

# Farmers and consumers under strain: allied meat supplies in the First World War

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## *Abstract*

The allies faced growing shortages of meat between 1914 and 1918. Consumers in Britain and overseas were affected by the decision to divert increasing amounts to feed the British, French and even the Italian army. Overseas producers in America, Australia, and New Zealand found there were limits to the extent to which they could benefit from the increased demand in Europe. Refrigerated shipping space was in short supply and was firmly controlled by the British government. This meant Argentine and Commonwealth farmers faced financial losses during the periods when they were unable to sell finished animals. Attempts by all allied governments to impose controls on their internal markets to ensure the fair distribution of meat supplies did not always work out in the ways they expected, and caused further complaints from consumers and farmers.

One well known effect of the outbreak of war in Europe in August 1914 was to place food supplies under pressure. The mobilization of troops and expansion of armies meant increased numbers of soldiers to be fed, while the recruitment and conscription of agricultural workers reduced the numbers actually producing food. This applied to all types of foodstuffs, and although the British and German governments had made some plans for foodstuffs in time of war, they immediately introduced regulations and controls to protect supplies of items that were regarded as essential. The most important of these were cereals, and governments were rightly obsessed about maintaining home production as well as protecting imported supplies. It soon became apparent that meat supplies were also under threat and in need of as much attention as cereals to maintain civilian and military consumption at acceptable levels.

The initial strategic food plans of the main combatants had eventually to be drastically modified because of the length of the war. In each case adjustment was made with varying degrees of success, as the conflict reduced the effective control they had over events, both at home and overseas. This paper examines how Britain, with the assistance of its allies, did this and, in particular, the effects of the war upon its overall meat supplies and the farmers involved in its production. It might be thought that because all were engaged in the objective of maintaining the overall level of allied supplies, policy in each of the supplying countries would be broadly similar. However, it will be shown that as the war did not have uniform effects, it elicited differing responses and they were attended with varying amounts of strain and success.

Both France and Britain had made hardly any serious preparations for maintaining food supplies in the event of a long war.<sup>1</sup> Both nations had planned for a very short war and mistakenly believed that stocks held by the military, together with some requisitioning of supplies, would be sufficient to carry them through. When a protracted war developed, French agriculture proved particularly ill equipped to respond to either the immediate or the long-term shock of the conflict.<sup>2</sup> Before the war Britain, as an import economy, relied far more heavily on imported foodstuffs and industrial raw materials than the rest of Europe, and paid for them by its exports of industrial goods and earnings from international trade and financial services. In any conflict the Royal Navy would preserve its access to overseas markets and earnings, and so ensuring food supplies whilst the French and Russian armies defeated Germany.<sup>3</sup> This grand strategy of 'business as usual' was tested when France and Russia proved too weak to overcome Germany, and Britain became involved in financing as well as fighting the expensive land war in Europe.<sup>4</sup> Events proved that in maintaining meat consumption, as well as that of all other foods, the British government was in a stronger position. But even she came under increasing strain from the pressures placed upon her by the intrinsically weak position of the allies in Europe and the poor state of their agriculture. The war also placed Britain's overseas meat suppliers under strain as well, and at times threatened the ability of South American and Commonwealth farmers to provide the imports upon which not only Britain, but a large part of Western Europe too, came to depend by the end of 1918.

## I

While the wartime food situation has quite rightly been seen mainly in terms of cereal supplies, there has been no comprehensive attempt to look closely at the question of allied meat supplies.<sup>5</sup> This is rather surprising as animal protein was regarded at the time as an important component of the diet and shortages of meat and fats were felt acutely in Germany as its dietary situation became increasingly difficult after 1916.<sup>6</sup> Dewey's 1980 study of British livestock and cereal output does not go into the details of maintaining imports, although he does point out that meat imports were lower in 1916 and 1917 than in 1914.<sup>7</sup> This was from the immense pressure placed on meat, and all other British food supplies after 1916 by Germany's Atlantic U-boat campaign. British and allied shipping losses from surface raiders were comparatively light, but

<sup>1</sup> BPP, 1905, LXXIX, *Report of the Royal Commission on supply of food and raw materials in time of war*; Michel Augé-Laribé and Pierre Pinot, *Agriculture and food supply in France during the war* (1927); David French, *British economic and strategic planning, 1905–1915* (1982); Peter Dewey, *British agriculture in the First World War* (1989); Avner Offer, *The First World War: an agrarian interpretation* (1989).

<sup>2</sup> A. W. Pearse, *The world's meat future* (1920), pp. 2–3; Augé-Laribé and Pinot, *Agriculture and food supply*, pp. 71–5, 96–7, 194–6.

<sup>3</sup> Offer, *First World War*, ch. 6.

<sup>4</sup> French, *British economic and strategic planning*.

<sup>5</sup> None of the works quoted in this study fail to mention meat, but before 1914 it was the largest single source of calories after cereals. Figures in Dewey, *British agriculture*, p. 16 show that in 1909–13 cereals provided 34.4 per cent of British calorie consumption, meat 19.4 per cent, dairy products a further 15.7 per cent, refined sugar 13.2 per cent, fruit and vegetables 12.2 per cent and cottage produce 4.6 per cent.

<sup>6</sup> Offer, *First World War*, pp. 25, 28.

