	28
Luxembourg	—
Other countries	—
Total Imports	8.887
Total Exports	1.792

Scrap Iron.	
Total Imports.	61
Total Exports.	108

2 : B.

IMPORTATIONS DE FONTE, FER ET ACIER PAR ARTICLES ET PAR PAYS D'ORIGINE.

IMPORTS OF IRON AND STEEL BY ARTICLES AND BY COUNTRIES OF ORIGIN.

Articles:	1912	1913	1920	1921	1922	1922	1923	1924	1925	Articles:
Fonte brute	780	579	337	143	56	179	330	327	325	Pig iron
Loupes, planches et billettes etc.	69	82	297	229	62	77	99	84	68	Blooms, slabs and billets, etc.
Fers-blancs	14	13	13	7	4	10	15	14	13	Tinplates.
Articles en fonte de fer et acier	7	10	5	5	1	5	5	4	5	Iron and steel castings
Longuerines, solives etc.	2	2	16	16	4	5	6	6	15	Girders, joints, etc.
Rails	7	9	16	7	5	6	12	9	6	Rails
Plaques et tôles	25	24	35	11	7	8	14	14	14	Plates and sheets.
Tôles, barres, etc.	42	49	54	59	18	17	20	35	27	Sheets, bars, etc.
Tige de fer et fils	73	68	37	13	2	6	21	41	34	Wire rods and wire.
Tubes et tuyaux	17	22	9	7	4	8	11	8	11	Tubes and pipes.
Articles forgés, acier	17	19	27	25	8	13	15	19	15	Forged etc. steel.
Tôles galvanisées	1	1	1	1	—	1	1	—	—	Galvanised sheets.
Non spécifiés	25	10	5	4	3	4	6	8	5	Unenumerated.
Total	1.079	888	852	527	174	339	555	569	538	Total.
Pays d'origine:										
Royaume-Uni	143	158	175	42	30	62	115	117	85	Countries of Origin:
France	143	109	350	302	62	191	315	242	293	United Kingdom.
Allemagne	533	419	58	56	23	78	82	149	105	France.
Luxembourg	237	182	175	116	53	—	—	—	—	Germany.
Pays-Bas	5	6	3	3	1	2	2	4	9	Luxemburg.
Suède	2	3	3	2	1	1	5	6	5	Netherlands.
Etats-Unis	5	9	82	6	1	1	1	4	5	Sweden.
Autres pays	11	2	6	—	3	4	36	47	36	United States of America.
Total	1.079	888	852	527	174	339	555	569	538	Total.

2 : C.

EXPORTATIONS DE FONTE, FER ET ACIER PAR ARTICLES ET PAR PAYS DE DESTINATION.

EXPORTS OF IRON AND STEEL BY ARTICLES AND BY COUNTRIES OF DESTINATION.

Articles:	1912	1913	1920	1921	1922	1922	1923	1924	1925	Articles:
Fonte brute	14	17	50	178	56	105	81	130	97	Pig iron.
Loupes, planches, billettes, etc.	108	159	38	32	2	255	434	731	923	Blooms, slabs and billets, etc.
Fers-blancs	4	3	1	1	—	—	—	—	—	Tinplates.
Articles en fonte de fer et acier	23	27	18	21	6	17	24	29	28	Iron and steel castings.
Longuerines, etc.	98	96	52	31	19	133	197	261	283	Girders, etc.
Rails	173	165	51	94	22	125	205	226	171	Rails.
Tôles et plaques	195	196	418	98	33	109	200	258	269	Sheets and plates.
Barres, tôles, etc.	632	649	139	361	109	604	1.129	1.201	1030	Sheets, bars, etc.
Tiges de fer	64	55	49	20	9	37	76	89	113	Wire rods.
Fil de fer barbelé	13	13	4	2	—	1	8	14	20	Barbed wire.
Tubes et tuyaux	2	6	10	10	3	5	13	17	21	Tubes and pipes.
Clous	48	44	37	20	6	13	68	75	94	Nails.
Aciers forgés, etc.	132	139	63	56	20	51	96	260	57	Forged, etc. steel.
Tôles galvanisées	6	6	4	2	—	1	—	—	—	Galvanised sheets.
Non spécifiés	11	—	1	—	2	—	1	20	—	Unenumerated.
Total	1.523	1.575	935	926	287	1.456	2.534	3.311	3.112	Total.

BELGIQUE (suite).

BELGIUM (continued).

2 : C.

EXPORTATIONS DE FONTE, FER ET ACIER PAR ARTICLES
ET PAR PAYS DE DESTINATION.EXPORTS OF IRON AND STEEL BY ARTICLES AND BY
COUNTRIES OF DESTINATION.

Pays de destination :	Milliers de tonnes métriques.				Metric tons (000's omitted).					Countries of Destination
	1912	1913	1920	1921	1922 I-IV Belgique	1922 V-XII U.E.B.L.	1923	1924	1925	
Pays-Bas	113	108	102	49	12	54	179	113	129	Netherlands.
France	62	66	304	81	32	73	129	97	77	France.
Royaume-Uni	380	434	174	351	76	166	642	1,177	1,177	United Kingdom.
Italie	27	21	9	3	3	6	2	14	117	Italy.
Espagne	18	31	53	60	9	59	62	57	26	Spain.
Allemagne	13	11	7	1	3	453	180	414	183	Germany.
Japon	92	57	5	—	15	26	163	141	124	Japan.
Indes Britanniques	109	139	42	82	49	137	221	244	162	British India.
Egypte	45	39	27	9	4	21	36	54	64	Egypt.
Union Sud-Africaine	30	45	10	7	5	8	17	28	25	South Africa.
Australie	45	43	4	28	2	1	—	—	3	Australia.
Chine et Hong-Kong	31	54	12	—	8	19	104	139	57	China and Hong-Kong.
Brsil	116	99	16	54	9	25	66	64	66	Brazil.
Argentine	145	120	28	28	28	108	160	154	139	Argentine.
Chili	33	20	1	2	1	9	29	27	30	Chile.
Etats-Unis	2	—	—	—	—	—	—	63	134	United States of America.
Autres pays	251	288	140	171	29	291	543	516	581	Other countries.
Non dénommé	11	—	1	—	2	—	1	59	18	Unallocated.
Total	1,523	1,575	935	926	287	1,456	2,534	3,311	3,112	Total.

ESPAGNE

SPAIN

3 : A.

EXPORTATIONS DE MINERAI DE FER.

EXPORTS OF IRON ORE.

Exportations à :	Milliers de tonnes métriques				Metric tons (000's omitted).					Exports to :
	1912	1913	1920	1921	1922	1923	1924	1925		
Royaume-Uni	4,257	Pas	3,903	874	1,677	2,540	Pas	1,995	United Kingdom.	
Allemagne	480	dispo-	75	163	1,329	337	dispo-	449	Germany.	
Pays-Bas	3,053	nible.	414	605	—	—	dible.	776	Netherlands.	
Belgique	60	Not	50	37	—	132 ¹	Not	57	Belgium.	
France	466	avail-	125	142	14	141	avail-	146	France.	
Autres pays	153	able.	64	4	32	221	able.	195	Other countries.	
Total	8,649		4,631	1,825	3,052	3,371	3,827	3,618	Total.	

ÉTATS-UNIS

UNITED STATES

4 : A.

COMMERCE EN MINERAI DE FER ET DÉCHETS DE FER.

TRADE IN IRON ORE AND SCRAP IRON.

Minerai de fer.	Milliers de tonnes de 1.016 kgs.				Long tons (000's omitted).					Iron Ore.
	1912	1913	1920	1921	1922	1923	1924	1925		
Importations de :										Imports from :
Espagne	154	117	70	6	47	215	71	144	Spain.	
Suède	325	275	64	143	318	750	318	149	Sweden.	
Cuba	1,271	1,499	890	123	382	693	285	546	Cuba.	
Chili	—	—	—	8	260	635	1,145	1,114	Chile.	
Autres pays	254	353	149	36	128	475	228	237	Other countries.	
Importations totales	2,004	2,244	1,273	316	1,135	2,768	2,047	2,190	Total Imports.	
Exportations totales	832	1,221	1,145	440	602	1,117	595	631	Total Exports.	
Déchets de fer.										Iron Scrap.
Importations totales	14	41	141	41	143	162	67	100	Total Imports.	
Exportations totales	88	103	219	38	65	66	98	83	Total Exports.	

¹ Union économique belgo-luxembourgeoise.
C. E. I. 17

¹ Belgo-Luxemburg Economic Union.

ÉTATS-UNIS (suite).

UNITED STATES (continued).

4 : B.

IMPORTATIONS DE FONTE, FER ET ACIER PAR ARTICLES
ET PAR PAYS D'ORIGINE.IMPORTS OF IRON AND STEEL BY ARTICLES AND BY
COUNTRIES OF ORIGIN.

Milliers de tonnes de 1.016 kgs.

Long tons (000's omitted).

	1912	1913	1920	1921	1922	1923	1924	1925
<i>Articles:</i>								
Fonte et ferro-alliages	115	155	186	35	498	475	277	441
Fer en barres	24	30	5	2	8	8	4	12
Fer de construction	3	8	2	1	8	11	43	77
Rails	3	5	46	22	27	30	43	37
Tôles et plaques	3	4	2	2	2	2	6	4
Fers-blancs	3	13	—	—	3	10	1	—
Tiges	14	17	5	1	2	4	7	8
Lingots	22	21	24	10	28	23	39	27
Non spécifiés	—	—	—	10	1	14	79	157
<i>Total</i>	187	253	270	83	577	580	499	763
<i>Pays d'origine:</i>								
France	—	—	—	—	—	—	69	26
Belgique	7	2	—	18	80	32	95	122
Allemagne	15	25	—	5	15	32	26	85
Suède	37	50	11	6	16	19	20	15
Royaume-Uni	114	163	81	13	361	319	84	102
Canada	4	7	165	32	45	82	24	11
Autres pays	10	6	13	9	59	82	102	245
Non spécifiés	—	—	—	—	1	14	79	157
<i>Total</i>	187	253	270	83	577	580	499	763

<i>Articles:</i>
Pig iron and ferro-alloys.
Bar iron.
Structural iron.
Rails.
Sheets and plates.
Tinplates.
Wire rods.
Ingots.
Unenumerated.
<i>Total.</i>

Countries of Origin:

France.
Belgium.
Germany.
Sweden.
United Kingdom.
Canada.
Other countries.
Unallocated.
<i>Total.</i>

4 : C.

EXPORTATION DE FONTE, FER ET ACIER PAR ARTICLES
ET PAR PAYS DE DESTINATION.EXPORTS OF IRON AND STEEL BY ARTICLES AND BY
COUNTRIES OF DESTINATION.

1912 1913 1920 1921 1922 1923 1924 1925

	1912	1913	1920	1921	1922	1923	1924	1925
<i>Articles:</i>								
Fonte, ferro-manganèse et ferro-silicium	186	287	217	28	33	37	45	38
Tiges de fer	48	75	117	19	40	41	19	21
Fer en barres	16	23	47	12	187	174	5	5
Barres, autres, et tiges d'acier	146	231	629	188	7	101	116	
Billettes et lingots	234	231	217	10	14	7	5	4
Feuillards, bandes ou rouleaux	8	18	53	20	35	38	34	41
Clous en fils	63	55	93	28	55	46	22	10
Boutons, écrous, rivets	—	22	39	24	18	19	17	17
Clous, autres, y compris pointes	13	4	12	5	5	6	26	26
Tuyaux et raccords, en fonte	—	—	68	48	27	28	29	32
Tuyaux et raccords, forgés	232	282	285	345	179	194	212	240
Rails en acier	417	453	595	322	277	267	207	152
Tôles galvanisées	186	115	108	56	109	115	108	160
Tôles et plaques de fer	—	32	32	12	204	234	187	202
Plaques en acier	279	263	921	336	215	139	149	95
Tôles en acier, noires	—	133	169	193	3	3	8	12
Plaques pour navires et citernes	—	—	43	10	3	3	8	12
Fer et acier de construction	252	367	494	297	168	199	177	131
Fers-blancs	81	73	226	108	77	124	161	161
Fils de fer barbelé	103	88	130	30	71	71	87	67
Fils de fer, autres	141	138	191	69	139	121	59	55
Clous et croches, coupés à la machine	12	5	4	1	4	2	2	2
Clous pour travaux de voie ferrée	—	13	17	8	8	9	8	8
Non spécifiés	—	—	2	3	63	70	43	33
<i>Total</i>	2.417	2.908	4.709	2.172	1.931	1.944	1.711	1.678
<i>Pays de destination:</i>								
Allemagne	6	6	27	3	1	2	1	1
Belgique	22	23	85	8	4	8	10	5
France	1	3	78	55	4	7	3	9
Italie	10	23	119	50	3	3	5	10
Royaume-Uni	238	270	459	113	60	63	55	51
Pays-Bas	10	11	113	20	5	5	2	3
Suède	1	3	49	9	3	3	1	1
Espagne	1	7	26	10	6	8	4	2
Chine et Hong-Kong	28	38	209	97	98	54	54	195
Japon et Kouang-Toung	174	151	932	386	588	373	288	127
Indes britanniques	38	29	136	105	37	24	24	27
Etablissements des détroits	3	7	14	10	4	3	2	1
Argentine	115	84	219	76	80	54	55	88
Mexique	94	101	180	197	84	84	108	96
Brésil	74	72	186	57	57	51	68	46
Chili	96	61	46	38	30	33	31	44
Cuba	114	110	228	95	90	173	165	144
Canada	939	1.431	693	399	516	715	500	589
Union Sud-Africaine	36	32	46	7	10	12	31	24
Australie	92	152	64	72	43	41	23	22
Nouvelle-Zélande	14	12	14	11	5	4	3	2
Philippines	35	37	66	36	45	35	49	48
Autres pays	226	245	718	315	95	119	186	110
Non spécifiés	—	—	2	3	63	70	43	33
<i>Total</i>	2.417	2.908	4.709	2.172	1.931	1.944	1.711	1.678

<i>Articles:</i>
Pig iron, ferro-manganese and ferro-silicon.
Wire rods.
Iron bars.
All other bars and rods of steel.
Billets and ingots.
Hoops, band and scroll.
Wire nails.
Bolts, nuts and rivets.
All other nails, including tacks.
Pipes and fittings, cast.
Pipes and fittings, wrought.
Rails of steel.
Galvanised sheets.
Iron sheets and plates.
Steel plates.
Steel black sheets.
Ship and tank plates.
Structural iron and steel.
Tinplates.
Barbed wire.
All other wire.
Cut nails and spikes.
Railroad spikes.
Unenumerated.
<i>Total.</i>

Countries of Destination:

Germany.
Belgium.
France.
Italy.
United Kingdom.
Netherlands.
Sweden.
Spain.
China and Hong-Kong.
Japan and Kwantung.
British India.
Straits Settlements.
Argentine.
Mexico.
Brazil.
Chile.
Cuba.
Canada.
Union of South Africa.
Australia.
New Zealand.
Philippines.
Other countries.
Unallocated.
<i>Total.</i>

FRANCE

5 : A.

