THE PIG INDUSTRY.

The Bureau of Agricultural Economics of the Department of Commerce and Agriculture has recently published a report on the pig industry of Australia entitled "Economic Outlook for the Pig Industry." It is felt that this comprehensive report deserves the widest possible distribution and, for this reason, the following summary of the report has been prepared.

The main purpose of the investigation of the pig industry of Australia carried out by the Bureau of Agricultural Economics was to assess the probable future demand for pigmeats in both the local and overseas markets, and to determine what expansion in production could be safely encouraged. The year 1956 was considered as the base year for the estimates of outlook and all calculations are based on that date. The procedure adopted in the preparation of the report can be divided into two phases. First, a full statistical analysis of all available data was made and certain interim conclusions reached. Secondly, the interim conclusions were discussed with representatives of the industry and certain controversial assumptions considered at some length. At the time that the report was compiled, a Food Mission from the United Kingdom was visiting Australia with the object of finding ways and means of increasing Australia's over-all production of food. However, the economic outlook for the pig industry was considered without taking into account any likely changes as a result of the Food Mission's activities, and some modification of the views expressed may, therefore, become necessary when the results of the deliberations are made public.

The report was divided as follows:—

(1) Production and Exports.

(*a*) Production trends in Australia;
(*b*) Australian export trade;
(*c*) overseas countries;
(*d*) production costs;
(*e*) standards of production.

(2) Consumption.

(*a*) Domestic standards and trends;
(*b*) overseas standards and trends.

(3) Marketing and Price.

(*a*) Australian market prices;
(*b*) price spread between producer and consumer;
(*c*) overseas market prices;
(*d*) marketing organisation and regulations.

(4) Future Prospects for the Pig Industry.

(*a*) Current developments;
(*b*) production;
(*c*) consumption;
(*d*) export trade;
(*e*) limits of expansion;
(*f*) conclusions.

PRODUCTION AND EXPORTS.

(a) Production Trends in Australia.

Although the number of pigs in Australia in 1860 was only 351,100, this figure had increased to 950,300 by the beginning of the present century. In 1917 the total was 1,169,400, but had fallen to 695,968 by 1919. Numbers again increased to 985,900 in 1922 and, from that year, remained at a fairly steady level until 1938. The increase in pig numbers received two marked setbacks in the present century as a result of outbreaks of swine fever. In 1941 a peak of 1,797,300 was reached. In the earlier years more than half the pig population of Australia had been in New South Wales and Victoria, with Queensland the next most important State. Latterly, however, the pig population of Queensland has increased rapidly and this State has now replaced Victoria as the second pig-raising State. Classification of the pig population into types as at 31st March, 1944, 1945, 1946 and 1947 is given in the following table:—

TABLE I.

Classification of Australian Pig Population.

('000 head.)

Classification.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth (a).
As at 31st March, 1944—							
Boars	14	7	12	4	4	1	43
Breeding Sows	69	38	53	22	20	6	210
Baconers and Porkers ...	179	92	132	65	54	16	537
Backfatters	9	3	5	2	3	...	23
Stores	102	80	105	21	19	3	330
Suckers, Weaners and Slips	188	118	145	72	65	19	604
Total Pigs	561	338	450	186	164	46	1,747
As at 31st March, 1945—							
Boars	12	6	12	3	3	1	39
Breeding Sows	61	33	51	19	18	6	188
Baconers and Porkers ...	174	82	128	60	58	16	519
Backfatters	6	2	5	2	2	...	17
Stores	102	78	115	18	21	4	338
Suckers, Weaners and Slips	169	95	126	58	62	19	529
Total Pigs	524	296	438	161	164	47	1,630
As at 31st March, 1946—							
Boars	11	6	11	3	3	1	35
Breeding Sows	52	32	46	16	15	6	167
Baconers and Porkers ...	147	78	136	44	47	17	469
Backfatters	5	2	6	2	1	...	16
Stores	86	69	104	13	17	3	293
Suckers, Weaners and Slips	132	85	113	43	55	18	446
Total Pigs	432	272	415	120	138	47	1,425
As at 31st March, 1947—							
Boars	10	7	10	3	2	1	33
Breeding Sows	45	36	40	17	12	7	156
Baconers and Porkers ...	123	69	106	43	33	15	390
Backfatters	5	2	4	2	1	...	14
Stores	66	74	87	13	13	4	258
Suckers, Weaners and Slips	110	104	92	56	40	20	422
Total Pigs	358	290	340	134	102	47	1,273

(a) Includes A.C.T. and Northern Territory.

The most significant feature of this table is the steady decline since 1944 in the number of boars and breeding sows. The industry in Australia was developed as a sideline to the dairy industry, as was the case in Denmark, Holland and New Zealand. In the following table the percentage distribution of the pig population between States is tabulated. It will be seen that in March, 1947, 28.15 per cent. was recorded in New South Wales and 26.72 per cent. in Queensland.

TABLE II.

As at 31st December.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	N.T. and A.C.T.
1935 ...	33·77	24·29	23·56	7·22	7·58	3·49	0·09
1936 ...	32·49	26·50	24·18	7·07	6·36	3·33	0·07
1937 ...	32·43	25·93	25·72	6·06	5·87	3·91	0·08
1938 ...	32·70	21·87	28·19	6·18	7·05	3·93	0·08
1939 ...	31·00	20·45	26·89	8·22	10·28	3·09	0·07
1940 (a) ...	28·25	22·13	24·28	10·57	12·12	2·60	0·05
1941 (a) ...	30·73	19·31	28·73	8·11	10·02	3·01	0·09
1942 (a) ...	31·16	19·70	26·19	10·00	9·72	3·15	0·08
1943 (a) ...	32·31	19·34	25·78	10·65	9·37	2·66	0·05
1944 (a) ...	32·13	18·16	26·13	9·87	10·03	2·87	0·06
1945 (a) ...	30·33	19·08	29·14	8·42	9·67	3·29	0·07
1946 (a) ...	28·15	22·82	26·72	10·53	7·99	3·72	0·07

(a) As at March of following year.

As far as pigmeat production is concerned, the number of pigs slaughtered in Australia for consumption and boiling down increased steadily from 1929-30 to 1936-37. Slaughterings then decreased for two years, after which the upward trend was again resumed, reaching a peak of 2.6 million head in 1941-42. There is a marked similarity between the graph for the production of pork and that for slaughterings of pigs. Pig slaughterings are set out in the following table:—

TABLE III.

Number of Pigs Slaughtered—Australia by States.

('000 head.)

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	(a)	(b)	(b)	(c)	(c)	(b)	(e)
1929–30 ...	405·6	347·7	366·6	94·9	59·4	62·1	1,337·0
1930–31 ...	417·5 (b)	399·2	408·1	111·3	79·2	53·6	1,469·7
1931–32 ...	425·7	392·2	408·2	135·8	96·5	51·3	1,510·6
1932–33 ...	455·8	426·0	376·8	150·3	126·6	48·5	1,585·1
1933–34 ...	465·5	419·7	406·0	167·5	127·2	50·0	1,637·0
1934–35 ...	509·1	414·7	488·5	150·6	148·3	50·9	1,763·3
1935–36 ...	595·6	495·5	558·1	153·9	121·9	57·6	1,983·7
1936–37 ...	613·9	568·5	528·7	173·0	129·8	58·5	2,073·9
1937–38 ...	537·0	509·0	513·4	168·0	104·9	63·8	1,897·4
1938–39 ...	552·9	434·4	562·1	124·7	91·9	72·0	1,839·6
1939–40 ...	542·5	422·5	684·5	122·9	113·6	65·0	1,952·6
1940–41 ...	596·9	571·0	707·6	224·4	167·3	81·2	2,350·4
1941–42 ...	737·9	570·4	638·9	289·2	276·7	78·1	2,593·9
1942–43 ...	604·2 (b)	439·9	576·0	188·4 (b)	198·4 (b)	73·8	2,082·9
1943–44 ...	507·7 (b)	388·4	510·0	210·8 (b)	161·0 (b)	70·0	1,848·7
1944–45 ...	543·2 (b)	415·7	510·6	239·0	166·2	58·0	1,933·4
1945–46 (d)	459·5	316·3	572·1	171·9	177·6	52·9	1,650·9
1946–47 (d)	404·9	353·9	432·0	163·1	151·0	49·7	1,555·5

(a) Year ended March. (b) Year ended June. (c) Year ended December.
(d) Slaughterings of pigs for pork and ham only—slaughterings for boiling down not included. Subject to revision.
(e) Including Northern Territory and Australian Capital Territory.