<sup>7</sup> Peter Dewey, 'Food Production and policy in the United Kingdom, 1914–1918', *Trans. Royal Historical Society*, fifth ser., 30 (1980), pp. 80–1.

as Kennedy argues, the U-boat was 'the commerce raider par excellence' and its use from 1916 exposed the weakness of Britain's heavy reliance on her navy to protect vital supplies of all imported foodstuffs and raw materials.<sup>8</sup> Alan Wilt's study of British agriculture before the Second World War sees the earlier conflict mainly in terms of attempts to stimulate cereal output by the Corn Production Act of 1917, though making the point that it was in reaction to meat shortages that rationing was finally introduced in 1918.<sup>9</sup>

Although Britain was far more successful in maintaining its supplies of meat and fats, the immediate pressures of the war were marked by an increase in the prices of all foodstuffs. In the case of meat, the poorer civilian consumer was worst affected because cheaper cuts rose more than those of higher quality.<sup>10</sup> The reason for this was that cheaper meat was in short supply from the start of the war when a significant portion was diverted to military rations. For example, the cheapest beef was imported frozen but in 1915 almost all of this was used to supply the allied armies. By September 1916 it was estimated that the civilian consumption of beef and mutton had been reduced by about one-sixth, while the large numbers recruited into such war industries as munitions manufacture increased the numbers required to do particularly arduous work and thereby pushed up the demand for high energy foods like meat. As there was no rationing and those in war work were attracted there by high wages as much as national appeals, food shortages were felt by those in less arduous work like shopworkers, clerks and teachers whose wages and salaries hardly rose at all. Meat queues inevitably became longer as the shortage of supplies caused hundreds of retailers to close their shops, while patriotic appeals were made to those not engaged in manual labour to abstain from eating butchers' meat one day a week.<sup>11</sup>

In these circumstances meat retailers became a steady target for public criticism. By May 1915 heavy government purchases of foreign meat and complaints by butchers of restricted supplies on the open market led to press suggestions that the National Federation of Meat Traders' Associations should encourage its local associations of meat retailers to pool their purchases and distribute supplies to their members. In 1916 there were complaints over the high price of pigs, and in 1917 the Federation, responding to accusations in the press that butchers were profiteering, unsuccessfully requested the President of the Board of Agriculture, R. E. Prothero, to set maximum prices for livestock. The decision was postponed, partly to protect farmers facing high production costs, but the public too as the government had no means of controlling supplies. As the supply situation for consumers and retailers worsened, the government introduced the Meat (Maximum Prices) Order for cattle on 29 August 1917, with sheep following later.<sup>12</sup> As the highest prices were fixed for fully finished animals, it encouraged farmers to hang onto their stock for longer and so probably contributed to the shortages of home-produced meat.<sup>13</sup> Prices were so inflexibly enforced in some areas by Sir Frederick Boys, the Director of

<sup>8</sup> Paul M. Kennedy, *The rise and fall of British naval mastery* (1983 ed.), pp. 244, 253.

<sup>9</sup> Alan F. Wilt, *Food for war. Agriculture and rearmament in Britain before the Second World War* (2001), pp. 15–16.

<sup>10</sup> M. Barnett, *British food policy during the First World War* (1985), p. 37; Offer, *First World War*, pp. 36–7.

<sup>11</sup> BPP, 1916, XIV, *Departmental Committee on increase of prices of commodities since the beginning of the war,*

*Interim Report, meat milk and bacon*, pp. 8–9, 15; Noel Curtis-Bennett, *The food of the people: the history of industrial feeding* (1959), p. 234.

<sup>12</sup> William H. Beveridge, *British food control* (1928), pp. 143, 145.

<sup>13</sup> *Economist*, 30 Mar. 1918, p. 534; E. M. H. Lloyd, *Experiments in state control at the War Office and the Ministry of Food* (1924), pp. 437–9.

Meat Supplies, that a record number of 73 local associations joined the National Federation in a year, hoping for some assistance.<sup>14</sup>

Meat availability was thus not simply a problem that exhibited itself in the early stages of the war; securing adequate supplies presented a growing difficulty, particularly for the civilian consumer, that became worse in its latter stages. Fresh meat, along with sugar and butter, was one of the items of diet whose consumption fell the most over the war years. Between 1909–13 and 1918 weekly per capita consumption of fresh butchers' meat in Britain fell by 38 per cent from 2.04 lb. to 1.27 lb. Only butter consumption, with a decline of 45 per cent, fell more. It is true that over the same period weekly consumption of bacon rose from 0.34 lb. to 0.46 lb., but the weekly total calories per adult male available from both types of meat still fell from 4122 to 3136, or by 24 per cent.<sup>15</sup> Although different types of meat are to some extent substitutes for each other, the limits to this are determined by personal tastes and as well as the price and quality of possible alternatives. Much of the increased bacon that became available in 1918 was imported from the United States. Not only was this product unacceptable as a substitute for fresh meat, it was also unacceptable to many consumers in London and the South East as a substitute for United Kingdom bacon. The American hog industry fed its animals on maize and this gave the meat a much higher fat content than either British or European bacon. American bacon was always regarded as a cheap product before 1914 and most of it was landed at Liverpool, from whence some was re-exported to Ireland and the colonies, and the rest had a ready sale in Northern England among working class consumers engaged in heavy industrial work.<sup>16</sup> However, such regional preferences meant that its widespread availability in 1918 did little to relieve meat shortages among the hard-pressed, though arguably more discerning, consumers in the service economy of London and the South.

Although the 1917 ploughing up campaign was primarily aimed at increasing breadstuffs, it may possibly have helped the longer-term meat situation a little because one of its subsidiary aims was to increase the output of concentrated feeding stuffs for animals, over and above the normal home production of oats normally reserved for this purpose, by some 500,000 tons.<sup>17</sup> But this did nothing to reduce the immediate crisis felt in 1917, and by October weekly consumption of all meats in Great Britain was down to 1.41 lb. per head. The final response of the Food Controller was the introduction of meat rationing, which had been debated at various times throughout the war but was only resorted to in March 1918. There is also evidence that the shortages were felt more heavily in Southern England than elsewhere. The *Economist* took the view

that had it not been for the greatly reduced consumption of meat in London the present scarcity would have developed long ago, in view of the increased demand in other parts of the country. Londoners have reduced their consumption by fully  $\frac{3}{4}$  lb. per head per week since the outbreak of the war.<sup>18</sup>

<sup>14</sup> A. J. Jackson, *History of the National Federation of Meat Traders' Associations* (1956), pp. 88–92.