FRANCE

COMMERCE EN MINÉRAI DE FER ET DÉCHETS DE FER.

TRADE IN IRON ORE AND IRON SCRAP.

Minérai de fer.	Milliers de tonnes métriques.					Metric tons (000's omitted).			Iron Ore.
	1913	1920	1921	1922	1923	1924	1925 ¹		
Importations de :									Imports from :
Allemagne	807		5	10	149	330	719	Germany.	
Belgique	21	7							
Luxembourg	2	183	233	229				Belgium.	
Espagne	458	153	114	14	141	195	201	Luxemburg.	
Algérie	3	10	12	80	87	67	68	Spain.	
Tunisie	3	39	14	5	97	94	95	Algeria.	
Autres pays	124	13	79	37	60	39	155	Tunis.	
Importations totales	1,410	405	457	375	534	725	1,238	Total Imports.	
Exportations à :								Exports to :	
Allemagne	4,066	1,146	1,390	1,996	167	1,199	745	Germany.	
Belgique	5,036	1,583	1,141	2,401	6,453	7,744	7,454	Belgium.	
Luxembourg	2	738	1,089	1,928					
Royaume-Uni	424	256	103	244	441	579	230	Luxemburg.	
Sarre	1	1,079	1,484	2,680	2,736	2,509	1	United Kingdom.	
Pays-Bas	529	29	83	213	45	240	608	Saar.	
Autres pays	12	9	9	10	12	16	190	Netherlands.	
Exportations totales	10,067	4,840	5,299	9,472	9,854	12,287	9,227	Total Exports.	
Déchets de fer.								Scrap Iron.	
Importations totales	24	48	82	150	189	212	65	Total imports.	
Exportations à :								Exports to :	
Allemagne	33	46	159	342	56	165	529	Germany.	
Belgique	97	172	190	430	226	244	188	Belgium.	
Italie	59	54	37	138	256	325	470	Italy.	
Sarre	1	38	56	163	182	108	1	Saar.	
Autres pays	37	154	182	289	95	132	119	Other countries.	
Exportations totales	226	464	624	1,362	815	974	1,306	Total Exports.	

5 : B.

COMMERCE EN FONTE, FER ET ACIER PAR ARTICLES
ET PAR PAYS D'ORIGINE ET DE DESTINATION.TRADE IN IRON AND STEEL BY ARTICLES AND BY
COUNTRIES OF ORIGIN AND DESTINATION.

Articles:	Articles:							
	1913	1920	1921	1922	1923	1924	1925 ¹	
Importations:								Imports:
Fonte brute et ferro-alliages	50	121	42	62	70	56	51	Pig-iron and ferro-alloys.
Lingots	—	1	—	1	6	8	—	Ingots.
Loupes, billettes	19	429	172	305	254	261	28	Blooms, billets.
Acier pour outils et acier special	11	9	5	5	8	11	8	Tool and special steel.
Tiges de fer		28	12	32	42	39	6	Wire rods.
Feuillards et bandes	4	47	19	42	52	51	6	Hoops and strips.
Plaques et tôles	19	207	126	140	109	115	31	Plates and sheets.
Larges - plats (bandes lami- nées à chaud)	—	19	11	23	18	30	1	Steel-flats.
Tôles galvanisées et fer blanc	19	76	13	47	53	49	15	Galvanised sheets and tinplates.
Fil de fer	6	13	8	15	11	12	4	Wire.
Rails	2	27	16	49	39	8	1	Rails.
Autres matériels de chemin de fer et tramway	1	4	3	1	1	2	—	Other railway and tramway material.
Essieux pour chemins de fer et autres	5	5	2	4	1	1	—	Railway and other axles.
Ancre, câbles et chaînes	2	5	4	2	2	3	—	Anchors, cables and chains.
Clous et vis	3	26	7	7	4	5	—	Nails and screws.
Tubes et tuyaux	8	51	22	24	30	28	9	Tubes and pipes.
Non spécifiés	23	40	42	13	13	16	5	Unenumerated.
Total	172	1.108	504	772	713	695	165	Total

¹ La Sarre est comprise dans le territoire douanier français à partir du 5 janvier 1925.

² Compris dans l'Allemagne.

³ Compris dans « autres pays ».

¹ Saar is included in French Customs territory from January 5th, 1925.

² Included in Germany.

³ Included in "other countries".

FRANCE (suite)

FRANCE (continued)

5 : B.

COMMERCE EN FONTE, FER ET ACIER PAR ARTICLES
ET PAR PAYS D'ORIGINE ET DE DESTINATION.TRADE IN IRON AND STEEL BY ARTICLES AND BY
COUNTRIES OF ORIGIN AND DESTINATION.

Milliers de tonnes métriques		Metric tons (000's omitted)						
Importations:	1913	1920	1921	1922	1923	1924	1925 ¹	Imports:
<i>Pays d'origine:</i>								
Grande-Bretagne	50	233	42	127	123	97	60	<i>Countries of Origin:</i>
Allemagne	39	30	29	4	113	69	14	Great Britain.
Sarre	—	143	202	358	341	438	1	Germany.
Belgique	15	300	78	62	—	—	—	Saar.
Luxembourg	—	132	35	20	86	58	38	Belgium.
Etats-Unis	2	176	58	143	6	1	1	Luxemburg.
Autres pays	43	54	18	45	31	16	47	United States of America.
Non spécifiés	23	40	42	15	13	16	5	Other countries.
<i>Importations totales</i>	<i>172</i>	<i>1.108</i>	<i>504</i>	<i>772</i>	<i>713</i>	<i>695</i>	<i>165</i>	Unallocated.
<i>Exportations:</i>								
<i>Articles:</i>								
Fonte brute et ferro-alliages	113	296	671	730	614	784	710	<i>Articles:</i>
Lingots	7	25	5	3	16	8	17	Pig iron and ferro-alloys.
Loupes, billettes	314	344	606	811	913	1.311	2.079	Ingots.
Acier spécial et acier pour								Blooms, billets.
outils	2	1	1	1	3	1	1	Tool and special steel.
Tiges en fer	3	4	16	33	52	77	108	Wire rods.
Feuillards et bandes	9	18	21	35	45	57	172	Hoops and strips.
Plaques et tôles	—	—	1	1	1	2	10	Plates and sheets.
Larges - plats	2	3	3	4	4	5	12	Steel-flats.
Tôles galvanisées et fer-blanc.	6	29	19	15	35	33	55	Galvanised sheet and tinplate.
Fil de fer	76	56	138	178	246	292	241	Wire.
Rails	1	4	6	4	3	4	9	Rails.
Autras matériels pour che-	2	2	2	4	9	5	4	Other railway and tramway
mins de fer et tramways	3	30	9	5	6	7	—	material.
Essieux de chemins de fer et	18	16	20	16	24	30	—	Railway and other axles.
autres	5	6	9	12	19	19	70	Anchors, cables and chains.
Ancres, câbles et chaînes	69	50	100	110	209	174	352	Nails and screws.
Clous et vis								Tubes and pipes.
Tubes et tuyaux								Unenumerated.
Non spécifiés								
<i>Total</i>	<i>630</i>	<i>884</i>	<i>1.629</i>	<i>1.967</i>	<i>2.217</i>	<i>2.818</i>	<i>3.875</i>	<i>Total.</i>
<i>Pays de destination:</i>								
Grande-Bretagne	17	85	190	134	216	516	709	<i>Countries of destination:</i>
Belgique	289	396	887	660	849	993	1.210	Great Britain.
Allemagne	17	27	90	547	164	360	647	Belgium.
Sarre	—	45	94	170	185	196	1	Germany.
Italie	4	70	38	55	70	113	393	Saar.
Suisse	55	58	65	77	236	159	230	Italy.
Algérie	80	42	47	40	60	77	108	Switzerland.
Autres pays	99	111	118	174	228	230	226	Algeria.
Non spécifiés	69	50	100	110	209	174	352	Other countries.
<i>Exportations totales</i>	<i>630</i>	<i>884</i>	<i>1.629</i>	<i>2.967</i>	<i>2.217</i>	<i>2.818</i>	<i>3.875</i>	Unallocated.
								<i>Total exports.</i>

ITALIE

ITALY

6 : A.

IMPORTATIONS DE DÉCHETS DE FER ET MINÉRAI DE FER.

IMPORTS OF IRON SCRAP AND IRON ORE.

Milliers de tonnes métriques.		Metric tons (000's omitted).							
Déchets de fer.	1912	1913	1920	1921	1922	1923	1924	1925	Scrap Iron.
<i>Imports from:</i>									
Importations de:									Germany.
Allemagne	45	71	2	—	8	3	23	44	Argentina.
Argentine	14	—	—	—	—	—	3	73	United States.
Etats-Unis	22	—	14	—	2	1	19	34	France.
France	63	78	84	—	160	265	292	528	United Kingdom.
Royaume-Uni	24	9	—	—	16	12	15	53	British India and
Indes anglaises et Ceylan	15	—	—	—	6	12	27	34	Ceylon.
Suisse	42	47	3	—	26	12	28	24	Switzerland.
Autres pays	119	121	40	—	88	129	131	168	Other countries.
<i>Importations totales</i>	<i>344</i>	<i>326</i>	<i>143</i>	<i>—</i>	<i>306</i>	<i>434</i>	<i>538</i>	<i>958</i>	<i>Total Imports.</i>
<i>Minérai de fer.</i>									<i>Iron Ore.</i>
Importations totales	19	8	2	—	1	5	79	309	<i>Total Imports.</i>

¹ La Sarre est comprise dans le territoire douanier français à partir du 5 janvier 1925.

¹ Saar is included in French Customs territory from January 5th, 1925.

ITALIE (suite)

ITALY (continued)

6 : B.

IMPORTATIONS DE FONTE, FER ET ACIER PAR ARTICLES
ET PAR PAYS D'ORIGINE.IMPORTS OF IRON AND STEEL BY ARTICLES AND BY
COUNTRIES OF ORIGIN.

	Milliers de tonnes métriques.				Metric tons (000's omitted).				
	1912	1913	1920	1921	1922	1923	1924	1925	
<i>Articles :</i>									
Fonte et alliage de fer	267	222	158		139	132	202	266	Pig iron and ferro-alloys.
Lingots, loupes, etc.	13	7	22		4	5	30	150	Steel lingots, blooms, etc.
Pièces en fonte ou forgées.	5	31	18		5	3	4	4	Castings and forgings.
Tiges et barres	106	94	162		25	28	59	231	Rods and bars.
Fils	3	3	3		2	1	5	2	Wire.
Rails	12	7	14		1	1	1	1	Rails.
Tuyaux et tubes	14	11	13		17	9	9	7	Tubes and pipes.
Plaques	41	36	32		16	13	38	38	Plates.
Plaques galvanisées ou recouvertes	23	21	22		17	23	29	120	Galvanised and other coated plates.
Câbles en fer	—	—	1		—	—	—	—	Wire rope.
Non spécifiés	31	78	61		4	6	6	4	Unenumerated.
Total	515	510	556		230	221	383	785	Total.
<i>Pays d'origine :</i>									
Allemagne	208	184	36		10	5	11	25	Germany.
France	12	6	71		56	81	106	270	France.
Royaume-Uni	208	148	176		85	76	88	106	United Kingdom.
Belgique-Luxembourg	33	21	31		9	5	11	61	Belgium-Luxemburg.
Tchécoslovaquie	—	—	6		1	2	15	57	Czechoslovakia.
Non spécifiés }	54	151	236		69	52	152	366	{ Unspecified. Other countries.
Autres pays }									
Total	515	510	556		230	221	383	785	Total.

JAPON¹JAPAN¹

7 : B. C.

IMPORTATIONS ET EXPORTATIONS DE FONTE, FER ET
ACIER PAR ARTICLES ET PAR PAYS D'ORIGINE ET
DE DESTINATION.IMPORTS AND EXPORTS OF IRON AND STEEL BY
ARTICLES AND BY COUNTRIES OF ORIGIN
AND DESTINATION.

	Milliers de tonnes métriques				Metric tons (000's omitted).					
	1911	1912	1913	1920	1921	1922	1923	1924		1925
<i>Imports :</i>										
<i>Articles :</i>										
Fonte brute	197			349	227	344	366	457	316	Pig iron.
Tous les autres articles	421			883	526	861	634	976	473	All other articles.
Total	618			1.232	753	1.205	1.000	1.433	789	Total.
Chine	57			152	77	134	111	170	48	China.
Province de Kouang-Toung				35	71	74	74	95	103	Kwantung Province.
Indes Britanniques				48	34	101	155	160	154	British India.
Royaume-Uni	267			193	120	153	236	330	143	United Kingdom.
Allemagne	152			2	30	150	104	178	143	Germany.
Suède	10			18	23	11	4	23	8	Sweden.
Etats-Unis	90			752	368	499	146	301	122	United States of America
Belgique	37			1	23	66	94	152	44	Belgium.
Autres pays	5			31	7	17	76	24	24	Other countries.
Importations totales	618			1.232	753	1.205	1.000	1.433	789	Total Imports.
<i>Exports to :</i>										
<i>Articles :</i>										
Chine				18	15	15	8	22		China.
Kouang-Toung				20	16	12	22	29		Kwantung.
Autres pays				10	4	2	—	1		Other countries.
Exportations totales²				48	35	29	30	52	55	Total Exports³.

¹ Chiffres pour le commerce en minerai et déchets de fer ne sont pas disponibles.

² Chiffres pour exportations par article ne sont pas disponibles.

¹ Figures for trade in ore and scrap not available.

² Figures for exports by articles not available.

POLOGNE

POLAND

8 : A.

COMMERCE EN MINÉRAI DE FER ET DÉCHETS DE FER.

TRADE IN IRON ORE AND SCRAP IRON.

Milliers de tonnes métriques.

Metric tons (000's omitted).

	1920	1921	1922	1923	1924	1925	
Minérai de fer.							Iron Ore.
Importations de :							Imports from :
Allemagne	8	—	209	625	209	129	Germany.
Autres pays	4	—	31	43	26	140	Other countries.
<i>Importations totales</i>	12	—	240	668	235	259	<i>Total Imports.</i>
<i>Exportations totales</i>	5	21	52	15	—	27	<i>Total Exports.</i>
Déchets de fer.							Scrap Iron.
Importations de :							Imports from :
Allemagne	1	1	73	289	146	157	Germany.
Autres pays	—	1	3	11	6	6	Other countries.
<i>Importations totales</i>	1	2	76	300	152	163	<i>Total Imports.</i>
<i>Exportations totales</i>	1	—	15	17	4	1	<i>Total Exports.</i>

8 : B-C.

IMPORTATIONS ET EXPORTATIONS DE FONTE, FER ET
ACIER PAR ARTICLES ET PAR PAYS D'ORIGINE.IMPORTS AND EXPORTS OF IRON AND STEEL BY
ARTICLES AND BY COUNTRIES OF ORIGIN.

Milliers de tonnes métriques.

Metric tons (000's omitted).