Production of pork increased rapidly in the pre-war years up to 1936-37. The decrease in pork production in 1937-38 and 1938-39 was the result of adverse seasonal conditions. Production increased again after 1938-39 and reached a peak of 130,000,000 lb. in 1941-42. In February, 1941, advice was received from the United Kingdom that shipments of baconer carcases were to be discontinued. This was responsible for the heavy slaughterings of breeding stock in 1941-42 and caused pork production to fall to 87,000,000 lb. in 1942-43, a fall of 33 per cent. in one year. Towards the end of 1942, the United Kingdom again agreed to accept baconer carcases and there was a slight recovery in pork production.

In pre-war years the production of bacon and ham remained at a moderately steady level, varying between 70,000,000 and 77,000,000 lb. Production increased after the outbreak of war owing to the increased demand for this type of meat for service requirements. In 1944-45, a peak production of 121,000,000 lb. (cured weight) was reached. Since that year, however, production has declined and in 1946-47 totalled only 103,000,000 lb. The following table gives details of total pigmeat production in Australia from 1929 to 1947:—

TABLE IV.

Total Pigmeat Production in Australia.

('000 lb.)

Year.	Pork.	Bacon and Ham.	Total Pigmeat expressed as a Pork equivalent. (a)	Percentage increase on Base Year 1929–30.
1929–30	39,432	70,102	144,585	100·0
1930–31	50,297	71,050	156,872	108·5
1931–32	50,950	71,122	157,633	109·0
1932–33	59,334	68,365	161,882	112·0
1933–34	63,236	71,490	170,471	117·9
1934–35	78,063	71,005	184,569	127·7
1935–36	84,011	77,655	200,493	138·7
1936–37	96,797	73,677	207,312	143·4
1937–38	86,929	70,340	192,439	133·1
1938–39	82,953	74,454	194,634	134·6
1939–40	95,475	78,586	223,354	154·5
1940–41	113,265	89,373	247,324	171·1
1941–42	130,114	95,119	272,792	188·7
1942–43	87,385	104,835	244,638	169·2
1943–44	101,878	102,419	255,506	176·7
1944–45	95,357	126,090	284,491	196·8
1945–46	78,669	108,835	241,922	167·3
1946–47	69,514	103,262	224,408	155·2

(a) Conversion of bacon and ham to a pork equivalent is based on the relation—2 lb. (cured weight) bacon and ham = 3 lb. (carcase weight) pork.

(b) Australian Export Trade.

Up to 1929, Australia was a net importer of pork, most of which came from New Zealand but, in that year, exports exceeded imports. In 1931-32 over 7,000,000 lb. of pork was exported. From 1933-34 onwards the trend in pork exports was rapidly upwards. Total exports actually increased from 8.7 million lb. in 1933-34 to 33.9 million lb. in 1937-38, or by 290 per cent. in this four-year period. From 1939 to 1941 exports increased even more rapidly and reached a record level of 75,000,000 lb. in 1940-41. Exports fell by almost 50 per cent in 1941-42, and to less than 2,000,000 lb. in 1942-43, the drop being due to the fact that the United Kingdom decided to discontinue taking baconer carcases. Exports recovered in 1943-44 to 16,000,000 lb. A further striking increase occurred in 1944-45, but in 1946-47 the effect of continued feed shortages and the narrowing of the margin between costs and returns was reflected in a marked decrease in the volume of exports. Fluctuations in the quantities of baconers and porkers exported and the relative importance of each are shown in the following table:—

TABLE V.

Year.	Porker Pork.	Baconer Pork.	Total.	Per cent. Baconer Pork.
	'000 lb.	'000 lb.	'000 lb.	
1936-37 ...	12,768	12,656	25,424	50
1937-38 ...	11,760	21,840	33,600	65
1938-39 ...	8,624	22,064	30,688	72
1939-40 ...	10,752	40,880	51,632	79
1940-41 ...	32,032	41,888	73,920	57
1941-42 ...	23,296	10,304	33,600	31
1942-43 ...	448	784	1,232	64
1943-44 ...	1,568	14,000	15,568	90
1944-45 ...	1,705	35,382	37,087	96
1945-46 ...	2,842	25,431	31,273	91
1946-47 ...	3,255	14,629	17,884	82

The United Kingdom has been the main export market for Australian frozen pork and a marked development of the export trade has been almost wholly associated with the development of the United Kingdom frozen pork market. In the year 1932-33 this market accounted for 93 per cent. of total pork exports from Australia; in the peak year 1940-41 97 per cent. of total exports were sent to the United Kingdom, but in 1943-44 the figure had fallen to 87 per cent. Smaller markets exist in Ceylon, British Malaya, Egypt, the Philippines and British Pacific Islands.

In the pre-war years exports of bacon and hams from Australia remained at a fairly steady level and in 1938-39 the figure was 1,739,000 lb. The export figure jumped to over 4,000,000 lb. in the first war year. Although it has fluctuated since, the level of exports has been considerably higher than in the pre-war period, reaching a peak of 8,625,000 lb. in 1943-44. As was the case with pork, Queensland is the chief exporting State and, in 1940-41, was responsible for 36 per cent. of total exports of bacon and ham, although her percentage for the five years ended 1938-39 was as high as 69 per cent.

In pre-war years only small quantities of bacon and ham were exported to the United Kingdom. In 1945-46 a maximum of almost 3,000,000 lb. was recorded. The main export trade is with Eastern and Pacific markets, the chief of which are the Netherlands East Indies, British Malaya, the Philippine Islands and Hong Kong.

(c) Overseas Countries.

Before considering in detail the market possibilities for Australian pig exports, a brief survey is made of conditions in several overseas countries with large pig industries. The following table gives the pig population of chief pig-raising countries:—

TABLE VI.

Pig Population of the Chief Pig-raising Countries.

(*Million head.*)

Countries.	1934–38.	1940.	1941.	1942.	1943.	1944.	1945.	1946.	1947.
Empire Countries—									
United Kingdom ...	4·61	4·11	2·56	2·14	1·83	1·87	2·15	1·95	1·63
Canada	3·76	6·00	6·08	7·12	8·15	7·74	6·02	4·91	5·47
South Africa	0·97	0·47	(a)	(a)	1·74	(a)	(a)	1·10	(a)
Australia	1·16	1·45	1·80	1·48	1·56	1·75	1·63	1·43	1·27
New Zealand	0·76	0·71	0·77	0·69	0·61	0·58	0·59	0·55	(a)
Foreign Countries—									
United States	43·64	54·35	60·61	73·88	83·74	59·33	61·30	56·90	(a)
U.S.S.R....	23·12	26·70	(a)	(a)	12·40	13·60	8·70	7·20	(a)
Germany	18·24	16·69	14·01	11·58	12·82	12·29	7·14	8·41	(a)
Brazil	24·04	21·69	(a)	25·00	(a)	(a)	24·34	(a)	(a)
France	7·08	4·98	5·01	4·64	3·91	3·67	4·39	5·28	(a)
Poland	9·68	9·68	(a)	(a)	(a)	(a)	1·69	2·67	2·99
Spain	6·94	5·61	(a)	4·91	(a)	(a)	(a)	4·70	(a)
Denmark	3·30	3·27	1·81	1·21	2·08	2·08	1·65	1·77	1·82
Argentina	3·67	3·38	4·98	5·71	6·80	8·80	8·01	5·00	4·50
Italy	2·98	4·52	3·60	3·67	3·28	3·07	3·04	3·00	3·10
Rumania	2·44	1·77	1·65	2·00	1·91	(a)	1·02	1·41	(a)
Yugoslavia	3·14	3·50	(a)	(a)	(a)	(a)	1·50	2·73	(a)
Czechoslovakia ...	3·16	2·77	3·07	2·93	3·26	3·10	2·36	2·91	(a)
Hungary	4·00	4·39	3·95	4·67	(a)	(a)	1·11	1·33	1·45
Netherlands	1·59	1·19	0·72	0·69	0·85	(a)	0·98	1·06	(a)
Sweden	1·35	1·31	1·00	0·84	0·99	1·05	1·08	1·16	1·17

(*a*) Not available.