<sup>15</sup> Beveridge, *British food control*, pp. 311, 313.

<sup>16</sup> BPP, 1897, VIII, *Select Committee on the Agricultural*

(Marks) Bill, Q. 2342; W. H. Simmonds, *The Practical Grocer* (3 vols., 1906), III, p. 109.

<sup>17</sup> *Economist*, 1 June 1918, p. 940.

<sup>18</sup> *Economist*, 30 Mar. 1918, p. 534

Basically, the ration allowed everybody four meals a week, each of which could include 5*d.* in retail value of any kind of meat. Beveridge's view was that while rationing did nothing to increase the amount available, it did ensure an equitable distribution, and it needed to. Nevertheless, meat shortages continued to grow so that national weekly consumption in October 1918 was only 1.01 lb. per head.<sup>19</sup>

## II

In all countries at war livestock production is always given a lower priority than arable. Although no one food supplies all the requirements of good nutrition, grain production is given the most assistance and encouragement, as cereals are seen as being the most efficient use of resources under wartime conditions. In terms of immediate energy requirements 100 gm. of white bread supplies 1030 kJ, while beefsteak only supplies 735 kJ and milk a mere 280 kJ.<sup>20</sup> In addition, the amount of land required to produce the same energy output is far less for cereals than for meat. On the other hand, it was believed that meat was an essential element of diet, and throughout 1914–18, maintaining meat supplies was given a rather higher priority than during the Second World War when dietary knowledge was greater. Throughout the war the chief constraints operating on British livestock and meat production were shortages of land, labour and livestock feed.

In the case of Britain, all of these restrictions on expanding meat production were severe. Many of the difficulties were recognised before the war when home supplies were practically stationary and imports were relied upon for more than 40 per cent of consumption.<sup>21</sup> Writing in 1922, Thomas Middleton argued that some of the estimates of domestic meat production in Britain made before the war were over-optimistic and that in the five years from 1909–10 to 1913–14 the production of beef and mutton in Britain was only 1 million tons per annum.<sup>22</sup> However, he gave no figures for pork and bacon, and never fully explained his reasons for downgrading cottage production of food in which pig keeping played a significant part.<sup>23</sup> Speaking before the British Association in 1912, Henry Rew estimated the domestic output of all meat in Britain at 1.45 million tons for 1911 and this made up 55 per cent of total consumption.<sup>24</sup>

The decision, taken in the 1840s, to concentrate on trade and industry and neglect further agricultural support was an accepted feature of British political management where in the rest of Europe agricultural protection encouraged self-reliance on domestic livestock production. For instance, in 1912 the German farmer produced 4.27 tons of all meats per 100 acres whereas the British farmer in 1908 was only producing 3.97 tons.<sup>25</sup> The lower level of production was of far less concern to Britain because of her heavy reliance on long distance trans-oceanic meat imports. Even here it is possible to see potential limits on future increases in output by some suppliers.

<sup>19</sup> Beveridge, *British food control*, pp. 321, 364.

<sup>20</sup> R. Mottram, *Human nutrition* (1979), p. 8.

<sup>21</sup> G. Leighton and L. Douglas (eds), *The meat industry and meat inspection* (5 vols, 1911), II, p. 432.

<sup>22</sup> Thomas Middleton, *Food production in war* (1923), pp. 37–68.

<sup>23</sup> Dewey, *British agriculture*, pp. 15–16.

<sup>24</sup> R. H. Rew, 'The nation's food supply', *J. Royal Statistical Society*, 76 (1912), p. 101.

<sup>25</sup> BPP, 1916, IV, Thomas Middleton, *The recent development of German agriculture*, p. 10.

In 1913 Britain drew chiefly on Argentina for beef, New Zealand for mutton and lamb, on Australia for mutton and beef, and the United States and Denmark for bacon and hams. New Zealand was a steady supplier with a large and persistent surplus and no other outlet for its meat, but it was difficult to see how it could easily increase its output. Australia, because of droughts, was always a fluctuating source of beef and sheep meat. Possibly the only serious contender for any dramatic expansion of supplies was South America.

By 1914 the most important supplier of beef to the UK was Argentina, and much of the early development of this source had been achieved with British capital by British firms. It was here that farmers had probably achieved the most impressive output growth, largely through the utilisation of alfalfa as a fodder crop. With livestock breed improvements as well, they increased the quantum of meat exports more than six-fold between 1890–94 and 1910–14.<sup>26</sup> In the 1890s Britain had relied heavily on the United States, then a heavy surplus producer of beef and pig meat that was disposed of largely on the British market. But its continued population growth meant that in the years just before the war this surplus declined sharply. Exports of United States beef to the United Kingdom had peaked at 160,000 tons in 1901 but they had disappeared by 1914. American bacon and ham exports had held up better, but by 1913 were less than half their highest level in the 1890s.<sup>27</sup> The United States meat firms, who had formerly controlled their country's meat exports to Britain, reacted to this decline by entering the South American trade to supply the chains of retail butchers' shops they had built up in Britain. By 1914 they had captured from British firms the strongest position in the Argentine and Uruguayan trade and handled 59 per cent of the country's meat exports, while the British firms had 31 per cent and Argentine firms the remaining 10 per cent.<sup>28</sup>