	1920	1921	1922	1923	1924	1925	
Importations :							Imports :
<i>Articles :</i>							<i>Articles :</i>
Fonte brute	9	28	58	94	19	14	Pig iron.
Barres	12	39	72	43	6	4	Bars.
Rails	1	7	4	15	6	9	Rails.
Fers spéciaux	4	16	10	9	4	4	Special iron and steel.
Tôles	2	14	9	9	9	7	Sheets.
Ouvrages en fonte	6	6	9	11	5	5	Castings.
Ouvrages en fer et acier	2	4	3	7	6	3	Iron and steel manufactures.
Fils de fer et clous	7	15	9	13	7	2	Iron wire and nails.
Autres articles	1	1	1	—	13	4	Other articles.
<i>Total</i>	44	130	175	201	75	52	<i>Total.</i>
<i>Pays d'origine :</i>							<i>Countries of Origin :</i>
Allemagne	9	25	123	133	31	20	Germany.
Tchécoslovaquie	20	57	34	38	24	14	Czechoslovakia.
Autres pays	15	48	18	30	20	18	Other countries.
<i>Importations totales</i>	44	130	175	201	75	52	<i>Total Imports.</i>
Exportations :							Exports :
<i>Articles :</i>							<i>Articles :</i>
Fonte brute	—	1	3	1	9	2	Pig iron.
Barres	1	—	91	197	59	26	Bars.
Rails	—	1	8	16	5	3	Rails.
Fers spéciaux	—	—	37	105	20	16	Special iron or steel.
Tôles	—	—	9	4	25	22	Sheets.
Ouvrages en fonte	1	3	21	38	2	3	Castings.
Ouvrages en fer et acier	—	—	1	2	6	5	Iron and steel manufactures.
Fils de fer et clous	1	—	1	1	1	—	Iron wire and nails.
Tuyaux et raccords	—	—	—	—	20	23	Pipes and fittings.
Autres articles	—	1	—	—	1	—	Other articles.
<i>Total</i>	3	6	171	363	148	100	<i>Total.</i>
<i>Pays de destination :</i>							<i>Countries of Destination :</i>
Allemagne	2	—	162	342	119	72	Germany.
Autres pays	1	6	9	21	29	28	Other countries.
<i>Exportations totales</i>	3	6	171	363	148	100	<i>Total Exports.</i>

ROYAUME-UNI *

UNITED KINGDOM *

9 : A.

COMMERCE EN MINÉRAI DE FER ET DÉCHETS DE FER.

TRADE IN IRON ORE AND SCRAP IRON.

Minérai de fer.	En milliers de tonnes de 1.016 kgs.					Long tons (000's omitted).				Iron Ore.
	1912	1913	1920	1921	1922	1923	1924	1925		
Importations de :										Imports from :
Pays-Bas	27	27	7	14	28	30	39	32		Netherlands.
Espagne	4.290	4.714	4.138	794	1.525	2.569	2.642	1.944		Spain.
Algérie	748	763	885	416	698	998	1.119	29		Algeria.
Tunisie	239	279	314	187	207	346	320	226		Tunis.
Suède	355	367	456	177	321	609	549	491		Sweden.
Norvège	402	488	155	80	166	438	505	374		Norway.
France	171	327	209	78	236	479	507	218		France.
Grèce	194	217	39	32	20	70	42	14		Greece.
Autres pays	176	260	297	410	272	332	204	154		Other countries.
Importations totales	6.602	7.442	6.500	4.888	3.473	5.871	5.927	4.382		Total Imports.
Exportations totales	6	5	2	2	5	3	2	3		Total Exports.
Déchets de fer.										Scrap Iron.
Importations totales	63	123	436	187	105	212	452	90		Total Imports.
Exportations totales	126	117	45	38	156	116	88	110		Total Exports.

9 : B.

IMPORTATIONS DE FONTE, FER ET ACIER PAR ARTICLES
ET PAR PAYS D'ORIGINE.IMPORTS OF IRON AND STEEL BY ARTICLES AND BY
COUNTRIES OF ORIGIN.

Articles :	En milliers de tonnes de 1.016 kgs.					Long tons (000's omitted).				Articles :
	1912	1913	1920	1921	1922	1923	1924	1925		
Fonte et ferro-alliages	218	216	230	680	164	110	308	286		Pig iron and ferro-alloys.
Loupes, billettes et planches	564	514	253	178	187	427	708	653		Blooms, billets and slabs.
Tôles et barres étamées	275	346	36	101	79	145	380	510		Sheet and tinplate bars.
Barres, tiges, angles, etc.	164	200	91	129	75	143	255	232		Iron, bars, rods, angles, etc.
Tiges de fil	98	95	55	25	49	49	74	114		Wire rods.
Barres d'acier, acier d'angle, ébauches, etc.	109	134	55	86	36	83	138	177		Steel bars, angles, shapes, etc.
Moulages en acier bruts	8	12	6	6	3	5	7	6		Steel castings in the rough.
Acier forgé	19	22	1	1	1	1	3	7		Steel forgings.
Poutres, longuerines, piliers, colonnes de 1/8 de pouce	117	109	13	36	39	62	89	109		Girders, beams, joists, pillars.
Feuillard et bandes	55	72	33	32	21	15	36	71		Hoops and strips.
Plaques et tôles pas au-dessous de 1/8 de pouce	75	135	158	109	32	79	123	176		Plates and sheets not under 1/8 "
Plaques et tôles au-dessous de 1/8 de pouce	26	35	16	17	8	12	12	37		Plates and sheets under 1/8 "
Tubes, tuyaux et raccords en fonte Tubes, tuyaux et raccords en fer malléable	8	11	6	28	20	16	27	37		Tubes, pipes and fittings, cast. Tubes, pipes and fittings, wrought.
Rails creusés pour tramways	34	53	15	28	21	24	37	51		Tram rails, grooved.
Rails pour chemins de fer	9	10	10	18	3	2	1	—		Railway rails.
Bandages et essieux	14	22	4	25	11	9	21	32		Tyres and axles.
Fils de fer	5	8	1	—	2	2	2	1		Wire.
Clous en fil	49	54	29	35	36	36	46	58		Wire nails.
Clous et rivets	56	50	43	36	45	51	53	61		Other nails and rivets.
Autres clous et rivets	9	7	5	5	3	4	5	8		Unenumerated.
Non spécifiés	84	126	48	65	55	47	103	132		
Total	1.996	2.231	1.108	1.640	881	1.322	2.429	2.720		Total.
Pays d'origine :										Countries of Origin :
Suède	208	209	70	66	37	52	73	64		Sweden.
Pays-Bas	10	7	11	31	35	21	35	55		Netherlands.
Belgique	450	584	263	847	372	674	1.208	1.290		Belgium.
Allemagne	948	1.198	30	156	118	140	334	367		Germany.
France	15	37	61	249	153	242	436	596		France.
Luxembourg	—	—	—	—	32	65	206	204		Luxemburg.
Etats-Unis	334	154	495	138	63	68	64	60		United States of America.
Autres pays	30	12	147	153	5	23	73	69		Other countries.
Non spécifiés	1	30	31	—	66	37	—	15		Unallocated.
Total	1.996	2.231	1.108	1.640	881	1.322	2.429	2.720		Total.

* 1912-1922 y compris Irlande; 1923-1925 non compris Etat libre d'Irlande.

* 1912-1922 including Ireland; 1923-1925 excluding Irish Free State.

ROYAUME-UNI * (suite).

UNITED KINGDOM * (continued).

9 : C.

EXPORTATIONS DE FONTE, FER ET ACIER PAR ARTICLES
ET PAR PAYS DE DESTINATION.EXPORTS OF IRON AND STEEL BY ARTICLES AND BY
COUNTRIES OF DESTINATION.

	Milliers de tonnes de 1.016 kgs.					Long tons (000's omitted).			
	1912	1913	1920	1921	1922	1923	1924	1925	
<i>Articles:</i>									<i>Articles:</i>
Fonte brute et ferro-alliages . .	1.262	1.124	580	136	793	892	600	560	Pig iron and ferro-alloys.
Loupes, billettes et planches . .	4	4	9	2	9	19	11	5	Blooms, billets and slabs.
Barres en fer, tiges, angles, etc. .	147	141	59	31	31	44	43	37	Iron bars, rods, angles, etc.
Barres en acier, tiges, angles, formes, etc.	241	251	363	107	221	354	274	237	Steel bars, rods, angles, shapes, etc.
Moulages en acier	1	1	1	—	—	1	2	1	Steel castings.
Acier forgé	3	1	1	—	—	1	1	1	Steel forgings.
Longuerines, poutres, solives, etc.	121	122	93	39	59	77	72	64	Girders, beams, joists, etc.
Feuillards et bandes	40	46	56	22	48	72	70	61	Hoops and strips.
Plaques et tôles, pas au-dessous de 1/8 de pouce	143	136	199	131	85	194	184	119	Plates and sheets not under 1/8".
Plaques et tôles, au-dessous de 1/8 de pouce	74	68	138	49	169	285	247	199	Plates and sheets, under 1/8".
Plaques noires et plaques «Canada»	66	72	36	14	56	54	44	35	Black plates and Canada plates.
Tôles galvanisées	659	762	411	212	513	602	650	713	Galvanised sheets.
Plaques étamées ternes et autres plaques recouvertes	481	494	353	227	449	552	555	511	Tin terne and other coated plates.
Tubes, tuyaux et raccords en fonte	220	235	100	57	76	88	84	94	Tubes, pipes and fittings, cast.
Tubes, tuyaux et raccords forgés	179	165	126	78	86	154	168	192	Tubes, pipes and fittings wrought
Rails creusés pour tramways . .	3	6	3	6	5	19	10	10	Rails grooved for trams.
Rails pour chemins de fer	407	500	131	177	254	238	175	208	Rails, railways.
Traverses et éclisses	110	119	61	69	143	82	91	94	Sleepers and fishplates.
Fil de fer	64	61	67	21	55	79	78	74	Wire.
Articles en fil de fer	55	56	52	21	35	53	50	44	Wire manufactures.
Clous, pointes et rivets	24	23	21	8	12	17	17	18	Nails, tacks and rivets.
Boulons, écrous et vis, pour métaux	28	25	24	14	15	24	31	33	Bolts and nuts and screws for metals.
Ancre et chaînes	32	35	31	15	11	15	16	16	Anchors and chains.
Autres articles	444	522	331	261	272	352	378	405	Other items.
Total	4.808	4.969	3.251	1.697	3.397	4.318	3.851	3.731	Total.
<i>Pays de destination:</i>									<i>Countries of Destination:</i>
Norvège	94	83	66	16	37	53	57	48	Norway.
Suède	114	118	59	12	40	69	50	44	Sweden.
Danemark	67	69	55	17	44	76	74	55	Denmark.
Allemagne	297	199	27	4	89	312	89	76	Germany.
Pays-Bas	176	146	137	60	65	97	77	102	Netherlands.
Belgique	127	126	246	58	132	163	166	112	Belgium.
France	185	203	239	44	146	139	123	73	France.
Suisse	11	9	7	5	10	10	7	7	Switzerland.
Portugal	34	39	60	10	30	38	34	24	Portugal.
Espagne	42	43	58	22	46	50	50	51	Spain.
Italie	165	144	127	25	94	89	93	106	Italy.
Roumanie	51	26	7	6	14	10	18	10	Roumania.
Grèce	—	8	10	5	5	6	13	12	Greece.
Java	16	34	41	19	28	31	26	31	Java.
Siam	2	12	7	4	10	9	9	10	Siam.
Chine	31	58	81	48	67	72	64	50	China.
Japon	295	238	169	99	136	300	239	135	Japan.
Afrique orientale portugaise . .	48	55	34	16	22	25	25	54	Portuguese East Africa.
Chili	66	60	32	12	18	33	43	34	Chile.
Bésil	137	118	46	18	34	55	66	55	Brazil.
Argentine	302	359	117	99	128	174	230	272	Argentina.
Autres pays de l'Amérique du Sud	—	35	22	12	21	60	42	45	Other countries in South America
Etats-Unis	133	177	83	13	397	320	137	164	United States of America.
Indes et Ceylan	706	896	687	435	682	672	599	633	India and Ceylon.
Etablissements des Détroits . .	52	113	71	59	50	60	79	104	Straits Settlements.
Hong-Kong	17	28	33	24	32	34	40	24	Hong-Kong.
Egypte	38	63	76	32	35	40	44	43	Egypt.
Afrique orientale anglaise . . .	19	19	12	7	31	23	41	75	British East Africa.
Afrique occidentale anglaise . .	9	46	33	64	84	76	55	53	British West Africa.
Afrique du Sud et Rhodésie . .	239	261	163	93	111	184	207	218	South Africa and Rhodesia.
Canada	206	187	31	18	114	121	118	102	Canada.
Australie	556	567	194	149	374	488	454	432	Australia.
Nouvelle-Zélande	158	154	70	61	91	133	137	153	New Zealand.
Antilles anglaises	9	11	9	9	15	13	14	13	British West Indies.
Autres possessions britanniques	—	26	32	52	27	112	141	135	Other British Possessions.
Autres pays	406	239	110	65	138	171	190	176	Other countries.
Non spécifiés	—	—	—	—	—	—	—	—	Unallocated.
Total	4.808	4.969	3.251	1.697	3.397	4.318	3.851	3.731	Total.

* 1912-1922 y compris Irlande; 1923-1925 non compris Etat libre d'Irlande.

* 1912-1922 including Ireland; 1923-1925 excluding Irish Free State.

SUÈDE

SWEDEN

10 : A.

COMMERCE EN MINÉRAI DE FER ET DÉCHETS DE FER.

TRADE IN IRON ORE AND SCRAP IRON.

Milliers de tonnes métriques					Metric tons (000's omitted)				
	1912	1913	1920	1921	1922	1923	1924	1925	
Minérai de fer.									Iron Ore.
Exportations à :									Exports to:
Allemagne	4.218	4.978	2.112	3.131	3.630	2.364	3.839	6.578	Germany.
Belgique	211	232	254	166	268	406	542	460	Belgium.
Norvège	36	111	—	513	—	357	—	267	Norway.
Royaume-Uni	622	673	591	240	438	826	776	633	United Kingdom.
Etats-Unis	335	361	97	140	361	733	319	136	United States.
Autres pays	98	85	117	3	236	80	255	269.	Other countries.
Exportations totales	5.520	6.440	3.171	4.193	4.933	4.766	5.731	8.343	Total Exports.
Importations totales	1	3	120	58	—	—	—	—	Total Imports.
Déchets de fer.									Scrap Iron.
Importations totales	50	70	62	13	16	18	38	12	Total Imports.
Exportations totales	9	8	4	6	22	12	4	9	Total Exports.

10 : B-C.

COMMERCE EN FONTE, FER ET ACIER PAR ARTICLES
ET PAR PAYS D'ORIGINE OU DE DESTINATION.TRADE IN IRON AND STEEL BY ARTICLES AND BY
COUNTRIES OF ORIGIN OR DESTINATION.