Source: F.A.O. Report—"Livestock and Meat."

The number of pigs in various Empire and foreign countries can be seen from this table. In exporting countries pig numbers reached a maximum in 1931 but numbers were drastically reduced in subsequent pre-war years due mainly to the restriction of imports into the United Kingdom. A further reduction in pig numbers in both the United Kingdom and Germany occurred in 1938. It will be seen that the pig population of the United States of America far exceeds that of any other country. In early 1946 pig numbers in Europe, estimated at approximately 46,000,000 head, were 57 per cent. below the average for the years 1936-40. Total pig numbers in the United Kingdom were less than half the pre-war average. The present world shortage of feed and feed grains will prevent any great increase in pig numbers on the Continent and in the United Kingdom in the next year or two.

World trade in pig meats prior to World War II was dominated by the movement of bacon and hams to the United Kingdom. In 1938, 844,000,000 lb., or 94 per cent. of total estimated world exports of 897,000,000 lb. were imported by the United Kingdom. World exports of pork have been on a much smaller scale, totalling only 244,000,000 lb. in 1938, the main exporting country being New Zealand with 59,000,000 lb. The United Kingdom imported 138,000,000 lb., or 56 per cent. of total world exports in 1938, while Germany was the next most important market with 89,000,000 lb. or 36 per cent.

United Kingdom.

During the years 1930-35 the pig industry expanded rapidly in the United Kingdom and then remained fairly stable until the outbreak of war. During the war total pig numbers decreased from 4,394,000 in 1939 to 1,829,000 in 1943, or by 58 per cent., but an even more significant decline occurred in the number of breeding sows which decreased from 542,000 to 186,000, or by 66 per cent. The fall during these years was the result of a low feed-ration priority, shortages of feed and scarcity of manpower. By June, 1944, the pig population had shown signs of recovery. However, this trend has since been reversed owing to the acute grain shortage and, by 1st June, 1947, the pig population totalled only 1,628,000. Domestic production of pork and bacon is estimated to have declined by 60 per cent. to 65 per cent. from the pre-war level. New Zealand was by far the major source of United Kingdom frozen pork supplies but Australia exported more to the United Kingdom than did Argentina. Pre-war, Denmark supplied approximately 50 per cent. of United Kingdom requirements of imported bacon, although increased supplies were received from Canada. The United States has always been the chief exporter of hams to the United Kingdom.

Argentina.

The outbreak of World War II and the resulting diminution in European production provided the stimulus for an expanding pig industry. In 1930 Argentina's pig population totalled only 3.77 million and, by 1937, the 4,000,000 mark had just been reached. By June, 1944, the record level of 8.8 million was reached, but a marked downward trend followed, with the figure in June, 1947, being 4.5 million head. In pre-war years exports were mainly to the United Kingdom in the frozen or chilled form and, during the five-year period ended 1939, Argentina supplied 17 per cent. of the United Kingdom pork market. Supplies fell off during the early war years but, after a subsequent agreement had been reached, stability was obtained once more. In 1944 a bumper corn crop led once again to favourable conditions for production and, in that year, Argentina exported fifteen times as much pork as the average figure for the five years ended 1939. Since 1945 the hog-corn price ratio has not provided the same incentive and production has decreased appreciably. The decline is expected to continue during 1948.

New Zealand.

The pig industry in New Zealand has developed in similar fashion to that in Australia as a side-line to dairying. During the war years the pig population fluctuated but had decreased from 675,802 in 1939 to 546,000 in 1947. In spite of the great reduction in pig slaughterings since 1942 production of pig meat has not decreased to a marked extent as pigs have been held to greater weights.

Canada.

War-time expansion in the pig industry was more marked in Canada than in any other country. Pig numbers increased from 4,364,000 on 1st June, 1939, to 8,148,000 on 1st June, 1943. A decrease occurred in 1944 and by 1st June, 1945, the total had been reduced to 6,026,000. Slaughterings have increased from an average of 5,165,000 for the five-year period 1935-39 to 11,422,000 in 1944. In 1945 a downward trend in pork production became apparent. Exports have increased by 300 per cent. as between the five years ended 1939-44.

United States of America.

There was no marked variation in the pig population of the United States of America during the ten years ended 1934 but in 1935 numbers had fallen to 39,000,000 head from 59,000,000 head in the previous year. Numbers then rose steadily to reach 50,000,000 in 1939 and further rapid increases occurred during the war years, the "all-time high" of 84,000,000 being reached on 1st January, 1944. Slaughterings increased during the same period, as did also the average live weight of pigs brought to slaughter. Increased production of pork after the outbreak of war was a result of an increase in the number and average weight of pigs slaughtered. The effect of both factors led to an increase of 82 per cent. in pork production in 1943. Total exports increased from a pre-war average of 142,000,000 lb. to 2,600,000,000 lb. in 1943, but fell away in the later years in proportion to the decline in production.

Denmark.

In 1931 the pig population of Denmark was 5.45 million and by 1937 it had declined to 3.07 million. It recovered slightly and stood at 3.13 million in 1939. Since the outbreak of war and the occupation by the Germans there has been a drastic reduction in pig numbers, an even more significant feature being a decline in the number of breeding sows. When the European food position becomes less critical Denmark's production should rapidly reach pre-war levels.

(d) Production Costs.

It is difficult to make any reliable assessment of production costs for pigmeat production as a sideline to the dairy industry. It is still fairly difficult to make a full assessment of production costs even in the case when pig-raising is carried on as an independent enterprise. However, as costs vary widely between districts, between seasons, and from year to year, any estimated cost of production schedules will be found to vary in a similar fashion. The following tables give a systematic analysis of production costs for baconer and porker pigs respectively.

TABLE VII.

Costs of Production of Baconer Pigs—Australia.

	Cost per sow and 14 Baconers for year.	Cost per 140 lb. Baconer.	Cost per lb. Baconer Pork.
	£ s. d.	£ s. d.	d.
Feed.—To keep sow during the year and to raise her progeny to bacon weights; 5 tons at £7 per long ton	35 0 0	2 10 0	4.28
Labour.—One man at £5 per week	8 13 4	0 12 5	1.06
Sow Depreciation.—Sow costs £6 6s. at 3 to 4 months. Feed to bring her up to breeding age makes her total cost at first mating about £9. Breeding "life" 6 litters. Value as backfatter in normal times £5, i.e., depreciation £4 over 3 years	1 6 8	0 1 11	0.16
Boar Costs.—Boar depreciates at the rate of £2 a year from his total cost at first mating. He costs £5 a year to feed with feed at £7 a long ton; annual cost £7, divided among 30 sows	0 4 8	0 0 4	0.03
Housing Depreciation.—1s. 6d. per pig per year	1 1 0	0 1 6	0.13
Commission and Yardage	4 1 4	0 5 9	0.49
Miscellaneous Costs.—Based upon the complete records of a large commercial piggery ...	4 0 0	0 5 8	0.49
Total	54 7 0	3 17 7	6.64

TABLE VIII.

Costs of Production of Porker Pigs—Australia.

	Cost per sow and 14 Porkers for a year.	Cost per 90 lb. Porker.	Cost per lb. Pork.
	£ s. d.	£ s. d.	d.
Feed.—For sow and her 14 pigs to porker weight. 3.4 tons at £7 per ton	23 16 0	1 14 0	4.53
Labour.—One man at £5 per week	6 10 0	0 9 4	1.24
Sow Depreciation.—As given in Table VIII ...	1 6 8	0 1 11	0.16
Boar Costs	0 7 0	0 0 6	0.05
Housing Depreciation	1 1 0	0 1 6	0.20
Commission and Yardage	2 15 5	0 3 11	0.53
Miscellaneous Costs	4 0 0	0 5 8	0.76
Total	39 16 1	2 16 10	7.47

Source: "The Structure of Pig Production Costs"—H. J. Geddes.