Most of Britain's trans-oceanic supplies of meat were from long distances, with the exception of the Danish pork and bacon trade. Denmark underwent impressive growth in all of its agricultural exports after Germany used the excuse of disease control to ban imports of live Danish pigs in 1887, forcing Danish farmers to look for new markets. Thereafter the Danes concentrated on supplying the British market with bacon. Exports of pigs were 279,000 and pig meat only 8000 tons in 1881–85, but by 1896–1900 the export of live animals had ceased, while bacon and ham exports had increased to 65,000 tons and 95,000 by 1906–10. Denmark was the only European country to substantially increase meat production before the First World War. Danish beef output rose by 33 per cent, and pork and bacon output by 71 per cent between 1903 and 1914.<sup>29</sup>

In 1911 Britain produced around 55 per cent of its own meat and imported the remaining 45 per cent. The largest supplier was Argentina with 16 per cent, followed by the United States and Canada with 13 per cent, Australia, New Zealand and Denmark each contributing over 4 per cent, and 1 per cent from other countries.<sup>30</sup> The bulk of the South American and Australasian beef and mutton were frozen, but small amounts of Argentine beef were chilled. As we notice

<sup>26</sup> Carl Solberg, *The prairies and the pampas: agrarian policy in Canada and Argentina, 1880–1930* (1987), p. 64; Carlos Alejandro, *Essays on the economic history of the Argentine republic* (1970), p. 5.

<sup>27</sup> Richard Perren, *The meat trade in Britain, 1840–1914* (1977), p. 10.

<sup>28</sup> Bill Albert, *South America and the First World War: the impact of the war on Brazil, Argentina, Peru and Chile* (1988), p. 67.

<sup>29</sup> Michael Tracy, *Government and agriculture in Western Europe, 1880–1988* (1989), pp. 112–13.

<sup>30</sup> Rew, 'Nation's food supply', p. 101.

earlier, by 1914 the United States chilled beef trade had finished, and most of Britain's imports from that country were bacon and ham. In addition, there were some smaller British imports of Canadian bacon, but its largest bacon supplier was now Denmark.

### III

The most serious initial effects of the war were felt in the South American River Plate meat trade with Argentina and Uruguay. The view put forward by the Americans that 'in the early stages of the war there was no serious disturbance of the food supply' was certainly not true for meat.<sup>31</sup> In the first place the suspension of the gold standard and immediate breakdown of the international system of payments in the late summer of 1914 made it very difficult for British traders to make payments abroad. Producers themselves, particularly those in South America, were also immediately affected by the rise in freight rates and the breakdown of the multilateral system of trade payments. The insulated meat ships carrying frozen and chilled meat from the River Plate were run under contracts between the ship owners and the meat companies which had a 'war clause'. Immediately after its outbreak, the war clauses were invoked to raise freight rates up to four times their peacetime level to cover the increased risk. The meat companies refused to pay these rates, as they were uncertain what meat prices would prevail in London. Only after the British government persuaded the (largely British) shipping companies to reduce the rates to a more moderate level did the meat companies agree to resume the trade. In addition, the confusion over the financial arrangements with Argentina made it impossible to remit money there and the South American meat firms were unable to pay wages or buy cattle. This situation impacted on farmers with finished animals ready for slaughter and export, which they could not sell to free up the land to bring in the next season's stock. Nor had they any money coming in to meet current expenses.<sup>32</sup>

Faced with these circumstances, the British War Office, urgently requiring beef to feed its troops, decided the best solution was to make its own contracts with the meat companies. To secure supplies the Board of Trade signed an agreement with the mostly British and American owned firms on 28 August 1914 to supply the British army with 15,000 tons of meat a month. The uncertainty about price was resolved by the British government guaranteeing payment to the exporters of the average price during the week the contract meat arrived. In addition, the companies would continue to use the rest of their capacity to supply the British civilian market as far as circumstances allowed. Uncertainties over payment were removed by paying them 75 per cent of the value of each cargo in Argentina the week it left.<sup>33</sup> In this way the trade was resumed and *estancieros'* cash flows were restored. The system remained in force throughout the war, and although the allied purchasing commission acted as a monopolistic buyer, the increase in demand meant that prices continued to rise to the benefit of farmers.

The greatest effects of the increase were felt in Uruguay. There the introduction of the *frigorificos* had been rather later than in Argentina, and, as the war itself saw a significant increase

<sup>31</sup> Benjamin Hibbard, *Effects of the Great War upon agriculture in the United States and Great Britain* (1919), pp. 171–2.

<sup>32</sup> H. W. Macrosty, 'Army meat supplies', *J. Board of Trade*, 109 (1922), p. 603.

<sup>33</sup> *Ibid.*

TABLE 1. Sources of British chilled and frozen meat imports, 1908–1918 ('000 tons)

	1908–13	1914	1915	1916	1917	1918
<i>Beef</i>						
USA	25	5	50	46	47	129
Argentina	271	300	255	202	134	99
Australasia	38	101	99	82	98	47
Total Beef	334	406	404	330	279	275
<i>Mutton</i>						
Argentina	73	57	39	38	24	35
Australasia	160	185	184	128	87	63
Total Mutton	233	242	223	166	111	98

Source: BPP, *Annual statement of trade of the United Kingdom*.

in Uruguayan freezing capacity, this brought benefits to the *estancieros*. Over the six years 1914–1920 exports more than doubled and the price of cattle rose two and a half times. In Argentina the increases were not so pronounced, but were still significant. Average cattle prices there rose 44 per cent between 1913 and 1919, though reversing temporarily in 1917. The reason for the fall in 1917 was the decision by the meat companies to reduce their purchases because of rising freight and insurance rates as war risks increased. The decline in River Plate exports can be seen in Table 1. Farmers expressed indignation at their lower prices, as those in London were still rising, and accused the allied purchasing commissions and the meat exporters of manipulating the market. Regularly rising cattle prices had created strong expectations and this temporary fall led Uruguayan and Argentine cattle farmers' organisations to make representations to their governments.<sup>34</sup>