Milliers de tonnes métriques					Metric tons (000's omitted)				
	1912	1913	1920	1921	1922	1923	1924	1925	
Importations :									Imports :
Articles :									Articles :
Fer d'angles et autres espèces de fer laminé à chaud	42	50	67	34	42	61	90	98	Angle iron and other hot-rolled iron.
Fer étiré ou laminé à froid	—	1	2	1	1	2	1	2	Iron cold-rolled or drawn.
Tôles	8	28	61	30	28	54	50	49	Sheets.
Fonte	84	100	37	11	21	35	44	51	Pig iron.
Tuyaux en fonte non malléable	15	17	15	8	15	17	14	15	Cast-iron pipes.
Tuyaux laminés ou étirés à chaud	12	11	15	8	13	15	18	20	Pipes hot-rolled or drawn.
Ferro-silicium et ferro-manganèse	2	3	—	—	—	—	—	—	Ferro-silicon and ferro-manganese.
Rails	60	59	59	42	26	12	79	37	Rails.
Autres articles	39	21	42	31	27	29	35	31	Other articles.
Total	262	290	298	165	173	225	331	303	Total.
Pays d'origine :									Countries of Origin :
Allemagne	102	128	123	101	88	77	177	142	Germany.
Belgique	11	9	14	6	12	32	40	63	Belgium.
Royaume-Uni	102	116	51	9	38	65	53	42	United Kingdom.
Non dénommés	39	21	42	31	27	29	35	31	Unspecified.
Autres pays	8	16	68	18	8	22	26	25	Other countries.
Importations totales	262	290	298	165	173	225	331	303	Total Imports.
Exportations :									Exports :
Articles :									Articles :
Fer d'angle et autres espèces de fer laminé à chaud	149	164	82	33	57	54	92	82	Angle and other hot-rolled iron.
Lingots	14	15	5	2	5	5	7	5	Ingots.
Fer étiré ou laminé à froid	7	6	6	2	3	3	5	7	Iron, cold-rolled or drawn.
Ferro-silicium et ferro-manganèse	6	10	8	4	5	12	15	17	Ferro-silicon and ferro-manganese.
Tôles	2	2	8	3	2	2	3	5	Sheets.
Barres	20	25	8	3	10	13	13	13	Bars.
Fonte brute	193	195	118	84	48	108	92	80	Pig iron.
Acier pour outils	23	18	8	3	4	5	4	4	Tool steel.
Fer ébauché fondu, etc.	12	10	4	1	4	5	6	7	Castings, etc.
Tuyaux laminés ou tirés à chaud	13	12	12	3	8	5	11	14	Pipes, hot-rolled or drawn.
Clous	1	—	2	—	1	1	3	1	Nails.
Rails	—	—	1	—	1	2	1	1	Rails.
Autres articles	60	57	30	16	20	23	25	37	Other articles.
Total	500	514	292	154	168	238	277	273	Total.
Pays de destination :									Countries of Destination :
Allemagne	86	90	39	17	30	72	59	61	Germany.
France	35	30	27	8	13	11	22	16	France.
Royaume-Uni	190	193	60	61	40	51	78	59	United Kingdom.
Japon	8	20	26	24	9	5	15	6	Japan.
Etats-Unis	23	38	7	6	23	23	25	32	United States of America.
Non dénommés	60	57	30	16	20	23	25	37	Unspecified.
Autres pays	98	86	103	22	31	49	53	61	Other countries.
Exportations totales	500	514	292	154	168	238	277	273	Total Exports.

TCHÉCOSLOVAQUIE

CZECHOSLOVAKIA

11 : A.

COMMERCE EN MINÉRAI DE FER ET DÉCHETS DE FER.

TRADE IN IRON ORE AND SCRAP IRON.

Milliers de tonnes métriques.

Metric tons (000's omitted).

Minérai de fer.	1920	1921	1922	1923	1924	1925	Iron Ore.
Importations de :							Imports from :
Allemagne	122	100	21	6	32	120	Germany.
Autriche	106	91	29	32	3	—	Austria.
Suède	333	49	71	663	504	580	Sweden.
Autres pays	2	145	33	132	190	126	Other countries.
Importations totales	563	385	154	833	729	826	Total Imports.
Exportations totales	43	33	61	101	125	82	Total Exports.
Déchets de fer.							Scrap Iron.
Importations totales	29	62	166	157	116	133	Total Imports.
Exportations totales	4	2	4	10	1	3	Total Exports.

11 : B.

IMPORTATIONS DE FER, FONTE ET ACIER PAR ARTICLES
ET PAR PAYS D'ORIGINEIMPORTS OF IRON AND STEEL BY ARTICLES AND BY
COUNTRIES OF ORIGIN.

Milliers de tonnes métriques

Metric tons (000's omitted)

Articles :	1920	1921	1922	1923	1924	1925	Articles :
Fonte et alliages	38,7	35,5	23,2	16,1	63,9	62,0	Pig iron and ferro-alloys.
Barres	8,6	6,0	3,1	2,6	4,5	6,4	Bars.
Plaques et tôles	8,9	2,3	2,1	1,7	6,3	8,5	Plates and sheets.
Fils	4,0	2,9	2,0	2,3	3,5	4,4	Wire.
Tuyaux, tubes, cylindres	1,0	1,4	1,7	0,9	1,2	1,7	Tubes, pipes, cylinders.
Fer de construction	1,6	0,6	0,6	0,1	0,1	0,1	Structural iron.
Tonneaux et ouvrages en tôle	2,6	2,0	1,8	1,0	1,4	2,1	Casks, wares of sheet iron.
Rails et autre matériel pour chemins de fer	2,8	3,2	2,2	0,4	0,8	1,3	Rails and other railway material.
Outils et ustensiles	2,4	1,6	1,6	0,9	1,3	1,8	Tools and implements.
Clous, boulons, vis, rivets	1,8	1,3	0,6	0,2	0,3	0,5	Nails, tacks, screws, rivets.
Chaînes	0,2	0,1	0,1	0,1	0,1	0,2	Chains.
Articles en fil de fer	1,9	1,8	0,5	0,3	0,2	0,4	Wares of wire.
Non spécifiés	3,6	0,2	0,1	—	—	—	Unspecified.
Total	78,1	58,9	39,6	26,6	83,6	89,4	Total.
Pays d'origine :							Countries of Origin :
Allemagne	19,1	25,2	15,3	10,6	25,1	28,8	Germany.
Autriche	33,9	21,6	8,4	7,8	31,8	34,4	Austria.
Royaume-Uni	4,2	1,6	6,8	2,6	9,0	10,9	United Kingdom.
Suède	5,0	1,0	1,3	0,9	7,4	6,3	Sweden.
Autres pays	15,9	9,5	7,8	4,7	10,3	9,0	Other countries.
Total	78,1	58,9	39,6	26,6	83,6	89,4	Total.

TCHÉCOSLOVAQUIE (suite).

CZECHOSLOVAKIA (continued).

11 : C.

EXPORTATIONS DE FER ET ACIER PAR ARTICLES ET
PAR PAYS DE DESTINATION.EXPORTS OF IRON AND STEEL BY ARTICLES AND BY
COUNTRIES OF DESTINATION.

Articles :	Milliers de tonnes métriques				Metric tons (000's omitted).		Articles :
	1920	1921	1922	1923	1924	1925	
Fonte, loupes, alliages	31,5	49,8	54,4	183,5	81,7	83,4	Pig iron, blooms, alloys.
Barres	32,0	26,1	48,8	154,4	83,1	103,9	Bars.
Tôles et plaques	14,4	31,4	26,1	48,5	67,7	112,7	Sheets and plates.
Fils	7,1	1,0	0,9	36,8	25,1	37,8	Wire.
Cylindres, tuyaux, tubes	17,9	28,6	27,1	54,5	80,9	102,3	Cylinders, pipes and tubes.
Fer de construction	6,2	5,9	4,2	1,9	2,2	1,9	Structural iron.
Ouvrages en tôle	10,4	11,8	4,3	3,0	3,2	13,3	Wares of sheet iron.
Rails et autres matériels pour chemins de fer	4,7	3,0	3,6	51,9	26,1	14,9	Rails and railway material.
Outils et ustensiles	2,5	2,5	1,5	1,6	1,8	2,8	Tools and implements.
Clous, boulons, vis	9,0	4,4	3,9	6,8	10,2	9,4	Nails, tacks, screws.
Articles en fil de fer	0,7	0,4	0,2	0,5	0,7	1,5	Wares of wire.
Non spécifiés	0,9	1,0	0,4	0,4	0,2	0	Unenumerated.
Total	187,3	177,9	175,4	543,8	382,9	483,9	Total.
<i>Pays de destination :</i>							<i>Countries of Destination :</i>
Allemagne	13,4	7,8	33,5	309,5	95,4	79,2	Germany.
Autriche	43,1	43,8	30,2	26,0	51,6	69,3	Austria.
Hongrie	10,9	32,7	15,3	23,6	25,4	22,1	Hungary.
Pologne	24,6	45,8	30,8	43,5	26,0	17,9	Poland.
Roumanie	5,4	16,5	18,9	37,5	42,1	81,9	Roumania.
Royaume des Serbes, Croates et Slovènes	6,8	22,0	15,4	8,8	14,2	14,4	Kingdom of the Serbs, Croats and Slovenes
Italie	8,4	3,3	1,3	0,8	20,6	49,3	Italy.
Royaume-Uni	0,2	3,6	2,5	2,8	11,6	20,1	United Kingdom.
Non spécifié et autres pays	24,5	2,4	27,5	94,1	96,0	129,7	Unspecified and other countries.
Total	137,3	177,9	175,4	543,8	382,9	483,9	Total

ANNEX V.

**NOTES AND OBSERVATIONS ON THE IRON AND STEEL INDUSTRY
IN GERMANY, FRANCE AND THE UNITED KINGDOM**

MEMORANDUM ON THE GERMAN IRON AND STEEL INDUSTRY

Prepared by the Fachgruppe der Eisen schaffenden Industrie beim Reichsverband
der Deutschen Industrie (Geschäftsführer Dr. J. W. Reichert)

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Submitted by Dr. C. LAMMERS.

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I. PRINCIPAL CONDITIONS GOVERNING THE DEVELOPMENT OF THE GERMAN IRON AND STEEL INDUSTRY IN RECENT YEARS.

In 1913, Germany produced 19,309,000 tons of pig iron and 18,940,000 tons of raw steel. The English production amounted to 10,650,000 tons of pig iron and 7,790,000 tons of raw steel, and the French to 5,210,000 tons of pig iron and 4,690,000 tons of raw steel. The German iron and steel industry was thus twice as large as the English, and approximately four times as large as the French. Further, Germany was the chief iron-exporting country in the world.

As a result of the *Treaty of Versailles* which involved the separation of Lorraine, the detachment of Luxemburg from the German Customs territory, the incorporation of the Saar Territory with the French Customs system, and the loss of Eastern Upper Silesia, the German iron and steel industry lost about 80 per cent of its production of iron ore, 30 per cent of its output in pit-coal, 30 per cent of its steel-works, and nearly 30 per cent of its rolling-mills. As compared with the production of 1913, the loss of part of its factories robbed the industry of 42 per cent of its production of pig iron, of 37 per cent of its production of raw steel, and approximately 34 per cent of the output from its rolling-mills.

The separation of Lorraine, Luxemburg and the Saar Territory was also a serious loss for the iron industry in *Rhenish Westphalia*, as the iron-works in the south-west had mostly been created in connection with that industry. Before the war, a constant exchange of goods had been established between the metal industry in Lorraine and Luxemburg, the iron industry in the Saar and the industrial territory in Rhenish Westphalia; iron ore, scrap and, in particular, pig iron and semi-manufactures and rolling-mill products were sent from the south-western to the north-western districts, while coal, coke, machinery, tools, etc. were sent south in exchange. These economic links have been broken.

Out of the total losses of the German iron and steel industry, those in *Upper Silesia* represented approximately 0.3 per cent of the iron ore, 5 per cent of the pig iron, 7 per cent of the raw steel, and 7.5 per cent of the rolling-mill output. Taken *separately*, Upper Silesia, as a result of the cession of its eastern portion to Poland, and in comparison with its pre-war production, has lost close upon 100 per cent of its iron ore, 64 per cent of its pig iron, 75 per cent of its raw steel, and 78 per cent of its rolling-mill production.

The development of the German iron and steel industry since the war has been influenced by a series of *transformations*, the first of which was represented by the industry's re-adaptation (in 1918 and 1919) to peace-time production. The second (1920-23) was governed by inflation, the third (1923) by the occupation of the Ruhr territory, the fourth (1924) by the charges imposed by the MICUM, and by the stabilisation of the German currency; the fifth (end of 1924 and 1925) by the reconstruction of the

metallurgical combines; the sixth (1925-26) by measures of rationalisation, and, in particular, by the amalgamation of part of the large concerns in the United Steel Works, etc.

The re-adaptation of the industry to peace-time production involved the destruction of a large amount of machinery and plant, and inflicted serious losses on the mixed factories, which owned extensive finishing works. The period of inflation was characterised by a lack of coal and coke, and by the failure to realise the actual loss sustained in capital in every form. The new plant set up to replace the lost works is far from sufficient to offset these capital losses. The occupation of the Ruhr territory brought production and sale to a standstill, and, combined with the charges imposed by the MICUM, caused heavy financial losses. With the stabilisation of the German currency during the autumn of 1923, the deflation crisis began, which, in the second half of 1925, reached its culminating point and showed its effect in a steady fall in the output. The revival of the iron and steel combines was a consequence of economic distress; it was an endeavour to adapt the supply to the demand, to stabilise prices as far as possible, and to re-establish the working of the industry under conditions which would ensure adequate profits. The measures of rationalisation were adopted for the same purpose.

Until January 10th, 1925, Germany was compelled, in virtue of the Treaty of Versailles, to admit duty free large quantities of iron and steel products coming from Lorraine, Luxemburg, the Saar Territory and Eastern Upper Silesia. Appendices 1 to 3 show how considerable these imports were.

The disturbance caused both in production and sale between 1920 and 1925 by the contingents imported duty free was further increased in 1925 and 1926 by the large imports consequent upon "dumping" by competing countries whose national currency, the franc, was depreciated. As is shown in Appendix 4, 877,451 tons of the products of the heavy metallurgical industry, *i.e.* 75.58 per cent of the total German imports of these products, came in 1925 from French Customs territory and Belgium and Luxemburg alone.

The monetary position in countries with a depreciated currency favoured their production of iron and steel and increased competition at home and abroad. These countries enjoyed more favourable natural conditions of production than Germany. Moreover, they paid their wages and taxes, their railway tariffs and the interest on their debts, etc., in depreciated currency and received — like France — the German reparation coke at cheap rates. These circumstances forced down the iron and steel prices both on the world market, where they hampered sale and export, and on the German home market, which had been reduced and impaired by the Treaty of Versailles, and experienced a slump in shipbuilding, mechanical engineering, the lesser metallurgical industries, the building industry, and all other iron-consuming industries. The numerous difficulties and obstacles placed in the way of international trade had similar effects. Moreover, Germany has not much capital at her disposal but has to pay high rates of interest for credit, is burdened with heavy taxation and social charges, and high railway transport rates drain upon her resources, and finally she has to make deliveries under the Dawes plan.