Both tables show that the costs of feed are the major items affecting the final cost per lb. of bacon and pork. In the case of bacon, feed accounts for more than 64 per cent. of the final cost of production. In these tables calculations have been based on the exclusive use of wheat as feed grain. The estimates are based on a feed mixture comprising 10 per cent. meat meal and 90 per cent. wheat, with the price of wheat at approximately 3s. 6d. per bushel and meat meal at £10 per short ton. The price of feed wheat is thus the predominant factor in the production cost structure. The following tables illustrate the effect of variations in the price of feed wheat on the cost of bacon per lb. and the cost of pork per lb., respectively:—

TABLE IX.

Price of Wheat per Bushel.	Feed Costs for 140 lb. Baconer.	Other Costs.	Total Cost for 140 lb. Baconer.	Cost of Bacon per lb.
s. d.	£ s. d.	£ s. d.	£ s. d.	d.
3 6	2 10 0	1 7 7	3 17 7	6.65
4 0	2 16 0	1 7 7	4 3 7	7.16
4 6	3 2 0	1 7 7	4 9 7	7.76
5 0	3 8 0	1 7 7	4 15 7	8.19
5 6	3 14 0	1 7 7	5 1 7	8.70
6 0	4 0 0	1 7 7	5 7 7	9.22
6 6	4 6 0	1 7 7	5 13 7	9.74

TABLE X.

Price of Wheat per Bushel.	Feed Costs for 90 lb. Porker.	Other Costs.	Total Cost for 90 lb. Porker.	Cost of Pork per lb.
s. d.	£ s. d.	£ s. d.	£ s. d.	d.
3 6	1 14 0	1 2 10	2 16 10	7.47
4 0	1 18 0	1 2 10	3 0 10	8.01
4 6	2 2 0	1 2 10	3 4 10	8.54
5 0	2 6 0	1 2 10	3 8 10	9.07
5 6	2 10 0	1 2 10	3 12 10	9.60
6 0	2 14 0	1 2 10	3 16 10	10.13
6 6	2 18 0	1 2 10	4 0 10	10.66

(e) Standards of Production.

Although a number of efforts have been made to introduce a rigid grading system for both the local trade and export, this has not been achieved to date for the local trade. In 1939 the grading of pigmeat for export was altered and brought into line with other meats by the adoption of three quality grades, namely,

(i) First Quality;
(ii) Second Quality;
(iii) Choppers.

The success of pig-testing stations in Denmark and the realisation that there was a definite lack of uniformity in Australian pigs led to the initiation of pig-testing stations in Australia. It is impossible to over-emphasise the importance of standardising the type of pig produced, particularly for the export market.

In New Zealand the recording of productive characters was developed at first on a farmer co-operative experimental basis and, later, on a State-aided national basis. A pig-club movement organised on the Scandinavian plan played an important part in providing farmers with good quality stock from 1936 onwards.

The grading of all frozen pigmeat exported is carried out under the supervision of the New Zealand Meat Producers' Board. The following quality grades are used:—

Porkers: First Grade. Prime barrows and maiden sows.

Baconers: First and Second Quality.

Grading and branding for the local trade has been operating satisfactorily in Wellington since November, 1943, under the Board of Trade (Meat Grading) Regulations, 1943. In addition, the scheme became effective over the whole of New Zealand on 1st January, 1945. Under this scheme, pork is graded into one of three specified grades, as under:—

1. First Grade.
2. Second Grade.
3. Boner Grade.

Back-fat measurements play an important part in the grading system and are taken without having to cut the pig down.

Denmark has been the chief exporter of bacon to the United Kingdom and has maintained her position largely as a result of producing a standardised product which has conformed with the requirements of United Kingdom consumers. The marked degree of uniformity in the Danish product can be almost wholly contributed to the development of scientific methods of breeding, progeny testing and culling of unsatisfactory types.

In view of the fact that any increase in the demand for Australian pigmeats can only be expected from overseas markets, chiefly the United Kingdom, the aim of Australian pig producers should be to provide the product which is demanded by the United Kingdom consumer.

CONSUMPTION.

Domestic Standards and Trends.

Consumption of bacon and ham in Australia since 1929-30 has fluctuated between 10 lb. and 12 lb. per head without showing any definite upward or downward trend. On the other hand, pork consumption rose steadily from 6 lb. per head in 1929-30 to a peak of 10.28 lb. per head in 1936-37. In 1943 consumption was still high at 9 lb. Since 1945 an increase in per capita consumption is apparent. With high levels of income and employment in the immediate future, consumption of pigmeats in Australia is expected to reach an all-time high now that rationing has been removed.

The following table shows figures of pigmeat consumption in Australia:—

TABLE XI.

Annual Pigmeat Consumption per head of Population in Australia. (a)

(lb.)

Year.	Pork.	Bacon and Ham.	Total Pigmeats (as Pork).	Total Meat.
Average 7 years ended 1920–21	4.1	10.3	19.6	(*b*)
Average 5 years ended 1925–26	5.2	11.2	22.1	(*b*)
1929–30	6.0	10.7	21.4	200.2
1930–31	6.4	10.6	22.4	188.1
1931–32	6.7	11.1	23.3	191.8
1932–33	8.0	10.2	23.3	209.2
1933–34	8.2	10.5	24.0	213.1
1934–35	9.3	10.2	24.6	217.9
1935–36	9.0	11.2	24.8	226.3
1936–37	10.3	10.4	25.3	238.3
1937–38	7.7	10.0	22.7	244.6
1938–39	7.5	10.4	23.2	234.1
Average 3 years ended 1938–39	10.4 (*c*)	10.2	25.7	244.5
1943	9.0 (*c*)	6.6	18.9	234.7
1944	7.4 (*c*)	10.2	22.7	206.6
1945	4.9 (*c*)	10.0	19.9	191.7
1946	5.9 (*c*)	12.1	23.9	191.2
1946–47 (*d*)	7.3 (*c*)	12.2	25.6	199.7

(*a*) Figures after 1938–39 represent per caput consumption by civilians only.
(*b*) Not available.
(*c*) Includes trimmings from bacon carcases.
(*d*) Includes consumption by Armed Forces in Australia; subject to revision.

MARKETING AND PRICE.

(a) Australian Market Prices.

There are marked seasonal variations in pig and pigmeat prices in Australia which are a reflection of the volume of marketing from month to month. Athough pigs do not need to follow a definite breeding schedule, the pig breeding schedule on dairy farms is so arranged that the period of growth of the pig coincides with the period of plentiful milk supply. As a result, marketings are more pronounced from November to March and the average price is deflated during these months. The report gives figures listing the average metropolitan market prices of pigs in each State, according to grades, from 1926-27 to 1939-40.

Falling prices for baconers and porkers in the late 'twenties were accompanied by a gradual increase in pig population. This downward trend was arrested in 1931-32 and prices rose slightly in 1932-33 and 1933-34, while pig numbers declined. From 1935-37 wheat prices rose and the trend in pig numbers was downward until the year 1938-39 when pig prices showed an upward trend. The consideration of price experience emphasises the marked negative correlation existing between the pig population and the price of pigs.

(b) Price Spread from Producer to Consumer.

The following figures, prepared by the Division of Marketing, New South Wales Department of Agriculture, show the average "spread" between the return to the producer and the price paid by the consumer for pork. They were prepared in January, 1941, for a Marketing and Distribution Conference held in Sydney in March the same year.

	£	s.	d.	s.	d.	
Total Cost to Consumer ...	3	7	3	14	7	Retail Butcher's Expenses and Profits.
Cost to Retail Butcher ...	2	12	8			
Cost to Wholesale Butcher...	2	7	3	5	5	Wholesale Butcher's Expenses and Profits.
Net Realisation by Farmer...	2	3	2	4	1	Farmer's Marketing Costs.

The figures are based on a porker of good quality, weighing 70 lb. dressed weight.

(c) Overseas Market Prices.

The bulk of Australia's exportable surplus of pigmeats finds its way to the United Kingdom market in the form of frozen pork or bacon and ham, and price fluctuations on that market are of major importance to the Australian producer and exporter. Prices of pigmeats, as with meat in general, declined after 1930. From 1932 until the outbreak of war there was a general improvement in the prices of pork and bacon and ham.

United Kingdom-Australia Meat Agreement.