Their discontent was fuelled further by wartime conditions that demanded frozen beef which could be stockpiled and stored for months before it was issued to the troops, rather than chilled beef which needed to be consumed within a couple of weeks of its arrival in Europe. Frozen beef was less palatable and commanded a lower price. Up to 1914 Argentine farmers engaged in breed improvement, investing heavily in superior bloodstock lines, urged on by the American companies after they entered the industry. When shipments of chilled meat declined and those of frozen meat increased during the war, their superior animals commanded a very low premium over inferior cattle. The meat firms also preferred thin or traditional cattle for canning, and the relative prices of these animals rose. The packers were not responsible for allied demand, but because they earned very high profits from 1915 to 1917, discontented cattle producers argued they were earned partly at their expense and put forward a plan for the expropriation of the meat packing plants, financed through government bonds subscribed by cattle farmers. Similarly, in Uruguay lower cattle prices in 1916 caused discontent among

<sup>34</sup> R. C. Gebhardt, 'The River Plate meat industry since c. 1900: technology, ownership, international trade regimes and domestic policy' (Unpublished Ph.D. thesis, London School of Economics, 2000), pp. 162–3, 368.

cattlemen and led to the denunciation of the meat firms by the pro-rural Blanco party. In the event, cattle prices recovered in 1919 and demands for government intervention faded as producers, driven by rising expectations, continued to expand their output and increase their landholdings.<sup>35</sup>

#### IV

Although the pressures on Britain's meat imports were immediately felt in the South Atlantic trade, the initial effects of the war were entirely beneficial for Australian and New Zealand farmers. Throughout the last months of 1914 large amounts of all farm produce, including frozen meat, were exported at enhanced prices. Meat was sent on optional bills of lading, not only to England but also to France to help meet the requirements of the French army. The *New Zealand Herald* believed that war removed any possibility of depression, and also expected meat shipments to France to become a permanent feature when peace was resumed. Not all Australian farmers were able to benefit to the same extent as production there was held back by drought.<sup>36</sup> The benefits of this sellers' market were felt not only by sheep farmers, but by cattle fatteners as well and the early weeks of the war saw a 50 per cent rise in the London price of frozen North Island beef.<sup>37</sup>

The first real problems did not appear until the early weeks of 1915 when shortage of shipping space began to affect New Zealand farmers. By February the matter had become a full blown political row with the Prime Minister, William Ferguson Massey, and his coalition government, facing accusations from farmers' representatives, the freezing companies and the opposition that they had taken insufficient action to secure shipping space for all the meat the country was prepared to send to England.<sup>38</sup> Although the government argued this was the first time it had had to secure shipping space for the industry and the shortage was being exaggerated, there certainly appear to have been problems in getting all the meat away.<sup>39</sup> As in South America, the familiar allegations that farmers were unable to sell fully fattened animals and were forced to continue feeding them at a loss and watch as their 'over-ripe' stock spoiled and fell in value were made by the leader of the Auckland graziers.<sup>40</sup> In February the main New Zealand farming newspaper, the *Farmers' Union Advocate*, reported that the problem of the dearth of insulated steamers had still not been solved, and the accumulation of carcasses meant the freezing works were about to refuse further deliveries of animals. In anticipation of this, by mid-February the sale price of fat sheep on the South Island had fallen by 2s. a head at East Addington, and from 5s. to 4s. a head at the Ashburton weekly stock market.<sup>41</sup> But there was no short-term solution to the problem of shortage of refrigerated ships, partly because of delayed turn around times caused by dock labour shortages in Britain, and also when the Imperial government re-directed

<sup>35</sup> *Ibid.*, pp. 163–4; Albert, *South America*, pp. 69–70.

<sup>36</sup> *New Zealand Herald* (Auckland, hereafter *NZH*), 1 Jan. 1915, pp. 3b, 4a–b.

<sup>37</sup> *Weekly Press* (Christchurch, hereafter *WP*), 20 Jan. 1915, p. 14d.

<sup>38</sup> *Hawkes Bay Herald* (Napier, hereafter *HBH*), 5 Jan.

1915, p. 3c; 6 Jan. 1915, p. 3d; 8 Jan. 1915, p. 3c.

<sup>39</sup> *HBH*, 9 Jan. 1915, p. 3e.

<sup>40</sup> *HBH*, 7 Jan. 1915, p. 3b.

<sup>41</sup> *Farmers' Union Advocate* (Wellington, hereafter *FUA*), 20 Feb. 1915, pp. 4a, 23c.

ships to other routes once they had discharged their meat and were under its control in British waters.<sup>42</sup>

From the farmers' point of view the difficulties over shipping, which appeared first in 1915 and returned intermittently throughout the war, were overtaken in March 1915 by the New Zealand government's decision to accede to the request of the British government to purchase all New Zealand meat exports on its behalf. Animals were not bought direct from the farmers, but from the freezing companies, who were only paid once the frozen meat was placed on board steamers for Britain and Europe. The weakness of this arrangement was that the freezing companies only paid farmers when the government reimbursed them. From the companies' point of view any delay in shipping the meat was not a problem, as the British government also paid them a daily rate to store the meat. The construction of more cold stores from 1915 meant some increase in storage capacity, but it was still limited, and farmers complained it did nothing to reduce the length of time they had to wait for payment.<sup>43</sup> They also felt sidelined as all arrangements were made between the government and the freezing firms, and they resented the fact that the Farmer's Union was never officially recognized in any of the arrangements for commandeering meat supplies.<sup>44</sup> Resentment grew, and by May 1915 there were complaints that feed was so scarce that many were resigning themselves to heavy losses, and those who found it impossible to carry their stock over to the next season were either preparing to sell at any price or send them to the boiling-down works.<sup>45</sup>