Appendix 5 shows the pre-war and post-war *charges* borne by seven German iron-works *in respect of taxation and social welfare expenditure*, compared with share capital and net profits. The seven examples chosen have reference to particularly sound concerns, able to pay large dividends in pre-war days, that is to say, in the years 1913 and 1914. The aggregate profits of these seven concerns during the last year before the war amounted to 63.337 million marks, for an aggregate share capital of 255.940 million marks. Pre-war dividends thus amounted to 24.7 per cent of share capital, so that, after payment of a substantial dividend, considerable reserves could be built up. Pre-war taxes and social welfare charges totalled 22.562 million marks, or 8.8 per cent of share capital. The figures given for the post-war period have reference to the years 1924 and 1925. In three of the firms under consideration, the pre-war capital differs but slightly from post-war capital; whilst in four of them capital has been largely increased, owing to the extension of the concerns and especially to amalgamation with other large firms. The figure of 661.630 million marks, representing the aggregate post-war capital of these companies, has been calculated from the first balance sheets prepared on a gold basis. The net profits were only 7.576 million marks or 1.1 per cent of share capital, as against 24.7 per cent in the last year before the war. As a general rule, these firms were therefore unable to pay any dividend, as the total liabilities were very heavy and practically the whole of this meagre profit had to be carried forward as a reserve. The total burden of post-war taxation and social welfare expenditure, which was 73.223 million marks, represented 11.1 per cent of the increased share capital as against 8.8 per cent in pre-war days.

The burden as regards *railway transport rates* for iron will be appreciated from the following particulars. Post-war German goods traffic rates, inclusive of the 7 per cent tax on traffic, are roughly 45 per cent higher than the 1913 rates. Consignments for short distances not exceeding 50 kilometers, especially those for distances not exceeding 25 kilometers, are subject to considerably higher rates, as a result of the revision of transport rates carried out in recent years. This revision, which is bound up with the levying of reparation charges on the Reichsbahn, has also led to the withdrawal of many special cheap rates. In this way, the cost of transport has been increased to four or five times the pre-war amount. Owing to the higher cost of transport, as compared with pre-war rates, not only has the German iron industry had to face increased production costs, but its ability to find an outlet for its products, and to compete in the world market, has been impaired.

The effect of these circumstances is further aggravated by the fact that, owing to the inflation of the franc, the transport rates paid by the great competing industries of France and Belgium are considerably lower, when reckoned in terms of gold marks. In June 1926, for instance, the German railway rates for ore exceeded French rates by amounts rising to 60 per cent and were in some cases 300 per cent higher than the Belgian. The cost of transporting coal on the German railways exceeded that on the French railways by 100 per cent and that on the Belgian railways by more than 200 per cent. German railway rates for iron bars exceeded French rates by as much as 80 per cent and Belgian rates by 190 per cent. In the case of foreign shipments from seaports, the German railway rates for bar iron were from 130 to 150 per cent higher

than the French rates, and exceeded the Belgian rates by amounts rising to 458 per cent.

The cost of railway transport is a matter of great importance to the German iron industry, as that industry requires large quantities of raw and accessory materials such as ore, coke and coal. It is also an important consideration in connection with the marketing products. The cost of transport on the German railways accounts for a large proportion of the selling prices. In pre-war days, the special rates were a factor of the highest importance to the German iron industry, as regards both foreign shipments from seaports and exports across the land frontiers. The rates now in force for German iron exports shipped from German ports are twice or three times the pre-war figure.

These considerations show that the German industry is labouring under serious difficulties as compared with the industries of other competing countries.

2. CAPACITY OF PRODUCTION OF GERMAN BLASTFURNACES, STEEL-WORKS AND ROLLING-MILLS.

In the year 1913, the number of blastfurnaces in the German Customs territory as then constituted was 376, of which number 46 were situated in Luxemburg, 64 in Lorraine, 28 in the Saar Territory, 122 in Rhenish Westphalia¹, 43 in Siegerland, 14 in Western Upper Silesia, 21 in the eastern portion of Upper Silesia since assigned to Poland, and the remainder in other parts of German territory. The aggregate pig-iron production of German blastfurnaces was, at that time, 19.3 million tons.

At the end of 1925, there were 211 blastfurnaces in the German Customs territory as at present constituted (excluding the Saar Territory), 120 being situated in the Rhineland and Westphalia, and 15 in Western Upper Silesia. The total quantity of pig iron produced in Germany in 1925 was 10,176,000 tons in round figures. The output capacity of the blastfurnaces in German Customs territory as now constituted probably exceeds their pre-war capacity to an appreciable extent. Precise figures are unfortunately not available.

Accurate data are also lacking as regards the output capacity of steel-works. Valuable indications are, however, afforded by the manufacturing quotas of the Raw Steel Syndicate, which exceed 15 million tons.

As regards the output capacity of the rolling-mills, no indication is afforded by the number of mills, as they differ widely both in size and equipment and as their output capacity is governed by that of the steel-works with which they are connected. In 1913, the output of German rolling-mills in the German Customs territory as then constituted totalled roughly 16.7 million tons of rolled iron and steel products of all kinds. In

¹ Rhenish Westphalia should be understood to include the Rhenish Westphalian industrial district properly so called, exclusive of Siegerland and of the Lahn and Dill district.

1925, the output of German rolling-mills in German Customs territory as at present constituted (excluding the Saar Territory) totalled 10.25 million tons. It is probable, however, that the real capacity is appreciably greater, as the German rolling-mills are unable to work at full pressure, owing to the shrinkage of the home market and the difficulties of selling in the world market.

3. ACTUAL OUTPUT.

(a) *Production of Pig Iron.*

As regards the proportion of pig iron produced before the war in Eastern Upper Silesia now assigned to Poland, accurate figures are available only for 1913. For the years 1909-1912, this proportion has to be estimated.

The average output of pig iron in former German Customs territory during the period 1909-1913 was about 16 million tons. Calculated for present-day German Customs territory, the average production for the period 1909-1913 amounted roughly to 9,250,000 tons. The loss caused by the Versailles Treaty is thus approximately 6,750,000 tons, or 42 per cent of the former output. In 1925, 10,177,000 tons of pig iron were produced. The output of pig iron for 1925 was thus roughly 6 million tons (or nearly 38 per cent) less than the total pre-war output.

As regards the position in separate districts, the production of pig iron in Rhenish Westphalia rose to 8 million tons in the year 1925, thus nearly reaching the 1913 level (8.2 million tons), and exceeding the average for the years 1909-1913 (6.9 million tons).

The average production in Upper Silesia for the years 1909-1913 was in round figures 931,000 tons. In the year 1913, considered separately, it was 995,000 tons. The proportion of the 1913 total Upper Silesian output produced by the western portion of Upper Silesia, which has remained German, was 370,000 tons. By the cession of Eastern Upper Silesia to Poland, nearly two-thirds of the former output have thus been lost. In 1925, the production of pig iron in Western Upper Silesia, amounting to 288,000 tons, had reached only about 77 per cent of the 1913 figure. This is not only due to bad economic conditions, but also of the disgregation of economic units forming an organic whole.

(b) *Production of Raw Steel.*

The total production of raw steel for 1913 in German Customs territory as then constituted was, in round figures, 18.94 million tons. Calculated for German Customs territory as at present constituted, it works out at roughly 12.24 million tons. As a result of the Treaty of Versailles, the German iron and steel industry thus lost 6.7 million tons of raw steel, or roughly 37 per cent of its total output.

In 1925, the total output of raw steel in German Customs territory as at present constituted was, in round figures, 12.2 million tons. The figure is thus almost exactly equal to the 1913 output, within the present-day Customs territory.

As regards the position in separate districts, the 1925 output for the Rhineland and Westphalia, amounting to 9.9 million tons, has not yet quite reached the 1913 figure, which was 10.1 million tons.

Upper Silesia produced roughly 1.4 million tons of raw steel in 1913. Of this quantity, 350,000 tons were produced in Western Upper Silesia. By the cession of Eastern Upper Silesia to Poland, 1.05 million tons of raw steel, or roughly 75 per cent of the Upper Silesian peace-time output, have thus been lost. In 1925, Western Upper Silesia produced 366,000 tons of raw steel, thus somewhat exceeding its pre-war output.

(c) *Output of Rolling-mills.*

The total production of rolled iron and steel for 1913 in German Customs territory as then constituted was, in round figures, 16,698,000 tons. Calculated for German Customs territory as at present constituted, it works out at 11,005,000 tons. As a result of the Treaty of Versailles, the German iron and steel industry thus had its pre-war output of rolled iron and steel reduced by 5.69 million tons, or 34 per cent.

In 1925, the total output of the rolling-mills was, in round figures, 10,246,000 tons. It was thus 750,000 tons below the 1913 output for German Customs territory as at present constituted.

As regards the position in separate districts, the output in the Rhineland and Westphalia for 1925, totalling roughly 8.2 million tons, was about 1 million tons less than the 1913 output (roughly 9.2 million tons).

Upper Silesia produced 1,278,000 tons in 1913. Of this quantity, 271,000 tons were produced in Western Upper Silesia. By the cession of Eastern Upper Silesia to Poland, the 1913 output of rolling-mills has thus been reduced by over 1 million tons, or 78 per cent.

In 1925, the output of the rolling-mills in the Western Upper Silesian territory which has remained German amounted to 286,000 tons; it was thus somewhat higher than the 1913 output in that area.

4. NUMBER OF WORKERS EMPLOYED. — UNEMPLOYMENT.

In 1924, 24,731 workers were employed at blastfurnaces, 33,287 in steel-works and 90,830 in rolling-mills, giving a total of 148,488 workers. Corresponding official figures for 1925 are not yet available.

The number of unemployed cannot be separately ascertained for the iron-producing industry, as the branch of industry to which individual unemployed workers belong is not officially recorded. Official statistics are prepared only for unemployment as a whole. The trade unions compile private statistics classified according to the main groups of industries. In these, however, all workers in the iron-producing, iron- and other metal-working industries are comprised under the single heading of "metal-workers". The exact percentage of unemployment therefore cannot be given. Unemployment in the iron-producing industry has grown considerably since 1925.

This is an effect of bad economic conditions and of the rationalisation schemes. Even with increased production it will scarcely be possible henceforth to re-absorb into the iron-works all the unemployed workers originally belonging to the iron-producing industry.

5. HOURS OF WORK. — INDIVIDUAL OUTPUT.

Respecting the actual number of hours worked, and individual output in relation to total output, it is also impossible to give any particulars. As regards the number of hours actually worked, no statistics are compiled. It would seem desirable that uniform standards should be laid down for the compilation of such international data. Internationally comparable figures as to individual output are not to be obtained by simply dividing total output by the number of workers. If comparable figures are to be secured, standards should be laid down on international lines indicating which classes and groups of workers in the various branches of industry are to be regarded as "working". The position in this respect differs from firm to firm. Account should, moreover, be taken of the technical equipment of establishments, as establishments abundantly equipped with machinery and mechanical appliances can secure a given output with an appreciably smaller number of workers than establishments in which manual labour plays a more prominent part.

6. WAGES.

According to official statistics, wage payments in 1924 amounted to 47,691,000 Reichsmark in the case of blastfurnaces and 236,965,000 Reichsmark in the case of steel-works and rolling-mills. Official figures are not yet available for 1925. It should be emphasised that the year 1924 in the German iron and steel industry was the period of so-called "cranking up", to set the economic machinery in motion again after the occupation of the Ruhr and the collapse of German currency. Wages have risen appreciably since 1924.

The movement of the average real earnings per hour in the Rhineland and Westphalia iron industry is shown in Appendix 6, giving the trend of real wages as well for the whole shift as separately for locksmiths, whose wages are typical of the earnings of skilled specialists. It shows that the real wages, both of the shift as a whole and of locksmiths in particular, are above peace-time real wages, even measured by the new extended cost-of-living index, so that the workers are better off at present than they were in the first quarter of 1914.

7. RAW MATERIALS USED.

(a) *Supplies of Iron Ore.*

In consequence of the Treaty of Versailles and of the withdrawal of Luxemburg from German Customs territory, the German iron and steel industry has lost the

Lorraine-Luxemburg minette basin as an ore deposit of its own. According to estimates drawn up by German experts in 1917, this minette deposit was capable of yielding roughly 1,777 million tons of ore, allowing for 10 per cent wastage in the process of extraction.

The accessible supplies of iron ore in the territory of present-day Germany are only about 474 million tons. There is no really rich ore (over 55 per cent Fe.), and even so-called middle grade ore (between 40-55 per cent Fe.) is available only in quite small quantities. The highest content of iron, approximately 41 per cent, is found in the Lahn and Dill district ores; the lowest, approximately 13.5 per cent, in the brown hematite and limonite ores of the Osnabruck districts. Nearly all the German iron ores are difficult to extract and in cases require special dressing. They are almost without exception "poor", i.e. the metallic content is even below the figure laid down in the United States of America as representing the economic limit of extraction, namely, 45 per cent. If it be considered that, according to German scientific calculations, the iron-ore deposits of France are estimated at approximately 9,763 million tons, those of the United States at 4,258 million tons, those of England at 2,929 million tons and those of Sweden at 1,325 million tons, it will be realised how poor Germany is in the matter of iron ores, and what a loss the German iron industry has suffered by being cut off from the Lorraine-Luxemburg minette district.

The average for the years 1909 to 1913 of the iron ore extracted in German Customs territory as then constituted was roughly 31 million tons; the quantity extracted in the present-day Customs territory being only approximately 6.4 million tons. Only a few iron- and steel-works possess their own ore-mines in Germany. In certain cases, long-term contracts have been concluded with foreign mines. Changes in the ore used have not necessitated any alterations in the technical equipment of establishments. Germany must look to imports from abroad for its supply of iron ore.

(b) *Imports of Iron Ore.*

The imports of iron ore into German Customs territory as formerly constituted averaged 11 million tons during the years 1909 to 1913. Imports during that period into German Customs territory as at present constituted (without the Saar district) cannot be calculated, as statistics do not provide the requisite data. In 1925, 11.5 million tons were imported into the present Customs territory. Quantitatively considered, imports in 1925 showed no appreciable difference when compared with the average imports for the years 1909 and 1913. It should be borne in mind, however, that, before the loss of the Lorraine-Luxemburg minette district, the supplies of ore drawn from home deposits yielded 9.5 million tons of pig iron, whereas in 1925 the production of pig iron from German ore amounted only to some 2 million tons.

Imports of ore from Spain and of minette from France, which in former days were used principally to supply German Lorraine, Luxemburg and the Saar Territory, have fallen heavily. The imports from Sweden have greatly increased. Present arrangements as regards the importation of iron ore may undergo certain changes.

The imports of manganese ore into German Customs territory as formerly

constituted averaged roughly 500,000 tons during the period 1909 to 1913. It is not possible to calculate the pre-war imports into present-day Customs territory. In 1925, roughly 200,000 tons were imported into the present Customs territory.