Under the United Kingdom-Australia Agreement, the Government of the United Kingdom agreed to buy the total quantity of pigmeat made available by Australia during the period commencing 1st October, 1944, and ending on 30th September, 1946. Negotiations for the provision of the introduction of further quantities up to 30th September, 1948, were arranged.

The current schedule of prices contained in the agreement in relation to pigmeats is recorded in the following table, in which prices are F.O.B. in pence per lb. sterling, in London:—

TABLE XII.

Porker and Porker Cuts.	First Quality.	Second Quality.
	d.	d.
Carcases 60/120 lb.	$8\frac{5}{16}$	$7\frac{15}{16}$
Full sides 30/60 lb.	$8\frac{5}{16}$	$7\frac{15}{16}$
Headless sides 25/55 lb.	$9\frac{5}{16}$	$8\frac{15}{16}$
Choppers 180 lb. and over	$5\frac{1}{2}$	...
Headless chopper sides 86 lb. and over	$5\frac{1}{2}$	...
Legs long cut	$12\frac{13}{16}$	$12\frac{9}{16}$
Legs ham trimmed	14	$13\frac{3}{4}$

Bacon and Baconer Cuts.	First Quality.		Second Quality.	
	Scalded.	Singed.	Scalded.	Singed.
	d.	d.	d.	d.
Carcases 121/200 lb. ...	$8\frac{5}{16}$	$8\frac{3}{8}$	$7\frac{5}{16}$	8
Headless carcases 111/190 lb.	$9\frac{5}{16}$	$9\frac{3}{8}$	$8\frac{15}{16}$	9
Headless sides 56/95 lb. ...	$9\frac{5}{16}$	$9\frac{3}{8}$	$8\frac{15}{16}$	9
Wiltshire sides 50/90 lb. ...	10	$10\frac{1}{16}$	$9\frac{5}{8}$	$9\frac{11}{16}$

It has been recently announced that the agreement has been extended until 30th September, 1950.

United Kingdom-New Zealand Agreement.

Under the Meat Agreement with New Zealand, the United Kingdom agreed to purchase the total available supplies of that Dominion in the first two years of the Agreement and the quantities to be purchased in the third and fourth years were to be the subject of a joint discussion. The Agreement was subsequently extended to September, 1950.

United Kingdom-Canada Meat Agreement.

The Anglo-Canadian contract which was to have terminated in 1947, has been recently extended to cover the years 1948 and 1949. Prices under the Agreement operate for calendar years and the 1948 price for Grade I, Wiltshire sides at seaboard is £9 per cwt., compared with £7 5s. per cwt. under the 1947 contract. Canada is to supply 195,000,000 lb. of bacon during 1948, compared with a 1947 target of 350,000,000 lb. and actual deliveries of 250,000,000 lb.

The following table gives quantities of exports of bacon and ham from the chief exporting countries:—

TABLE XIII.

Exports of Bacon and Ham from the Chief Exporting Countries.

Countries.	1929.	1930	1931.	1932.	1933.	1934.	1935.	1936.	1937.	1938.
Canada	28·8	14·8	12·8	35·8	73·2	120·4	125·3	158·0	195·7	173·6
Eire	55·6	38·6	34·8	24·4	26·0	45·0	56·1	60·6	59·6	63·3
Australia	1·3	2·1	1·5	1·6	1·7	1·6	1·7	1·8	1·7	1·8
New Zealand	0·3	0·2	0·1	0·1	0·1	0·1	0·1	0·1	0·1	0·1
Denmark	546·2	674·6	819·9	846·2	631·5	483·5	434·3	384·4	392·9	389·8
U.S.A.	275·1	216·9	123·3	84·2	100·1	83·8	61·7	46·7	42·9	62·8
Netherlands	104·9	96·3	111·6	109·9	101·9	68·2	57·9	55·4	55·6	63·7
Sweden	42·7	61·4	64·3	47·0	45·1	37·1	28·6	27·9	29·1	29·1
Poland	30·5	61·4	134·4	135·3	97·6	55·0	47·0	43·3	47·3	48·2
U.S.S.R.	28·4	6·0	7·1	7·1	4·8	5·9	4·8	5·8	4·9	...
Latvia	1·8	3·9	3·9	2·1	5·2	4·9	3·9	4·3	4·3	4·3
Estonia	7·1	2·6	6·8	8·6	7·3	5·8	5·4	4·9	4·7	4·9
Lithuania	0·7	9·1	40·0	55·6	47·2	27·9	19·5	23·6	22·5	23·5
Finland	...	0·6	3·5	7·1	5·7	2·8	2·7	2·6	2·5	2·6
China	2·1	2·1	1·7	1·7	1·6	1·2	1·3	1·1	1·5	1·5
Norway	(a)	(a)	...	...	3·0	2·8	2·2	1·3	1·3	...
Belgium	(a)	(a)	3·1	1·6	1·6	2·7	2·5	2·5	3·2	1·3
Argentina	(a)	(a)	8·0	10·1	13·1	11·6	11·9	16·6	24·3	17·2
Five other countries (b) ...	(a)	(a)	0·4	0·2	0·7	5·3	9·0	5·3	5·3	9·7
Total	1,122·5	1,190·7	1,374·0	1,372·4	1,167·3	965·7	876·0	846·3	899·2	897·5

Source: Imperial Economic Committee Reports.

(a) Not available.

(b) Rumania, Hungary, Bulgaria, Yugoslavia and Switzerland.

(d) Marketing Organisation and Regulation.

The marketing of pigs in Australia is usually carried on in conjunction with that of other livestock at metropolitan and country marketing centres. In country markets the chief buyers are representatives of export firms who receive a certain amount of competition from local butchers. In addition, local farmers compete for stores and weaners which are re-marketed at a later date as fat stock. In the metropolitan markets, exporters, bacon curers and wholesale butchers operate. Farmers having pigs for sale can dispose of them in one of three main ways:—

(i) Selling at a livestock auction through an agent;
(ii) selling direct to an exporter or bacon curer;
(iii) if he has sufficient pigs of similar quality, have them slaughtered and forwarded on consignment to the United Kingdom.

In each State of the Commonwealth there are central metropolitan abattoirs which are operated as public utilities and at which wholesalers can have their pigs killed at a fixed char There were ninety-two bacon factories in Australia at the beginning of 1943, eighty-eight of which were operating.

During the three years, 1937-38, to 1939-40, the number of pigs slaughtered in Australia remained fairly constant at approximately 1,900,000 per annum. Rising costs of production, depressed prices and uncertainty in regard to future markets faced the pig industry during the year ended June, 1942, and as a result there was a tendency for producers to kill off breeding stock and leave the industry. Exports declined markedly in 1941-42 when the United Kingdom refused to continue to take baconer type carcases. Towards the end of 1942 this position was reversed, and it was evident that there would be very heavy demands in the future on Australian meat production. The Commonwealth Government then gave consideration to the question of introducing a pigmeat plan which would ensure to the producer a satisfactory return over a period of time. The plan provided for the acquisition by the Commonwealth Government of pig carcases weighing more than 100 lb. chilled weight on hooks from operators who had been issued with a slaughtering license under the National Security (Meat Industry Control) Regulations. Compensation was paid to licensees in accordance with certain values which were specified. The values were based on the price of 9d. per lb. for first quality. Certain modifications were made to the plan with regard to the minimum weight of porkers for export, dressed, chilled weight, etc.

One effect of the Pigmeat Plan has been to change the composition of pigmeat production from a predominance of porkers to a predominance of baconers. It is considered that the change to baconer type pigs has been in the best interests of the pig industry for the following reasons:—

(*a*) A good baconer pig can be carried on to bacon weights or be used to produce excellent pork if killed at porker weights;

(*b*) the post-war export requirement is likely to be for pigs of baconer rather than porker types, and it is likely that for some years there will be an outlet for baconers in excess of local requirements. Porkers, however, will be required for the local market;

(*c*) the baconer pig is cheaper per lb. to rear. Good baconers may put on 1½-2 lb. per day with no extra overhead, little extra labour and low feed cost per lb.

Reports from the United Kingdom indicate that the Australian baconer is preferred to the Canadian or United States product. The bacon market in the United Kingdom is highly organised.

Australian Meat Board.