Shortage of shipping space placed similar pressures on Australian farmers, but drought was much more of a problem, and war exacerbated the difficulties it caused in normal times. In anticipation of feed scarcities, farmers adopted the practice of exporting immature animals, but by 1915 this was reported to be adding to the shortage of shipping space. A correspondent in North Queensland reckoned that the good prices offered by exporters had been responsible for the fact that 25 per cent of the cattle killed there in 1914 were immature steers as well as a significant number of breeding cows.<sup>46</sup> To prevent the sacrifice of future fattening animals, as well as curb profiteering at times when shipping space was in short supply, both governments periodically banned the slaughter of immature stock. In January 1916 the North Canterbury branch of the New Zealand Farmers' Union unanimously recommended the government remove its ban on the slaughter of young stock in drought-stricken districts.<sup>47</sup> When this measure was considered again in January 1918, it provoked opposition from farmers who complained it compounded their losses by forcing them to allow animals to starve without any compensation, or buy in feed at prices which would deny them a reasonable profit.<sup>48</sup> In these situations governments resorted to patriotic appeals to farmers, reminding them that some sacrifice might be necessary to maintain supplies of frozen meat.<sup>49</sup>

Farmers were never wholly convinced by this argument and they continued to complain, albeit intermittently. Faced with a monopoly purchaser who had also taken control of shipping

<sup>42</sup> *FUA*, 29 May 1915, p. 3b-c; Sidney Pollard, *The Development of the British Economy, 1914-1980* (1983), p. 22.

<sup>43</sup> *FUA*, 13 Mar. 1915, p. 4a.

<sup>44</sup> *FUA*, 3 Apr. 1915, p. 3a.

<sup>45</sup> *FUA*, 29 May 1915, p. 7b.

<sup>46</sup> *Pastoral Review* (Melbourne, hereafter *PR*), 16 Jan. 1915, pp 71-3; *WP*, 20 Jan. 1915, p. 15b.

<sup>47</sup> *FUA*, 1 Jan. 1916, p. 1d.

<sup>48</sup> *WP*, 2 Jan. 1918, p. 9b-c.

<sup>49</sup> *FUA*, 3 Feb. 1917, p. 6a.

space with the United Kingdom government, they naturally sought reassurance about their own position. This was certainly necessary. As Table 1 above shows, there was a marked reduction in British imports from both countries from 1916. In 1915 Australia sent over 3.5 million carcasses of mutton and lamb to Britain, and New Zealand 6.5 million: from 1916 to 1918 Australia averaged only 636,000 and New Zealand 3.7 million.<sup>50</sup>

By 1916 farmers were facing further pressure on two other counts, driven this time by public opinion. The rise in domestic meat and other farm prices provoked accusations from urban consumer groups, chambers of commerce, and in the popular press that farmers were profiting from the war crisis.<sup>51</sup> Speaking in their defence at a meeting in Winton, South Island farmer J. R. Hamilton replied that they had endured runs of bad years in the past when no sympathy was shown for them, and they were now doing as much as they could to sustain an essential part of the economy. 'Every section of the community ought to be glad the farmers were doing well because the farmer was the fountain-head of production.'<sup>52</sup> The other accusation made against them was that not enough young men were enlisting, and it was suggested that rural communities subscribed less than others to war funds.<sup>53</sup> The introduction of conscription in New Zealand in August 1915, unlike in Australia where it was rejected in two referendums, added shortages of skilled workers to farmers' woes. As in Britain, not always successful applications for exemptions were made to local selection boards, and female workers were recruited to help out.<sup>54</sup>

These sentiments were part of the usual prejudice and rivalry between town and country that always surfaces during times of economic upheaval, especially in wartime when increased food prices have the greatest effect on the urban consumer. In both countries the purchase of large numbers of carcasses for export by the government at prices determined in Britain, together with government efforts to hold down domestic wages, led to complaints from urban butchers that their customers were unwilling to pay the enhanced domestic prices. In Auckland in 1917 the government's attempts to prohibit butchers from raising prices led to some of them giving up their businesses and the New Zealand Board of Trade commandeered two empty butchers' shops from which to sell meat at lower prices than the remaining ones in private ownership.<sup>55</sup> In Queensland in 1917, and all of New Zealand in 1918, high meat prices led governments to order exporters to deliver meat to local butchers at lower prices than could be earned by exporting it to Britain, in order to provide some measure of protection for the urban consumer. However, this caused some graziers, now doing very well from the high export prices, to voice the fear that the exporters would then shift any price reduction onto them.<sup>56</sup>

## V

In contrast to the rest of Europe, the United Kingdom's meat industry handled the changeover to wartime conditions comparatively smoothly. Britain, as the largest market for internationally traded meat, had one of the smallest domestic meat industries. Nevertheless, it still produced 57 per cent of its meat at home, so in spite of the importance of its international meat trade, the

<sup>50</sup> Pearse, *The world's meat future*, p. 17.

<sup>51</sup> *FUA*, 10 June 1916, p. 9a-b.

<sup>52</sup> *FUA*, 26 Feb. 1916, p. 24d.

<sup>53</sup> *FUA*, 1 Jan. 1916, p. 1b-d.

<sup>54</sup> *FUA*, 3 Feb. 1917, p. 22d; 10 Feb. 1917, p. 22c; 26 Jan. 1918, p. 24d.

<sup>55</sup> *NZH*, 13 Jan. 1917, p. 6h.