(c) *Prices of Iron Ore.*

Prices of ore cannot be compared with those prevailing in 1913, as the 1913 freight basis was different. Generally speaking, it may be said that the price of ore has risen somewhat since pre-war days.

(d) *Supplies of Coke.*

The German iron-producing industry obtains its supplies from its own coke-furnaces; no contracts for the delivery of coke are therefore made. This state of affairs already existed during the period 1909 to 1913. The German iron industry has its own coal-mines, from which it draws its supplies.

(e) *Supplies of Scrap.*

The total amount of scrap iron consumed in 1913 in the German Customs area as then constituted was 6.786 million tons; the amount consumed in the present Customs territory (excluding the Saar District) being 5.572 million tons. No official figures are as yet available for 1925, but consumption may be estimated at not less than 6.5 million tons. In comparison with 1913, the consumption of scrap in present-day German Customs territory has risen by approximately one million tons, as the production of steel is based more extensively upon the use of scrap than it was formerly. The extent to which the use of scrap entered into the production of steel may be assumed to be 47 per cent for 1925. Blastfurnaces have also become large consumers of scrap.

The consumption of scrap in German steel-works (expressed in units of 1,000 tons) has been as follows:

Year	Former German territory	Present-day German territory
1912	5,229	—
1913	5,579	4,531
1920	4,218	3,716
1921	4,827	4,391
1922	—	5,235
1923		3,131
1924		4,278

In 1913, roughly 210,000 tons of scrap were imported into German Customs territory as then constituted, whilst in 1925 roughly 215,000 tons were imported into present-day German Customs territory.

The export of scrap was nearly 194,000 tons in 1913, and roughly 286,000 tons in 1925. This considerable increase of exports is attributable largely to the fact that Germany is required under the Geneva Convention to deliver up to June 15th, 1927, large quantities of scrap to Poland. Czechoslovakia and Italy have also drawn on Germany for large supplies of scrap. As regards the price of scrap, the 1913 average price of 55 marks f.o.r. consumer works in Rhenish Westphalia for the most important type of scrap, so-called "*Kernschrott*", rose to the average figure of 64.25 marks in 1925.

8. CUSTOMS TARIFFS. — IMPORT PROHIBITIONS AND LICENCES.

The duties (general and conventional) on iron and steel in Germany have remained much below the high protective duties of other countries so far as heavy iron products are concerned. Unlike the duties in other countries, which have been considerably raised, the main duties on iron and steel have remained unchanged for decades. In the case of certain iron products, the rates of duty have been either permanently fixed or reduced as a result of commercial treaty negotiations.

There are no import or export prohibitions in Germany for iron and steel products. Only in the case of exports of scrap are authorisations required.

9. EXPORTS AND IMPORTS OF IRON AND STEEL¹.

What quantities of pig iron, cast iron and rolled iron and steel products were imported into, and exported from, German Customs territory in its present-day extension during the years 1909-1913 cannot be determined.

The quantity of such products exported from German Customs territory as formerly constituted was roughly 5.433 million tons in 1913, and averaged roughly 4.486 million tons during the period 1909-1913. In 1925, exports of these products fell to 2.488 million tons, a decrease of 2.95 million tons, or in round figures 3 million tons, as compared with the 1913 figure. Compared with the average figure for 1909-1913, exports showed a decrease of roughly 2 million tons.

The German iron industry has thus to a very large extent been driven out of its old markets. The principal cause to which this drop in exports must be referred is, apart from the loss of territory resulting from the Peace Treaty, the competition arising from inflation in countries with depreciated franc currencies. This will be plain from the following figures:

French exports of similar goods have risen from 0.43 million tons in 1913 to 2.8 million tons in 1925; they have thus increased by some 2.4 million tons, or nearly sevenfold. In the first half of 1926 they showed a still further increase.

In 1913, Belgium exported 1.33 million tons; in 1925, together with Luxemburg, it exported roughly 2.9 million tons.

¹ The exports and imports as shown in the general memorandum and in Annex IV include certain iron and steel products excluded from the import and export figures quoted in this section.

Whereas German exports show a decrease of some 3 million tons when compared with 1913 figures, exports from France, Belgium and Luxemburg have increased by some 4 million tons.

In the case of Germany, the situation has also changed with respect to importations of iron and steel; the heavy fall in exports has been accompanied by a sharp rise of imports. In 1913, imports of the above-mentioned products into German Customs territory amounted only to 243,400 tons, and averaged roughly 254,900 tons during the period 1909-1913. In 1925, however, imports into the reduced Customs territory totalled 1.161 million tons. Imports for 1925 are thus equivalent to more than four times the figure for 1913 and the average figure for the period 1909-1913. As already pointed out, the competition arising from inflation in countries with franc currencies also made its effects felt on imports.

10. IRON AND STEEL CONSUMPTION.

In its *Memorandum on the Iron and Steel Industry*, the Secretariat of the League of Nations has attempted to calculate the consumption of iron and steel, taking the production figures for pig iron and raw steel, and allowing for the quantities of pig iron and of finished iron and steel products imported and exported¹. The danger of such a method of calculation is that it may obscure the real position, since the major part of the output of pig iron is absorbed in the production of raw steel. Only such quantities of pig iron as are produced in the form of foundry and hematite iron become available for consumption as iron products. The finished products are, moreover, already covered under the heading of raw steel and semi-finished products. The import and export surplus of such products is therefore included several times over. Such a method leads to an over-estimate of the consumption of pig iron and an under-estimate of that of steel.

A more correct view is obtained if the output of raw steel, plus that of weld iron, foundry pig iron and hematite iron, is taken as a basis, and allowance is made for imports and exports of heavy iron and steel products. In this connection, the term "heavy iron products" should be understood to include pig iron, ferro-alloys, cast-iron and semi-finished rolling-mill products, including railway materials. Such a method of calculation, with the line of demarcation drawn at the rolled iron and steel products, enables the quantities of products made available for consumption, or for the supply, of a given country to be more or less accurately gauged. Even here there are certain minor possibilities of error, but a closer approximation to the facts is nevertheless obtained.

Calculated according to this method, the consumption of iron and steel in Germany per head of population averaged roughly 222 kilos during the period 1909-1913, and

¹ This remark refers to the first draft of the memorandum prepared in June 1926, which contained two different consumption calculations, one referring to pig iron only and the other to the consumption of semi-finished and finished iron and steel. The consumption calculations have been revised in the definitive edition.

amounted to roughly 206 kilos in 1925. Compared with pre-war figures, the consumption figures for 1925 thus show a decrease of 16 kilos, or 7 per cent.

11. IRON AND STEEL PRICES.

The idea of giving prices separately for individual heavy iron and steel products had to be abandoned, as no basis of international comparison can be devised until the currency of every competing country has been stabilised and until world economic conditions become more stable. It should further be remembered that the freight basis in Germany varies to some extent in the case of heavy iron products, so that prices are not always quoted at the works, and that many quotations are merely indications for general guidance (*Richtpreise*) which differ from actual sale prices. For purposes of international comparison, it would also be necessary to ascertain whether any extra charge over and above the price at the works is made on specific kinds of products, what transport rates are charged for varying distances in the respective countries, and so on.

12. ORGANISATION OF THE IRON AND STEEL INDUSTRY. — AGREEMENTS. — BUYING AND SELLING ORGANISATIONS.

The German pig-iron industry is organised under the Pig-Iron Association (*Roheisenverband*), which has been in existence for some 85 years. The Pig-Iron Association covers all blastfurnaces which produce the main kinds of pig iron. As a selling organisation, it controls the total pig-iron output of its members, so far as they do not subject this iron to further manufacturing processes in their individual establishments.

With few exceptions, German steel-works have, since 1924, been organised under the Raw Steel Syndicate (*Rohstahlgemeinschaft*), which seeks to regulate the raw steel output of its members by a system of fixed rationing quotas, and to adjust supply to demand. The Syndicate does not concern itself with the allocation of orders, sales or price fixing.

The German rolling-mills have been organised since July 1925 into the Steel-works Association (*Stahlwerks-Verband*), dealing with semi-finished products, rolled sections, permanent railway material, bar iron, thick plates and hoops and strips. As a selling syndicate for the first three of the products named, *i.e.* semi-finished products, rolled sections and permanent railway material (so-called A-products), the Steel-works Association had already been in existence from 1904-1920, but was then dissolved.

The Steel-works Association comprises a number of selling syndicates for specific rolled iron or steel products, such, for instance, as the A Products Association, the Bar-Iron Association, the Thick-plate Association and the Hoops and Strips Association. Apart from these, the tube and rolled-wire industries are separately syndicated. In the case of light plates and sheets, there is no association.

Negotiations for an international raw-steel cartel were recently concluded between the iron industries of Germany, France, Luxemburg, the Saar and Belgium. Other countries have been left free to join this cartel. The purpose of the negotiations was to adjust the steel production in Central and Western Europe to demand, and to reorganise

the European market, which was disorganised during the post-war period owing to the collapse of the currency in all European iron-producing countries (except England), and in this manner to stabilise the world market.

The Association of Tube Manufacturers has also concluded international agreements with the tube-making industries of a number of neighbouring countries. Such agreements have been concluded as regards production of rails, and to a lesser extent as regards wire production.

There are no buying organisations. Selling organisations of producers exist in the form of the above-mentioned iron cartels and syndicates. Iron dealers have also formed associations to some extent.

An iron exchange of international importance, such as the Brussels Iron Exchange, does not exist in Germany.

Prices having an international character cannot be given.

During the period of depreciation of German currency, home prices, reckoned in gold, were lower than export prices. Since the stabilisation of the German currency, the position has changed somewhat under the influence of foreign industries, more especially those of countries with depreciated franc currencies. The above-mentioned international steel agreement aims at raising the world market-price of iron.

13. THE SAAR TERRITORY.

Although the German Saar Territory is at the moment incorporated in the French Customs system, from the point of view of the German iron industry, which from the beginning has been closely connected with the Saar iron industry, it would seem necessary to deal briefly in a separate section with the conditions prevailing in the Saar Territory.

The imports of iron ore into the Saar Territory averaged roughly 3,718,000 tons during the period 1909-1913; of this, some 3.16 million tons were drawn from the minette district of Lorraine (at that time German territory), the mineral deposits of which were the foundation on which the Saar iron and steel industry had been built up.

The output of pig iron and steel in the Saar Territory can be seen from the following figures:

Year	Pig iron in tons	Raw steel in tons
1909	1,132,344	
1910	1,197,688	
1911	1,219,707	
1912	1,300,662	
1913	1,370,980	2,079,825
Average 1909-1913	1,244,276	
1925	1,453,056	1,574,687

Under the influence of the inflation of the franc, the production of pig iron in the Saar Territory in 1925, amounting to 1,453,000 tons, exceeded the average peace-time output of 1,244,000 tons by roughly 200,000 tons.

As regards the production of raw steel, no figures are available from 1909-1912. In 1925 the output of raw steel was 1,575,000 tons, or 0.5 million tons less than in 1913.

In 1913, the output of the rolling-mills in the Saar Territory was roughly 1,652,000 tons. For the years 1909 to 1912, and 1925, no figures are available. Since, however, the 1925 production figures in respect of raw steel show a decrease as compared with those for 1913, it may be assumed that the output of the rolling-mills in the Saar Territory was also smaller in 1925 than in 1913.

Appendix 1.

SCHEDULE OF ALSACE-LORRAINE IRON AND STEEL PRODUCTS, IMPORTED INTO GERMANY
Customs Free UNDER ARTICLES 68 AND 268*a* OF THE TREATY OF VERSAILLES, FROM
JANUARY 11th, 1920, TO JANUARY 10th, 1925.

(Quantities in metric tons.)

Entry No. on the quota list	Description	11.I.1920 to 10.I.1921	11.I.1921 to 10.I.1922	11.I.1922 to 10.I.1923	11.I.1923 to 10.I.1924	11.I.1924 to 10.I.1925
104	Crude forged iron, crude cast iron and steel . . .	20,530	99,467	445,722	80,242	275,847
107	Malleable iron, structural metal, black plates, tin plates, black and tin-plate goods	942	8,983	22,170	4,250	10,970
108	Iron wire, metal wire, drawn-wire goods . . .	1,159	12,675	41,884	7,645	11,937
109	Permanent railway material and railway rolling-stock	79	2,198	37,927	6,429	19,615
	Other iron products . . .	1,667	497	329	690	3,098
	Total	24,377	123,820	518,032	99,256	321,467

Appendix 2.

SCHEDULE OF LUXEMBURG IRON AND STEEL PRODUCTS IMPORTED INTO GERMANY
Customs Free UNDER ARTICLE 268*c* OF THE TREATY OF VERSAILLES, FROM
SEPTEMBER 16th, 1920, TO JANUARY 10th, 1925.

(Quantities in metric tons.)

Entry No. on the quota list	Description	16.IX.1920 to 15.IX.1921	16.IX.1921 to 15.IX.1922	16.IX.1922 to 15.IX.1923	16.IX.1923 to 15.IX.1924	16.IX.1924 to 15.IX.1925
2	Crude cast iron and cast-iron goods	44,355	34,487	15,872	6,992	21,239
3	Steel rolled and forged, and goods manufactured therefrom	88,292	381,494	248,924	97,123	198,478
4	Cast-iron and steel sections.	4,495	600	307	38	885
5	Iron and steel for general construction and mechanical engineering	317	287	90	—	5
	Total	137,459	416,868	265,193	104,153	220,607

Appendix 3.

SCHEDULE OF EASTERN UPPER-SILESIAN IRON AND STEEL PRODUCTS, IMPORTED INTO GERMANY
Customs Free UNDER ARTICLE 268*b* OF THE TREATY OF VERSAILLES AND ARTICLE 224
 OF THE GERMAN-POLISH CONVENTION OF MAY 15th, 1922, ON UPPER SILESIA,
 FROM JUNE 15th, 1922, TO JUNE 14th, 1925.

(Quantities in metric tons.)

Entry No. on the quota list	Description	15.vi.1922 to 14.vi.1923	15.vi.1923 to 14.vi.1924	15.vi.1924 to 14.vi.1925
112	Pig iron	2,719	4,484	3,730
115	Steel (forged and in bars, rolled and forged steel, crude and worked)	15,814	7,581	6,110
121	Semi-finished products of ingot and wrought iron (crude ingots, mill bars and billets, puddled bars, ingot iron, rolled ingots)	87,643	55,385	8,939
130	Rolled iron (bar iron, hot-rolled hoops and strips, universal iron, light and heavy sectional iron, tube strips, waste concrete reinforcement and sectional iron, merchant iron for waste-pipe traps)	182,089	147,217	48,444
146	Stampings and forgings (steel balls, wheel tyres, rolled rings, sets of wheels)	9,893	7,840	1,185
155	Iron pipes and tubes	13,300	14,747	8,678
161	Cold-rolled hoops and strips	1,218	1,445	90
179	Permanent railway material (rails and iron sleepers for normal gauge and light railways and tramways, fishplates, shouldered sole-plates, sole-plates)	25,642	19,320	9,074
226	Iron plates and sheets (thick and light plates and sheets), dynamo sheets, transformer sheets, stamped and chequered plates	71,116	48,589	32,806
	Other iron products	15,208	7,605	5,411
	Total	424,642	314,213	124,167

Appendix 4.