The Australian Meat Board was appointed under the Meat Export Control Act, 1935-38, and consisted of eighteen members representing stock producers, meat exporting companies, co-operative organisations exporting mutton and lamb, public-owned abattoirs and freezing works, and the Commonwealth Government. The Board was given power to control and regulate the Australian export trade in meat and to make recommendations with regard to standards and grading of meat for export, to arrange contracts for shipping and insurance, and to encourage experiments and investigations tending to advance the meat export industry.

The Board was financed by levies received under the Meat Export Charges Act, 1935, and could recommend that any meat be exempt from this levy. The levy on pigmeats were as follows:—

Pork.—Carcases, 1d. each; pieces, 1d. per 100 lb. or portion thereof.

Bacon and Hams.—1d. per 100 lb. or portion thereof.

Under the Meat Export Control Act (section 17), the Board had power to issue export licenses and regulations were drawn up under this power and operated from 1st July, 1936.

In August, 1946, two new Acts were passed amending the previous legislation concerned with the constitution and powers of the Australian Meat Board. The first Act provided for the transfer of power, authorities and functions conferred upon and exercised by the Commonwealth Controller of Meat Supplies and the Meat Canning Committee, to the Australian Meat Board during the continuance of the National Security Act and the regulations thereunder.

The second Act reconstituted and extended the powers and functions granted to the Australian Meat Board under the original Act.

The reconstituted Australian Meat Board has now taken over the powers and functions of Meat Control and of the former Australian Meat Board.

In October, 1942, under the National Security (Australian Meat Industry Commission) Regulations, an authority called the Australian Meat Industry Commission was constituted. Subsequent to its first meeting, the Minister for Commerce and Agriculture, upon the recommendation of the Commission, appointed State Meat Advisory Committees. However, the regulations were disallowed in the Senate, and in March, 1943, under the National Security (Meat Industry Control) Regulations, a Controller of Meat Supplies was appointed.

A Meat Industry Advisory Committee was appointed in July, 1943, under Regulation 9 of the National Security (Meat Industry Control) Regulations. This was a committee of producers, departmental officers, meat exporters and meatworks representatives. The chairman of the committee was the Commonwealth Controller of Meat Supplies, whom the committee advised on all phases of the meat industry. State Meat Advisory Committees were also appointed.

FUTURE PROSPECTS FOR THE PIG INDUSTRY.

(a) Current Developments.

In previous sections of the report, reference has been made to the initial development of the industry as a side-line to the dairy industry. Moreover, it was stated that, with low wheat prices in the 'thirties, pig raising in association with wheat production increased in popularity. Within recent years, grain sorghum has tended to replace wheat to a certain extent in northern areas, the protein supplements in each case being mainly in the form of meat meal.

It seems apparent that in the future the industry will become even more dependent upon grain as the basic feed, as a result of an ever-increasing tendency in some States to market wholemilk rather than to separate on the farm. The recent extension of milk zones has undoubtedly contributed in a small degree to the decline in pigmeat production, but a far more significant feature is the rapid expansion in the production of wholemilk products.

Since 1938-39 the actual percentage of milk used for butter production has decreased from 78 per cent. to 63 per cent. in 1946-47, and at the same time there has been an absolute reduction in the quantity utilised, from 925,000,000 gallons to 671,000,000 gallons. In other districts producers are encouraged to deliver wholemilk to butter factories where separation is carried out, the skim milk being either processed or fed to pigs at a central location.

When the price of wheat increased during the war years, it was released to pig producers at a low subsidised rate. Even after the subsidy was removed, producers were still able to obtain supplies of wheat at the home consumption price, which was appreciably below export parity. This procedure is still adopted, but the home consumption price for wheat has been raised to 6s. 3d. bulk, f.o.r. ports, which is equivalent to 5s. 5d. per bushel bulk at sidings. Moreover, it has also been announced that the local price will be adjusted in accordance with changes in production costs if this proves practicable.

In view of the probability of higher than pre-war wheat prices, and the existing relatively unlimited potential for the expansion of grain sorghum in northern areas, a further trend towards the use of grain sorghum as a basic pig feed can reasonably be expected. This should, in turn, lead to a geographic redistribution of pig producing districts. There will be a tendency for pig-raising to be concentrated in northern New South Wales and southern Queensland where grain sorghum can be produced most economically.

(b) Production.

During the last fifty years, the pig population of Australia has varied cyclically, the period of the cycle being of approximately five years' duration. Until 1920, the average pig population during the cycle had remained at a fairly constant level, but after this year the average showed a definite upward trend. At the outbreak of World War II, pig numbers had commenced to increase from a "low" in 1937 and this increase was accelerated during the early war years, a peak of 1,797,300 head being reached in March, 1940.

The number of pigs slaughtered annually increased up to 1936-37, reaching a level of approximately 2,000,000 head, but decreased during the next two years. Slaughterings increased again after the outbreak of war and reached 2,593,900 head in 1941-42. By 1943-44, however, they had again fallen to the 1938-39 level, and although there was a slight recovery in 1944-45, the decline has since continued.

Production of pork increased by 110 per cent. in the last ten pre-war years from 39,000,000 lb. in 1929-30 to 83,000,000 lb. in 1938-39, and the increase was continued during the war years, a peak of 130,000,000 lb. being produced in 1941-42. Production of bacon and ham increased by 6 per cent. during the last ten pre-war years, from 70,000,000 lb. in 1929-30 to 74,000,000 lb. in 1938-39, a greater increase occurring during the war years and a peak of 126,000,000 lb. being reached in 1944-45.

The following factors and the interaction of these factors will be the chief determinants of the future level of pigmeat production in Australia:—

(*a*) the future price for pigmeats, which is in turn dependent upon the availability of avenues of disposal;

(*b*) the availability and future price of feedstuffs;

(*c*) the standard of quality maintained, in so far as it affects the development of additional markets and the price return to the producer;

(*d*) any improvement in the technique of management which would affect production costs.

When bacon and ham is reduced to a pork equivalent for each year, it has been seen that the total production of pigmeats increased from 144.6 million lb. in 1929-30 to 194.6 million lb. in 1938-39.

In spite of the fact that pig numbers and pigmeat production must necessarily suffer a set back while the present stock feed shortage exists, it should be remembered that many pig producers have increased their capital outlay in expanding production during the war years. A large proportion of their money has been invested in improvements to and extension of piggeries and in the purchase of additional equipment. When such producers are forced to reduce their turnover, they still have to meet certain of these fixed costs, and so their costs of production per lb. of pigmeat are increased. It therefore seems reasonable to assume that, as soon as cereals become more plentiful, these producers will once again tend to increase production and so spread their fixed costs to a greater degree.

The average annual figure for total pigmeat production during the war years was 256,000,000 lb., and it could be argued that production would return to this level once the feed shortage was overcome. However, it is necessary to remember the prohibition on the slaughter of lightweight pigs and it would seem that the present level of total pigmeat production could be taken at 230,000,000 lb., which approximates the 1946-47 level.

(c) Consumption.

Consumption of pork in Australia has increased from an average of 4.11 lb. per head for the seven years ended 1920-21 to an average of 8.76 lb. per head for the five years ended 1938-39. Over the last ten pre-war years, consumption per head rose steadily from 6.00 lb. in 1929-30 to a peak of 10.28 lb. in 1936-37 and then fell away to 7.55 lb. in 1938-39. The downward trend continued during the first two war years, then tended to recover with a general increase in the spending power of the community.

By 1956 an increase over the pre-war average consumption figure is visualised for pork. The average per capita consumption figure for pork during the five years ended 1938-39 was 8.75 lb. Therefore, the estimated per capita consumption of pork in 1956 will be approximately 11 lb. It is expected that the population of Australia may reach 8,500,000 by 1956. Therefore, applying the estimated 1956 per capita consumption figures to this population estimate, the following results are obtained for total consumption in that year:—

Total consumption of pork in 1956—93.5 million lb.

Total consumption of bacon and ham in 1956—89.25 million lb.

Because of the price factor pigmeats are regarded as a luxury rather than as a basic food in Australia. Therefore, treating the above estimates as conservative and converting them to pork equivalents, 227,000,000 lb. can be treated as a conservative estimate of 1956 consumption.

(d) Export Trade.