<sup>56</sup> *PR*, 16 Feb. 1917, p. 168; *FUA*, 5 Jan. 1918, p. 8c.

provision of adequate supplies for the population was determined as much by the performance of the British farmer as it was by the ability to maintain imports.<sup>57</sup>

In his survey of livestock numbers and meat production, J. B. Guild concluded that overall cattle numbers were maintained from 1914 to 1918, but that sheep and pigs (excluding pigs kept by cottagers) declined by 3 and 29 per cent respectively. The ploughing up campaign from 1917 had no great impact on overall cattle and sheep numbers, and the most serious decline in pig numbers was in Ireland from 1917 onwards. Reductions in imported and home grown fodder crops from 1917 had an immediate impact on pig numbers. As can be seen from Table 2, the fall in the quantity of pig meat produced was on a larger scale than any of the other of Britain's major meats. Although most of Britain's trans-oceanic supplies were from long distances, they were kept open with the exception of the Danish pork and bacon trade.

The most serious strain on all meat supplies came from the growing allied armies in Europe, who were absorbing an increasing proportion of imports of refrigerated meat, which as we have seen were also reduced by the shipping shortage.<sup>58</sup> The arrangement made in early 1915, when Britain agreed with colonial governments to purchase the major part of all their supplies for its own use, made little difference to the situation before 1914 when Britain was the largest market for all internationally traded meat. At the same time, Britain agreed to purchase 20,000 tons a month for the French army to prevent them from driving up prices by bidding separately, and, shortly after, it guaranteed the Italians 5,000 tons for its troops. By 1916 the monthly quantities rose to 30,000 tons for the British army, in addition to the 25,000 tons of leaner and cheaper 'continental quality' for French and Italian troops.<sup>59</sup> As can be seen from Table 1 above, these demands helped divert the imports of frozen and chilled meat on which Britain had come to rely so heavily by 1914, so that by 1917 beef imports had declined by 31 per cent and mutton by 54 per cent. In that same year, French imports of frozen meat were 180,000 tons.<sup>60</sup>

These losses left only 375,000 tons of refrigerated meat, or around half the pre-war supply, available for the civilian population and troops stationed in the United Kingdom 1917. In addition, the shortage of feeding stuffs meant a reduction in the slaughter weights of domestic cattle.<sup>61</sup> The general picture to emerge from Guild's analysis can be seen in Table 2. From the second half of 1917 the effects of the war on the meat producing operations of British farmers severely reduced output. In addition, their situation was further affected by the decision to impose price controls from August 1917.

The pressures on government were immediate ones, of supplying the meat requirements of the military, and then those of the civilian population. But in doing this it had to ensure farmers retained sufficient livestock to rebuild herd and flock levels after the war. Besides being an essential contribution to the first, meat imports can be seen as the chief way of maintaining enough farm livestock for an orderly return to peace. But serious shipping difficulties in 1917 were also responsible for a significant rise in the number of animals slaughtered in the last

<sup>57</sup> J. B. Guild, 'Variations in the numbers of live stock and in the production of meat in the United Kingdom during the war', *J. Royal Statistical Society* 83 (1920) p. 533.

<sup>58</sup> *Ibid.*, pp. 534–45; Smith, *The world's food*, p. 224.

<sup>59</sup> Macrosty, 'Army meat supplies', pp. 603–04.

<sup>60</sup> Augé-Laribé and Pinot, *Agriculture and food supply*, p. 75.

<sup>61</sup> Guild, 'Variations', pp. 534, 551–2.

TABLE 2. United Kingdom Meat Production, 1909–1918 ('000 tons)

Years	Beef and veal	Mutton and lamb	Pig meat	Offal	All meat
1909–13	749	320	385	65	1519
1914	837	283	405	69	1594
1915	749	282	395	64	1490
1916	823	304	350	66	1543
1917	721	281	205	54	1261
1918	620	209	175	45	1049

Source: J. B. Guild, 'Variations in the numbers of live stock and in the production of meat in the United Kingdom during the war', *J. Royal Statistical Society*, 83 (1920), p. 548.

quarter.<sup>62</sup> This was made worse by the government setting a target of 250,000 cattle for army needs. To prevent an excessive price increase, it tried to fix prices for all cattle slaughtered, whether for Army or civilian consumption. It did this on a monthly descending scale for first grade cattle, fixed at 74s. in August, falling to 60s. in January 1918. Besides fierce protests from farmers facing falling prices when costs were rising, it caused excessive numbers of animals to be rushed to market in September and October, including many that were underweight, to take advantage of the higher price. Attempts to revise prices and modify the scheme led to further uncertainty, so that in late December and the following January there were few cattle coming to market, butchers had to shut their shops and queues formed whenever there were rumours they had meat.<sup>63</sup>

In normal seasons prices rose from September to January, but the government had done the reverse, as well as setting the September price significantly higher than its equivalent in previous years. In February 1918 Lord Milner admitted the mistake. Speaking in the House of Lords he perhaps unnecessarily took the full blame, and admitting that 'Instead of spreading a certain scarcity over four months, there was an abundance over two months, and a scarcity during another two months'.<sup>64</sup> To reassure farmers that meat production would be remunerative, the War Cabinet had to announce that the December price of 67s. would continue to July 1918, and the maximum of 60s. would only come into force for the rest of the year.<sup>65</sup>

## VI

The United States has been represented as the great saviour of the allied food supply in all histories of the war, and it supplied 80 per cent of Britain's meat and fats in 1917 and 1918.<sup>66</sup> However, its position in the early years of the war, when it was officially neutral, was more ambiguous. In the case of meat it probably added to Britain's difficulties. Four large packing firms, Armour, Morris, Swift, and Hammond dominated the United States meat industry and controlled all American meat exports. Because they often cooperated with each other they were

<sup>62</sup> *Ibid.*, p. 548.