IMPORTS OF HEAVY IRON PRODUCTS FROM COUNTRIES WITH DEPRECIATED FRANC CURRENCIES
IN 1925.

(Quantities in metric tons.)

No. on the statistical list of goods	Product	1925 Total imports	Portion imported from					Columns 1-5	
			1 France	2 Alsace-Lorraine	3 Saar Territory	4 Belgium	5 Luxemburg	Total	Percentage of total imports
777a	Pig iron	201,949	16,991	54,008	28,124	8,515	20,221	127,859	63.3
777b	Ferro-alloys	5,553	—	—	—	—	—	—	—
778a	Cast-iron pipes over 7 mm., rough . .	16,844	—	—	16,059	—	—	16,059	95.3
778b	» » » over 7 mm., finished . .	2,638	—	—	2,480	—	—	2,480	94.0
779a	» » » up to 7 mm., rough . .	2,218	—	—	2,124	—	—	2,124	95.8
779b	» » » up to 7 mm., finished . .	497	—	—	463	—	—	463	93.2
784	Semi-finished products	213,667	1,469	52,776	34,173	—	109,840	198,258	92.8
785A1	Girders	131,083	1,644	19,959	66,951	5,156	17,929	111,639	85.2
785A2	Bar and sectional iron	352,773	7,806	52,512	159,841	3,455	48,054	271,668	77.0
785B	Hoops and strips								
786a	Sheets, 5 mm. and over, and plates . .	10,362	258	645	4,251	—	—	5,154	49.7
786b	» over 1 mm. and under 5 mm. . .	19,728	729	1,355	4,652	—	—	6,736	34.1
786c	» not exceeding 1 mm.	25,493	1,283	1,103	1,054	949	—	4,389	17.2
787	» ground, etc.	205	—	—	—	23	—	23	11.2
788a	Tin plates	15,067	88	195	1,980	—	—	2,263	15.0
788b	Galvanised sheets	1,439	—	—	459	—	—	459	31.9
788c	Terne plates or sheets, etc.	255	—	—	—	—	—	—	—
789	Sheets and plates, corrugated, expandible, etc.	719	—	—	—	—	—	—	—
790	Other sheets and plates, perforated, etc.	169	—	—	—	—	—	—	—
791a ¹	Rolled wire, rough	46,896	330	4,176	30,320	—	74	34,900	71.5
791b ¹	» » worked	1,385							
792a ¹	Drawn wire, rough	360							
792b ¹	» » worked	100	—	—	—	—	—	—	—
793a	Spiral pipes, rough	14	—	—	—	—	—	—	—
793b	» » worked	91	—	—	—	—	—	—	—
794a	Rolled or drawn tubes, rough, 2 mm. and upwards	10,543	—	—	1,866	—	—	1,866	17.7
794b	Rolled or drawn tubes, worked, less than 2 mm.	51	—	—	—	—	—	—	—
795a	Rolled or drawn tubes, 2 mm. and upwards	4,116	—	—	1,272	—	—	1,272	30.9
795b	Rolled or drawn tubes, less than 2 mm. .	109	—	—	—	—	—	—	—
796a/b	Rails	96,160	508	5,805	80,385	—	3,141	89,839	93.4
796c	Sleepers								
796d	Fishplates, sole-plates	516	—	—	—	—	—	—	—
797	Railway rolling-stock								
	Total	1,160,900	31,106	192,534	436,454	18,098	199,259	877,451	75.58

¹ Change of item in the Customs list, altered classification.

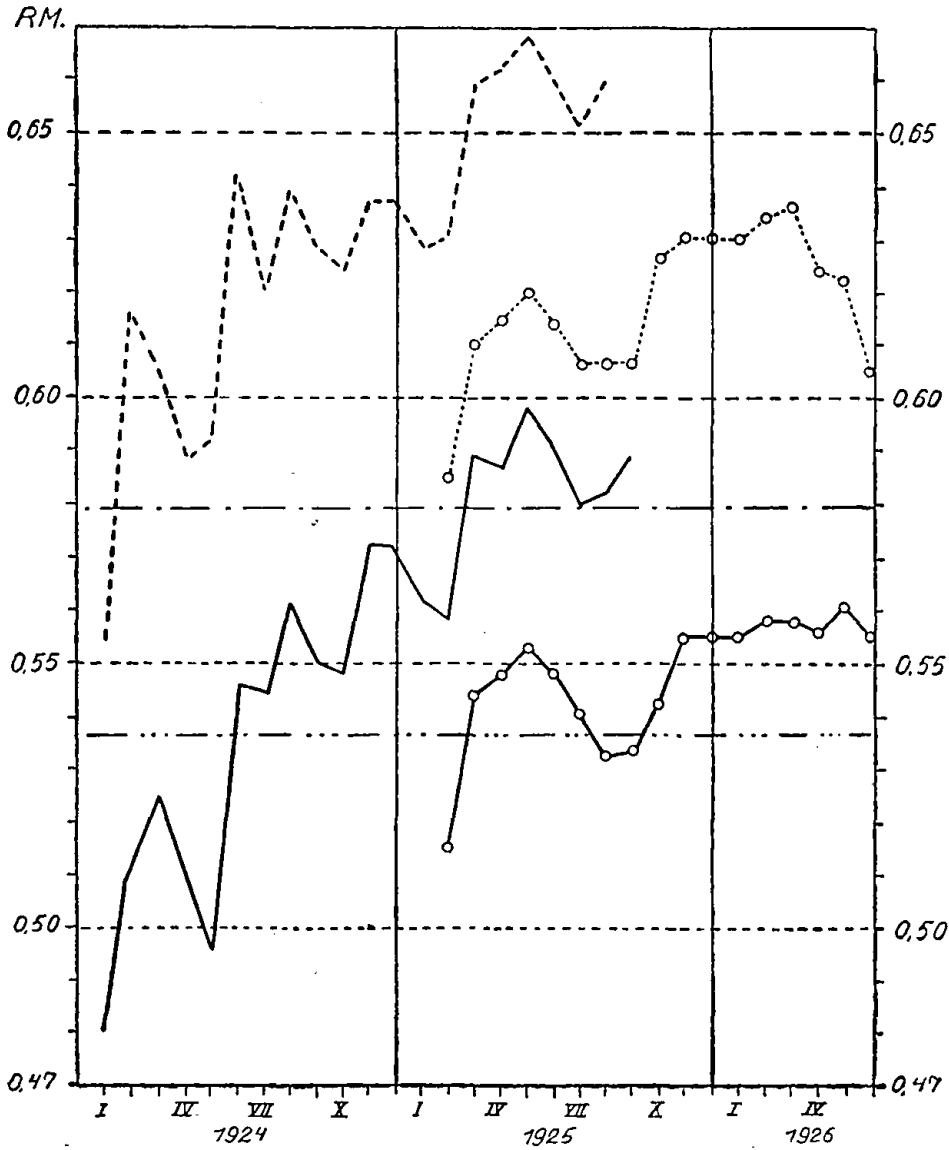
Appendix 5.

TAXATION AND SOCIAL WELFARE CHARGES IN THE CASE OF SEVEN GERMAN IRON-WORKS
 COMPARED WITH SHARE CAPITAL AND NET PROFITS.
 (Expressed in Thousands of Reichmarks.)

German iron-works	(a) <i>Pre-war.</i>		(b) <i>Post-war.</i>		Taxation and social welfare charges		How made up:			
	Share capital		Net profits				Taxes		Social welfare charges	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
A	22,000	26,300	1,978	315	1,450	3,951	217	1,441	1,223	2,510
B	7,500	8,333	2,533	116	346	1,277	?	707	?	570
C	30,000	80,000	14,513	19	5,100	16,073	2,376	10,977	2,724	5,096
D	21,000	64,500	6,109	4,029	2,217	7,611	?	3,848	?	3,763
E	46,000	160,000	10,114	350	3,940	17,900	1,340	10,700	2,600	7,200
F	106,000	300,000	23,228	1,212	8,622	24,024	4,027	15,010	4,595	9,014
G	23,440	22,500	3,950	1,538	887	2,387	496	1,601	391	786
Total (for the seven Works) .	255,940	661,633	62,425	7,579	22,562	73,223	?	44,284	?	28,939

Appendix 6.

MOVEMENT OF AVERAGE REAL EARNINGS PER HOUR IN THE IRON INDUSTRY OF RHENISH WESTPHALIA DURING THE PERIOD 1924-1926.



- . — = Average earnings per hour of a locksmith in the first quarter of 1914.
- - - - = Average real earnings per hour of a locksmith, including family, etc., allowances, in 1924 and 1925, according to the Reich index figure (old method).
- · · · · ○ = Average real earnings per hour of a locksmith, including family, etc., allowances, in 1925 and 1926, according to the Reich index figure (new extended method).
- - - - - = Average earnings per hour of the whole shift in the first quarter of 1914.
- — — = Average real earnings per hour of the whole shift, including family, etc., allowances, in 1924 and 1925, according to the Reich index figure (old method).
- — — ○ = Average real earnings per hour of the whole shift, including family, etc., allowances, in 1925 and 1926, according to the Reich index figure (new extended method).

**OBSERVATIONS ON THE IRON AND STEEL INDUSTRY
OF THE LORRAINE AREA.**

Submitted by the Comité des Forges de France.

Communicated by M. DE PEYERIMHOFF DE FONTENELLE.

The Lorraine metal industry is of ancient origin, but was not developed until about 1880, when a satisfactory process for working the local ores was discovered. These had long been known to exist in abundance, but their large phosphorus content had hitherto prevented exploitation on a large scale. Progress was rapid, for in about thirty years the Lorraine metallurgical area rose to the important position it now holds in the world production of pig iron and steel. Until recently it was crossed by the Franco-German frontier, which divided it from north to south into two practically equal parts, the output of which was almost identical in value. In 1913 the French portion produced 3,546,000 metric tons of pig iron and 2,518,000 metric tons of steel, while the German portion produced 3,870,000 metric tons of pig iron and 2,285,000 metric tons of steel. The French portion included 99 blastfurnaces and 19 steel-works, while the German portion possessed 65 blastfurnaces and 9 steel-works. The incorporation of Alsace-Lorraine in France has thus increased the metal industry in the east of France to double its size of 1914. As the French iron and steel works in the east already held the most important position in the metal industry in our country before the war, the metallurgical area in French Lorraine to-day remains by far our largest centre of production, and alone represents 80 per cent of our output of pig iron and 70 per cent of our output of raw steel. These figures show the changes wrought in our eastern metallurgical area since the eastern frontier of France was extended to the Rhine. How far has the area been affected from the point of view of supplies and markets ?

As regards supplies, the situation varies as regards ore and coke, the two raw materials essential to the metal industry.

The existence in the sub-soil of Lorraine of one of the richest known deposits of iron ore explains the establishment of the metal industry in Lorraine. The industry has naturally been adapted for treating the Lorraine ore, with its relatively low iron and its high phosphorus content. The Lorraine metal industry has always used and still uses this ore almost exclusively, the only exceptions being a few special products produced on a small scale. The removal of the political frontier which crossed the Lorraine minette area should not affect the supply of ore for the Lorraine industry. The Lorraine iron and steel industry does not absorb the whole output of minette, but it has been found necessary to develop the exploitation of the mines beyond the needs of the local industry — while avoiding, of course, the risk of endangering future supplies — in order to reduce extraction costs by production on a large scale

so that the minette ore can be supplied to the Lorraine blastfurnaces at rates affording compensation for the high manufacturing costs which have to be borne under other heads. In 1913 approximately 23,000,000 metric tons were treated in Lorraine itself (French and German portions), while the total output amounted to 41,000,000 metric tons. The post-war situation has remained unaltered, and during the first half of 1926 the consumption of minette in Lorraine amounted to nearly 11,000,000 tons of a total of 17,752,000 tons extracted. The surplus was despatched to Northern France, to the Saar, to Luxemburg, Belgium and Germany.

The situation with regard to coke is quite different, for, although the Saar coalfield is extended into Lorraine, the subsoil of the latter is much less rich in fuel. Moreover, neither the Lorraine nor the Saar coal is of the quality required to make good coke for the metal industry, and can only be used when mixed with other qualities of coal. Before the war there were neither collieries nor coke-works in French Lorraine; the whole of the coal required was purchased either from our coal-mines in the Nord and the Pas de Calais or from Germany, which used to supply no less than 2,400,000 metric tons annually. The German Lorraine blastfurnaces obtained from 70,000 to 80,000 metric tons of coke locally — a very small figure as compared with the total consumption (4,548,000 metric tons), more than 80 per cent of which came from the Ruhr. The total requirements amounted to 8,650,000 metric tons of coke, and the whole of the Lorraine basin used about 16 per cent of French coke; the remainder was supplied almost entirely from Westphalia.

The situation has not been greatly altered by the Treaty of Versailles, for the sources from which the blastfurnaces in the Lorraine area obtained their coke have mostly remained outside the French frontiers. The re-incorporation of Alsace-Lorraine in France has indeed afforded fresh means of iron and steel production and a corresponding supply of ore, but only a very slight addition to the available amount of coke. ¹

Coke-works have been established during the last few years in the east of France. They help to improve the situation, for it is not essential to supply them with the best German coal, as the best English, French or Dutch coal is quite suitable. Our iron-mining area in Lorraine is thus less dependent on German coke, and eventually we shall not be compelled to obtain coke from the Ruhr except in small quantities.

* * *

Before 1914 practically no relations existed between the undertakings on either side of the Franco-German political frontier; the trade between the two groups was very small, and both sides had their own home market.

With one exception, the iron and steel works in German Lorraine were closely connected with those in the Saar or Westphalia, which they supplied with a large share of their production of pig iron and raw steel, or of roughly cast steel. The

¹ The mines in the Saar are of no great help, as they supply a type of fuel which does not produce the very hard coke necessary for the large metal furnaces in Lorraine. In recent years experiments have been made in the manufacture of coke from Saar coal, and highly interesting results have been obtained. It has not yet been possible to apply them on a large scale, however; in any case, as the output of the Saar Basin is very small as compared with demands of the Lorraine metal industry, it would be vain to hope that the latter could, even under the most favourable circumstances, obtain all the fuel or coke it requires from the Saar.

former were to some extent complementary to the latter. They did not in themselves constitute a self-contained whole; they did not carry out the transformation of the wrought metal far enough or in a sufficient variety of terms to produce the whole or almost the whole range of metallurgical products which would have enabled them to appeal to a varied clientèle and so secure, through the diversity of their manufactured articles and the number of their markets, a regular supply of orders.