Although the pig population of the United Kingdom in June, 1947, was 1.6 million compared with 4.4 million in June, 1939, the rapidity with which pig numbers can be increased under favourable feed and market conditions must be remembered.

Australia's interest in the United Kingdom pigmeat market is primarily limited to the supply of frozen uncured baconer carcases for subsequent curing in United Kingdom bacon factories. In this regard the following factors will determine the extent of our future market in the United Kingdom:—

(1) the estimated future consumption of pigmeats in the United Kingdom;

(2) the extent to which the demand for bacon is met by imports of bacon, as this will determine the demand for home-cured bacon;

(3) the extent to which United Kingdom producers can fulfil the demand for baconer carcases for curing in United Kingdom factories;

(4) the relative competitive position of Australia, Argentina, and New Zealand in so far as it affects Australia's share of the demand for imported frozen baconer carcases.

With high levels of income and employment, the total United Kingdom demand for pigmeats is expected to be appreciably above the pre-war level. More than half the United Kingdom's requirements of bacon and ham were supplied by Denmark and the Netherlands prior to the war. However, with the grain shortage in Europe and high cost production in both countries, it is not anticipated that they will be able to take up their pre-war position for a number of years. In addition, Denmark seems anxious to spread her markets as much as possible and to this end has negotiated a trade agreement with the U.S.S.R.

Canada was the second largest supplier of bacon and ham to the United Kingdom in pre-war years and in 1945 had more than doubled her pre-war exports to this market. Canada could undoubtedly continue to supply a major section of the United Kingdom market in the future if a favourable relation between feed and bacon prices is maintained. However, it appears that the United States of America may offer a more attractive market, both geographically and financially. Pig numbers and pigmeat production have decreased in the United States since 1944, and production in 1948 will not be greatly in excess of the pre-war average. A continuation of this trend coupled with the steady upward trend in human population could lead the United States to the position of a pigmeat deficit nation. This will be largely determined by the future trend in the hog-corn price ratio, but in any event it appears that future United Kingdom imports from Canada will be lower than pre-war.

On balance, it seems reasonable to assume that at least no marked increase in United Kingdom imports of the cured product will occur in the post-war era. This conclusion is substantiated by the United Kingdom's desire to balance her overseas payments, and the curing of imported pork in the United Kingdom rather than importing bacon should further this aim. It can, therefore, be concluded that, with decreased imports of cured pigmeats and an increased consumption demand arising from high levels of income and employment, there will be a greater demand for baconer carcases for curing in the United Kingdom. The future potential of United Kingdom domestic production is therefore of prime importance.

On the whole it seems that the United Kingdom will in future continue to import greater quantities of frozen baconer carcases than in the pre-war period.

The future competitive position of the major exporters of frozen pigmeats must, therefore, be assessed. Prior to the war, Australia's main competitors on the United Kingdom frozen pork market were New Zealand and Argentina. Supplies from Australia and New Zealand have been drastically reduced since the outbreak of war, although this has only been apparent in 1947 in the case of Australia. In 1947 New Zealand exported only one-third of her pre-war annual average exports to the United Kingdom, and in an endeavour to reverse the downward trend in exports, increased the price of pork for export by ½d. per lb. on 1st January, 1948.

Argentina achieved a most significant expansion in pigmeat production during the war years, but since the cessation of hostilities has shown a tendency to drop out of the export markets. In 1947, only 550,000 pigs were slaughtered at registered works, compared with over 2,000,000 in each of the years 1943-45. A reduction of this order could in itself be taken as an indication of a determined attempt to build up pig numbers. This may be the case but, in June, 1947, statistics place Argentina's pig population at 4.5 million head, compared with 8.8 million head in June, 1944, and 4.0 million head in 1937. The marked decline in pig population is attributed to rising feed costs, and no marked increase is expected while present high grain prices continue.

Pigmeat production in Australia has fallen off rapidly during the last two years, and, as in the other chief exporting countries, is associated with the general shortage of feed and materials and an insufficient price margin for the finished product. The United Kingdom's apparent interest in Australia as a future long-term source of supply of pigmeats may well remove certain factors which are at present limiting production.

In the long run, it is considered that the United Kingdom market for frozen baconer carcases will be greater than in pre-war years. Competition can be expected, in the short run, to be mainly confined to Australia and New Zealand. However, once the short-term grain shortage is overcome, it is anticipated that pig numbers will be built up rapidly in other producing countries and that competition for the expanded United Kingdom market will be keen. Increased production in Australia cannot be economically provided by high cost producers who would suffer on a return to free market conditions. In addition, in order that Australia may take full advantage of the United Kingdom market, it is essential that more attention be paid to the uniformity of export carcases. Carcase competitions which have been recently resumed by the Australian Meat Board should be a useful guide to producers in this direction.

Approaching the problem from a conservative angle, it could be assumed that, in view of the marked expansion in production in other pigmeat exporting countries, the suggested improvements in quality would be necessary to enable Australia to maintain her pre-war level of pork exports to the United Kingdom during the next ten years. Using this approach, it could be assumed that Australian exports of pork to the United Kingdom in 1956 would be at the pre-war level of 30,000,000 lb.

Using a more liberal approach, it would be reasonable to assume that there would be the same absolute increase in pork exports to the United Kingdom during the next ten years as there was during the last ten pre-war years. During the seven years ended 1938-39, pork exports to the United Kingdom increased from 6,000,000 lb. to 30,000,000 lb., that is by 24,000,000 lb. If a corresponding absolute increase is maintained over the next ten years, 54,000,000 lb. of pork would be exported to the United Kingdom in 1956. It should be remembered that this figure was exceeded in 1940-41, when Australia was able to export 73,000,000 lb. of pork to the United Kingdom alone. The bulk of any additional exports would have to be in the form of frozen baconer carcases for curing in the United Kingdom.

In pre-war years, exports of bacon and ham to the United Kingdom were negligible, although there was an upward trend to 270,000 lb. in 1938-39. It does not appear that there is much hope of expanding this market in competition with countries such as Denmark which, in view of its proximity to the United Kingdom market, can deliver the mild-cure bacon which consumers demand. In view of this, it is considered that there will be only a negligible market for bacon and ham in the United Kingdom by 1956, and that Australia should concentrate solely on supplying baconer carcases in the frozen form for this market.

For the reasons stated, it is conservatively estimated that 30,000,000 lb. of pigmeats (pork equivalent), will be exported to the United Kingdom in 1956. The more liberal approach which may at a later date prove to be justified, allows for the marketing of 54,000,000 lb. by 1956.

As far as miscellaneous markets are concerned, it is estimated that exports of pigmeats to ports other than the United Kingdom will have reached approximately 3,000,000 lb. (pork equivalent) by 1956.

(e) Limits of Expansion.

Total pigmeat as pork equivalent:

The present level of production of all pigmeat, expressed as a pork equivalent, has been taken as 230,000,000 lb., which approximates to the 1946-47 level of production.

It is estimated that in 1956, approximately 284,000,000 lb. of pigmeats will be disposed of in all markets. This figure allows for the disposal of 227,000,000 lb. on the Australian market, the more liberal estimate of 54,000,000 lb. on the United Kingdom market and the remaining 3,000,000 lb. on miscellaneous Eastern and Pacific markets.

The effect of these estimates is recorded in the following table, which should serve to clarify the relation between anticipated disposals in 1956 and the present level of production in Australia:—

	Million lb.
Present production	230
Anticipated disposals 1956—	
1. Home market	227
2. United Kingdom market	54
3. Miscellaneous markets	3
Total Disposals	284
Excess of anticipated disposals over present production	54
	Per cent.
Scope for expansion in production over next ten years	23

Accordingly, it is considered that an over-all expansion of 54,000,000 lb. or 23 per cent. of the 1946-47 level of production would be justified if this increase is spread over the next ten years. This expansion is for total pigmeats expressed as a pork equivalent, and is further analysed into pork and bacon and ham in the two subsequent sections.

Using the conservative approach, the following table is obtained:—

	Million lb.
Present production	230
Anticipated disposals 1956—	
1. Home market	227
2. United Kingdom market	30
3. Miscellaneous markets	3
Total Disposals	260
	Million lb.
Excess of anticipated disposals over present production	30
	Per cent.
Scope for expansion in production over next ten years	13

In these circumstances, an over-all expansion of only 13 per cent., or 30,000,000 million lb., seems justified. In this case, the expansion would be to meet an increased demand in the home market, and the expansion would chiefly involve the production of additional porkers.

Pork.

The present level of production of pork has been taken as 80,000,000 lb., which is approximately the 1946-47 figure.

It is estimated that total disposal of pork in 1956 will amount to 148,000,000 lb. This total will depend on the consumption of 93.5 million lb. in Australia, the export of 54,000,000 lb. to United Kingdom, and the export of 0.6 million lb. to Eastern and Pacific markets. This information is set out below in table form:—

	Million lb.
Present production	70
Anticipated disposals 1956—	
1. Home market	93.5
2. United Kingdom market	54
3. Miscellaneous markets	0.6
Total Disposals	148.1
Excess of anticipated disposals over present production	78
	Per cent.
Scope for expansion in production over next ten years	111

From this table it will be seen that, on the assumptions made, it is expected that Australia will be able to increase production of pork by approximately 78,000,000 lb., or 111 per cent. of the 1946-47 production figure. As this degree of expansion is dependent on increased exports of frozen pork to the United Kingdom and increased consumption in Australia, the emphasis in the future must be on baconer carcases of the type and weight demanded by the United Kingdom consumer, and porker carcases for the Australian market.

When the more conservative estimate of 30,000,000 lb. is taken as the level of exports to the United Kingdom in 1956, the following picture is obtained:—

	Million lb.
Present production	70
Anticipated disposals 1956—	
1. Home market	93.5
2. United Kingdom market	30.0
3. Miscellaneous markets	0.6
Total disposals	124.1
Excess of anticipated disposals over present production	54
	Per cent.
Scope for expansion in production over next ten years	77

Thus, using the conservative estimate for exports to the United Kingdom, an expansion in production of 54,000,000 lb., or 77 per cent., would be in order. In this case, the expansion would be entirely in porkers for the local market.

Bacon and Ham.

The present level of production for bacon and ham has been taken as 105,000,000 lb., which is approximately the 1946-47 figure.

A figure of 90.75 million lb. has been calculated as a reasonable estimate for total disposals of bacon and ham in 1956. This figure is based on the assumptions that 89.25 million lb. will be required to fulfil the demand in Australia and that it will be possible to dispose of 1.5 million lb. in Eastern markets. It is considered that the United Kingdom will provide a negligible market for Australian bacon and ham in ten years' time. The following table summarises these estimates:—

	Million lb.
Present production	105
Anticipated disposals—	
1. Home market	89.25
3. Miscellaneous markets	1.5
Total Disposals	90.75
Excess of present production over anticipated disposals	14.25
	Per cent.
Indicated reduction of production over next ten years	13

On the basis of past experience and estimates of future requirements, it is considered that, if the present level of production of bacon and ham is maintained during the next ten years, it will exceed the level of anticipated disposals in 1956 by approximately 14,250,000 lb., or 13 per cent. It should be remembered, however, that during the war years there has been an over-all increase in average carcase weight. This trend is certain to be reversed during the next few years and in this case production would tend to decline towards the pre-war average.

Finally, it is considered that, as a result of analysis of the information available, there is no scope for expansion in bacon and ham production. It may even prove necessary to divert a certain percentage of bacon carcases from Australian curers into the export trade as frozen baconer carcases for the United Kingdom.

(f) Conclusions.

Admittedly, in the short run, the market outlook for Australian pigmeat production is most favourable, owing to the world-wide shortage of meat and food generally. However, once supplies of stock feed become more readily available, pig numbers can be increased rapidly, with the result that the long-term outlook is rather uncertain and requires further clarification. For example, United Kingdom pigmeat production is expected to recover to the pre-war level by about 1952, and some expansion above that level is contemplated after this date.

In previous sections of the report, it has been indicated that any long-term expansion in Australian pigmeat production will be dependent upon a progressive increase in the home market, due to an increased population and an increased taste for pork, and in the United Kingdom market as a result of the continuation of the pre-war trend in exports of frozen baconer carcases.

It is considered that some long-term expansion in the United Kingdom market for Australian baconer carcases can be expected, but that the market for Australian bacon is still expected to be negligible. Expansion in the market for frozen baconer carcases is based on:—

(*a*) increased per capita consumption;

(*b*) higher levels of employment and income in the United Kingdom;

(*c*) no marked increase in United Kingdom imports of cured bacon;

(*d*) present United Kingdom financial difficulties should encourage curing of bacon carcases in preference to the import of the cured product;

(*e*) the interest of the Overseas Food Corporation in Australia's exportable surplus;

(*f*) reduced pigmeat exports from Argentina and her apparent interest in other markets.

The development of an expanded market by Australia in the United Kingdom may be retarded by such factors as:—

(*a*) inability to maintain full employment levels;

(*b*) an improvement in the ratio of returns to feed costs in main producing countries, leading to a rapid expansion in production;

(*c*) limited curing facilities in the United Kingdom.

In view of the rapidity with which expansion of pigmeat production can be achieved and the proportions which can be reached, the prospect of a significant increase in the United Kingdom long-term market for pigmeats must be viewed with a certain degree of caution.

Any increase in the consumption of pigmeat in Australia will be largely the result of increases in the Australian population. However, a reduction in the price of pigmeats relatively to other meats, which could result from more efficient methods of feeding or from an improvement in the technique of management, could lead to an at present unforeseen increase in per capita consumption.

The degree to which production of pigmeats does increase will depend on such factors as the future price of pigmeat, the price of cereals in so far as it affects the availability of supplementary feed, the number of dairy cows, and the continuation of inter-governmental trading schemes, in addition to the factors already mentioned. The pig population of Australia can be expected to continue to vary in cyclical fashion with a steady periodicity, and to follow the general upward trend which was in evidence in the inter-war period.

However, one of the main problems facing the pigmeat industry at present is that of stability. In the short run it would appear that attenion will need to be concentrated on stability of production rather than on the development of new markets. While the present shortage of grain feeds continues, there will be a tendency for production to decrease, but it should recover rapidly once this problem is overcome.

Although a clarification of the international situation may cause the present outlook for international trade to be modified, it is considered that, on the basis of present knowledge, the degree of expansion of pigmeat production should be based on the conservative estimate given in the preceding sections. On this basis it is estimated that the following expansion could be disposed of by 1956.

1. Total pigmeats (expressed as a pork equivalent).
   30,000,000 lb., or 13 per cent. increase on the 1946-47 production level.
2. Pork (carcase weight).
   54,000,000 lb. or 7 per cent. increase on the 1946-47 production level.
3. Bacon and ham (cured weight).
   A decrease of 14,000,000 lb., or 13 per cent. on the 1946-47 production level.

With a return to normal trading conditions and the lifting of the ban on the slaughter of lightweight pigs for home consumption as pork, it can be expected that a certain percentage of pigs which were formerly carried on to baconer weights will be marketed as porkers for the local trade. In addition, it is also to be expected that the average weight of baconer carcases will decrease, so that the anticipated surplus production of bacon and ham should be automatically adjusted. This, however, would result in an additional production of pork, so that the estimate of 54,000,000 lb. would have to be reduced. The figure quoted for justifiable expansion in total pigmeat production expressed as a pork equivalent would then serve as a more accurate measure of the scope for expansion in pork production.

In conclusion, it is considered that there should be no long-term expansion of bacon and ham production above the 1946-47 production level, but that there is room for an increase in pork production conservatively estimated at 30,000,000 lb. Clarification of the following factors, which are at present incapable of assessment in quantitative terms, could well lead to an upward revision of this estimate:—

(1) the duration of inter-governmental trading agreement which may in the future be regarded as a restriction to free multilateral trade and so conflict with the provisions of the International Trade Organisation Charter, except in special circumstances;

(2) the future of Imperial Preference which, in its present form and with a return to competitive trading, would guarantee Empire producers a definite share in the United Kingdom market;

(3) future levels of income and employment in so far as they affect the level of consumption;

(4) the United Kingdom's ability to adjust her balance of payments difficulties, particularly in respect of "hard" currencies;

(5) the relative competitive position, including export potential and cost structure, of Australia and other chief exporting countries in a free market.

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