Out of a total production of 3,870,000 metric tons of pig iron, 432,000 metric tons of semi-manufactured products for sale and 1,495,000 tons of finished steel products, the works in German Lorraine in 1913 sold, within the present limits of the Reich, 836,000 metric tons of pig iron, 490,000 metric tons of semi-manufactured products and 577,000 metric tons of finished products, *i.e.*, approximately 50 per cent of their total output of steel.

These facts explain the magnitude of the task and the difficulties of the problem which arose when, at the height of the post-war economic crisis, the recovered factories in Alsace-Lorraine were suddenly cut off from the works whose means of production they supplemented and with which they shared the German home and export markets. They found themselves suddenly brought into contact with the iron and steel works in French Lorraine, and were obliged to come to an arrangement with them to regulate the sale of their respective products on the home and foreign markets which were now common to both of them. The situation demanded careful handling, because the works within the pre-war boundaries of France and the recovered works used the same raw material and the same methods, and turned out products which were largely similar, and because the capacity of absorption of the French home market had not increased proportionately with the capacity of production in our metallurgical area in Lorraine. In spite of the difficulties involved, the task now appears to have been accomplished: the works in the former Alsace-Lorraine have completely adapted themselves to the new situation and have acquired a clientèle, or, rather, have created an entirely fresh one, for the strong commercial organisation in Germany which concentrated the sale of the entire output of the German iron and steel works amongst a few collective selling organisations, forbade all direct contact between the producing works and the consumer. The best proof of the results obtained is supplied by the activity of the Lorraine metallurgical area in 1925, which was higher than any realised in the past — 6,815,000 metric tons of pig iron and 5,067,000 metric tons of half-finished or finished steel products. As in the past, the Lorraine metal continues to hold an important place on the international market, for our Lorraine works alone supply practically the whole French export. ¹

¹ French exports.

	Pig iron	Half-finished products or finished steel products
	Thousands of metric tons	
1921	670	828
1922	730	1,106
1923	613	1,366
1924	783	1,824

The official statistics for 1925, comprising the total exports of France and the Saar, give no figures comparable with the above, but the exports of France proper for 1925 were practically equal to those for 1924 as regards cast iron, and must be approximately 2,300,000 metric tons for steel.

The Lorraine area necessarily feels the keen competition which obtains on the international steel market. Moreover, its geographical position constitutes a distinct handicap in the struggle against the neighbouring Continental metallurgical areas. The Lorraine factories are further from the principal points of access to the sea, and have to pay heavier freighting for transporting their products by rail to the ports of embarkation.

Nor can they derive full advantage from the excellent means of communication provided by the waterway of the Rhine towards the coast or the centre of Europe. As they are not directly connected with navigable waterways, the iron and steel are compelled first to load on rail and then to tranship. Transshipment costs are always heavy in the case of metallurgical products on account of their weight and cumbersomeness, and soon cancel any advantage that might accrue from the use of a system of combined transport. The canalisation of the Moselle above Metz, a canal from the Moselle to the Saar and the construction of the Nord-Est canal are schemes for establishing direct communications by waterway between the whole metallurgical area of Lorraine and the districts round Paris, the north of France and the main ports. The existing economic conditions and the magnitude of the operations will prevent these schemes from being put into speedy execution, and accordingly our metal industry in Lorraine cannot look for any improvement in its situation in the near future.

Extract from
OBSERVATIONS ON THE BRITISH IRON AND STEEL INDUSTRY

Submitted by the National Federation of Iron and Steel Manufacturers.

Communicated by Sir Arthur BALFOUR.

1. PRELIMINARY SURVEY OF THE ESSENTIAL CONDITIONS GOVERNING THE
DEVELOPMENT OF THE IRON AND STEEL INDUSTRY.

In recent years the essential feature of the British iron and steel position has been the expansion in the steel-making capacity which took place during the war. This had the effect of improving immeasurably the equipment and efficiency of British steel-works practice. Considerations of time rendered it impossible to expand and improve blastfurnaces to the same extent and the lack of balance resulting from a big expansion of steel-making capacity and a very much smaller increase in blastfurnace capacity was met in various ways, *e.g.* by the increased use of scrap, by severely restricting exports of pig iron, and by the restricted production of iron other than for steel-making. If the demand for steel were to increase up to the present level of capacity and the demand for forge and foundry iron and for pig iron for export approached again the demand of 1913, it is probable that it would be difficult to meet the demand of steel-works for pig iron from home sources. The fact that, except in 1920, demand for steel has not approached the war production is due to many causes which have often been dealt with, but may be briefly summarised as follows:

1. Although it is believed that there is an immense potential demand, a world impoverished by the war could not make this demand effective. The belligerent countries which before the war supplied capital for the development of the newer countries were no longer in a position to do so, and much development work had to be postponed.

2. In the struggle for such effective demand as was in existence, Great Britain was handicapped in competition with the Continent by reason of one or more of the following factors:

- (a) Depreciated exchanges.
- (b) Lower labour costs.
- (c) European tariffs.
- (d) Export bounties.
- (e) Lower railway rates.

The production of pig iron in 1925 was therefore only at 52 per cent and that of steel 61.5 per cent of capacity. In this connection it should be stated that the improved efficiency due to the wartime extensions enabled prices to be reduced until in April 1926 they were only 17 per cent above pre-war, but that the advantages enjoyed by Continental competitors were such as to render even prices so low as those to which prices had been reduced by Great Britain unattractive to consumers. It is also suggested that one effect of cut-throat competition, which has existed for so long, whereby there has been no stable price level, has been to cause buyers to hold off in the hope that prices might fall still further.

Information regarding the output of rolled products is not available for 1913, so that it is not possible to measure the differences in the output of the various rolled products. Broadly it may be stated that the effect of the submarine campaign during the war was to increase the plate-making capacity of the country very considerably, and that this was still further increased as the result of the shipbuilding boom in 1920, but the slump in shipbuilding has caused a corresponding slump in the demand for ships' plates, and the output of plates is now less than before the war, as the reduction in the demand for ship's plates has not been made good by the increased demand for plates for tube-making and other purposes.

While the demand for heavy plates has decreased since the war, the production of thin plates has increased considerably, since the export demand for tin plates and galvanised sheets is higher than in 1913 and the home demand for thin sheets, other than galvanised and tin plate, has been affected by the vast increase in the output of motor-cars. The output of structural material is in excess of pre-war on account of the increase in building and structural work. The production of railway rails is considerably less than before the war, but most if not all of the deficiency is due to the export trade, the development of the newer countries being handicapped by conditions described above.

The actual home consumption of steel in recent years has been slightly in excess of pre-war, and the fact that this has not involved an increasing production of iron and steel is due to increased imports on the one hand and decreased exports on the other.

2. OUTPUT CAPACITY.

The capacity for production of pig iron is now about 12,000,000 tons per annum compared with approximately 11,000,000 tons before the war, while the capacity for steel ingots and castings is in the neighbourhood of 12,000,000 tons compared with rather more than 8,000,000 tons in 1913.

ANNEX VI.

INTERNATIONAL STEEL AGREEMENT.

SHARE QUOTAS IN THE INTERNATIONAL STEEL AGREEMENT.

INTERNATIONAL STEEL AGREEMENT

September 30th, 1926.

Article 1.

Each country shall pay 1 dollar monthly into a common fund for each ton of crude steel actually produced.

By the term "crude steel" is meant all the crude steel manufactured in the several countries by the Thomas, Bessemer, Siemens or Martin processes, by the electric crucible, or any other process. This sum shall be credited to the account of the country in question. The first time, it shall be paid two months after the present Agreement comes into effect in the form of drafts at three months; for subsequent months it shall be paid on the 25th of the month following in the form of a draft at three months.

Should the Government of one of the countries participating in the Agreement object to the transfer of all or any of the sums payable under the present Article, the actual payment might be replaced:

- (1) By the guarantee of a bank approved by the Managing Committee; or
- (2) By a cash payment into a blocked account at a bank situated in the country in question and approved by the Managing Committee.

Article 2.

The administration of the common fund shall be provided for by a Managing Committee of four members appointed respectively by each of the countries Parties to the Agreement, *i.e.* Germany, Belgium, France, and Luxemburg. Each of these four countries shall also appoint two deputy members to replace the permanent member in the event of his being absent or unable to attend.

The chairmanship of the Managing Committee shall be held for one year by each of the countries concerned in rotation.

In a general way, and in addition to the special provisions laid down in the Articles following, the Managing Committee shall make the necessary arrangements for carrying out the execution of the clauses of the present contract and for exercising the supervision which it entails. It shall also have full powers for the administration, handling, and custody of the monies paid into the common fund or held by it. The number of votes of the Managing Committee shall be allotted in accordance with the quotas.

Article 3.

The Managing Committee shall fix the quota of each country for each quarter in accordance with the provisions of Article 4 not later than a fortnight before the beginning of that quarter, by applying coefficients — fixed once for all for each country — to the total tonnage representing the probable demand of the market.

Article 4.

The coefficients allotted to the different countries can only be modified by unanimous consent.

The total quarterly tonnage, and accordingly the quotas of each country, shall be fixed by a two-thirds majority of the votes, each country commanding the number of votes proportional to its participation, with the proviso that unanimity of all the countries but one shall constitute a sufficient majority even if this latter country represents more than a quarter of the votes.

The Saar shall never vote individually; its votes shall be divided between France and Germany in their ratios of one-third and two-thirds.

Article 5.

Every month each country's actual net production of crude steel during that month shall be ascertained, in relation to the figures indicated by the quotas.

Article 6.

If the quarterly production of a country exceeds the quota which was fixed for it, that country shall pay in respect of each ton in excess a fine of 4 dollars, which shall accrue to the common fund, in addition to the payment provided for in Article 1.

Article 7.

If the production of any country has been below the quota allotted to it, that country shall receive in compensation from the common fund the sum of 2 dollars per ton short.

The tonnage entitling to compensation may not, however, exceed 10 per cent of the quota fixed for the quarter in question. If a shortage of 10 per cent or more below the quota fixed continues during several successive quarters, the tonnage entitling to compensation shall be reduced by two per cent for each successive quarter, so that in the second quarter of such shortage of 10 per cent or more the compensation paid shall not exceed 8 per cent, and in the third quarter it shall not exceed 6 per cent, and so on.

In the event of *force majeure*, the General Meeting of the several groups shall decide by a majority vote the amount of the compensation payable.

Article 8.

The accounts shall be balanced quarterly, the excess contributions and sums due in compensation mentioned in Articles 6 and 7 being payable immediately after the balance of accounts.

At the close of each half-year, the common fund shall be liquidated, after deduction of the general expenses; the remaining balance shall be distributed between the several countries:

- (1) In proportion to the actual production during the accounting period, up to the limit of the payments made under Article 1;

(2) And, if any balance remains over from lines, in proportion to the participation figures of the accounting period concerned.

The first liquidation of the common fund shall take place on April 1st, 1927.

Article 9.

The present Agreement shall terminate on April 1st, 1931. Up to May 1st, 1929, however, any country shall be entitled to give notice of withdrawal from the Agreement on October 31st, 1929, in which case the other countries shall be released from all obligations on the same date.

Article 10.

The present Agreement was concluded on the assumption that throughout its duration the tariff rates applicable to iron and steel products imported into Germany would not be increased. If Germany should proceed to increase the said rates, the present Agreement may be denounced at any time by each of the Contracting Parties at three months' notice, and each of the Parties shall then recover full liberty of action in relation to its Government as regards tariffs.

The present Agreement, however, may be denounced at any time on and after April 1st, 1927, at three-months' notice, if the Government of one of the Contracting Parties objects to it on the ground that, in the absence of a commercial treaty, one of the other countries is applying unfavourable treatment to the products as a whole.

If Germany or France denounces the present Treaty for one of the two reasons mentioned above, they shall also have the right to denounce it as against the other Contracting Parties, who, in turn, shall be entitled to denounce it *inter se*.

Article 11.

Exchange in respect of the quotas of the countries are not allowed in the case of any company or *Konzern* unless that company or *Konzern* possesses and operates undertakings in another country. Ownership or at least 40 per cent of the share capital of these undertakings shall constitute possession.

Previous notice of such transfers must be given to the Managing Committee. The transfer cannot take effect until the beginning of the next accounting period, and must apply at least for that period.

Article 12.

If on April 1st, 1927, the total consumption has not increased to such an extent that the Luxemburg group shall have obtained a quota of tonnage representing a minimum annual production of 2,360,000 tons, and on April 1st, 1929, tonnage representing a minimum annual production of 2,480,000 tons, that group shall be entitled to withdraw from the present Agreement at three months' notice. It shall then be open to the other countries also to withdraw from the present Agreement.

Article 13.

Any disputes arising between the Parties as to the interpretation and carrying out of the present Agreement shall be compulsorily settled by arbitration.

Article 14.

It shall be open to steel manufacturers in the other European countries to join in the present Agreement.

Admission shall be sanctioned by the General Meeting:

- (1) By a majority vote if participation is determined on the basis of the production of the first quarter of 1926;
- (2) Unanimously, if admission is granted on some other basis.

If the participation of the participating countries in the total production of the European countries for any one half-year is 5 per cent less than the same participation during the first quarter of 1926, the rescission of the present Agreement may be demanded by any one of the groups Parties to the Agreement, to take effect after three months' notice, which must be given not later than three months after the expiration of the half-year under consideration.

The Agreement may also be rescinded by any one of the countries Parties to the Agreement at three months' notice in the event of the total figure fixed for any one half-year being less than 13,139,000 tons. In this event, the notice of rescission must be given within a month.

SHARE QUOTAS IN THE INTERNATIONAL STEEL AGREEMENT.

Note transmitted by Dr. C. LAMMERS.

In fixing the share quotas of the individual countries in the International Steel Agreement, the basis taken was that of an aggregate annual production of raw steel of 25,278,000 tons and the annual quotas were fixed on this basis as follows:

	%
Germany	40.45
France	31.89
Belgium	12.57
Luxemburg	8.55
Saar Territory	6.54

These participation figures are changed if the total output rises by 1, 2, 3 or 4 million tons up to 29,278,000 tons. Above this figure the final quotas are as follows:

	%
Germany	43.18
France	31.18
Belgium	11.56
Luxemburg	8.30
Saar Territory	5.78

In the event of any further increase in output, these percentage quotas will remain unchanged. Belgium, however, on joining the International Steel Trust, was granted a fixed quota of 295,000 tons per month irrespective of any restriction which might be imposed on output. As a consequence, the quotas of the other countries were somewhat reduced.

In November 1926, the total output of the International Steel Cartel for the fourth quarter of 1926 was fixed at 29,278,000 tons. In December 1926, by a resolution of the International Steel Cartel, it was decided to reduce the output for the first quarter of 1927 by 1.5 million tons. In March 1927 this reduced output was once more raised by 1.5 million tons for the second quarter of 1927.

At the beginning of 1927, Czechoslovakia, Austria and Hungary joined in the International Steel Agreement. These three countries together received a share of 7.272 per cent, or 2.14 million tons, annually on the basis of a total output by the International Steel Cartel of 27,278,000 tons. These three Central European countries having joined the Cartel as a single unit, the distribution of their quota between them is a matter to be settled by themselves.