<sup>63</sup> Beveridge, *British food control*, pp. 140–5.

<sup>64</sup> *Ibid.*, p. 148.

<sup>65</sup> Hibbard, *Effects of the Great War*, p. 213.

<sup>66</sup> Offer, *First World War*, p. 376.

regarded by farmers, politicians, and a large section of the public as a cartel and collectively known as the 'Meat Trust'.<sup>67</sup> After 1900 as the American meat export surplus started to decline, the trust firms showed an increasing interest in Argentina and in 1906–7 Swift set up a plant there and the other firms soon followed.<sup>68</sup> The final disappearance of American beef exports and the fear that domestic supplies of meat alone would not satisfy the American market had made the United States 'an open customer for meat'. The Underwood Act, passed in 1913, removed the duties on meat shipped to the United States and raised fears that Australian, New Zealand and Argentine meat would be diverted from Europe. Considerable amounts were shipped from these countries to the United States from mid-1913 to the outbreak of war and continued into the early part of the war.<sup>69</sup> In January 1915 the Australian *Pastoral Review* carried comments from its correspondent, sent from London in November 1914, that 'Argentine supplies of chilled beef are being diverted to the States in growing quantities, and will increase when the existing shipping facilities are augmented'.<sup>70</sup> The same thing was also noted in the 1915 *Report* on the Australian meat export trade.<sup>71</sup>

The reasons for this were the slow realisation of the seriousness of the situation, the American meat firms' preoccupation with profit and supplying the United States market, and the time taken by the British government to implement a comprehensive system of control. In the early stages of the war South American meat was imported by the United States, but not all of it was ultimately destined for that market, and it was alleged that some was being stored there rather than in the United Kingdom to avoid being commandeered by the British authorities.<sup>72</sup> American firms also attempted to make purchases for the American market in Australia and New Zealand. As far as Commonwealth and South American farmers were concerned it made little difference to the price they received, as the overall level of demand was the same. But the ability of the American firms to hold back supplies out of the immediate control of British military requisitioning officers did increase prices for the United Kingdom and helped fuel the rapid rise in consumer prices in the early part of the war. It was also claimed that the use of extra ships to take Argentine meat to cold stores in New York, hold it there and then re-ship it to England when the firms had negotiated a sufficiently high price with the British authorities, tied up shipping space and added further to freight charges, which were then passed back to the New Zealand, Australian and South American farmers.<sup>73</sup>

The shortages in Europe and increased prices did eventually have a positive effect on United States farmers, stimulating them to increase meat output as well. The gradual fall in cattle numbers for some years before the war was reversed after 1914, numbers rising from 56.6 million in 1914 to 66.8 million in 1918 and the prices of all meat animals rose steadily, the greatest increase

<sup>67</sup> Rudolf A. Clemen, *The American livestock and meat industry* (1923), pp. 745–67.

<sup>68</sup> M. Yeager, *Competition and regulation: the development of oligopoly in the meat packing industry* (1981), p. 206.

<sup>69</sup> *Meat Trades J.*, 1 Jan. 1914, p. 12; 15 Jan. 1914, p. 68; R. Ramsay, 'The world's frozen and chilled meat trade', in Gresham Publishing Co. Ltd, *The meat trade* (3 vols, 1935), III, p. 16; R. Perren, 'Big business and its

customers: the European market for American meat from 1840 to 1939', *J. European Economic History* 32 (2003), p. 602.

<sup>70</sup> *PR*, 16 Jan. 1915, p. 71.

<sup>71</sup> BPP, 1914–1916, XLVI, *Report of the Royal Commission on the meat export trade of Australia*, pp. 24–5, 27, 40.

<sup>72</sup> W. D. Lysnar, *Meat and shipping problems* (1917), pp. 10–12.

<sup>73</sup> *Ibid.*, pp. 14–16.

being for hogs whose price almost doubled.<sup>74</sup> In the early stages of the war the government took no measures to impose any form of control over meat prices or measures to encourage farmers to raise production. Indeed, most of the wartime increases in United States livestock numbers were simply the normal responses of farmers to rising prices. Even with the establishment of the Federal Food Administration after America entered the war in 1917, there was initially no attempt to manage meat supplies in the same manner as wheat.

The Food Administration, under Herbert Hoover, started by concentrating meat buying for the allies, the Red Cross, and Belgian relief into a single agency with its headquarters in Chicago. From November 1917 attempts were made to stabilise pork prices and stimulate pig meat production by maintaining the price per hundredweight of finished hogs at thirteen times the price of a bushel of corn during their growth. (It was estimated that an equivalent of twelve bushels of corn was required to produce a hundredweight of hog, so the price equivalent of thirteen bushels was set to stimulate an increase in production.) Much less was done for beef. It was only in January 1918 that Hoover agreed with Britain to increase export orders for frozen meat to clear part of the American cold stores. The packers were advised that the prices of cattle (except poorer animals for canning) should not be allowed to fall substantially below current levels. Hoover defended this approach by saying 'we all know that an attempt to fix standard, or minimum cattle prices is almost an impossibility, and that during most periods, the demand takes care of the supply'.<sup>75</sup>

The truth of this statement, and the weakness of the Food Administration's rules, became apparent in August 1918. In normal times it had a fair degree of control over prices as it bought such large numbers of cattle that it could prevent the market from becoming congested and prices falling. It was its policy of buying almost no lightweight animals (those weighing 1000 to 1800 pounds), which it left to find their own prices with the canners, that caused problems when the pastures in Oklahoma and Texas suddenly failed at the end of July. Large numbers of this class of animal came onto the markets, and for a time they sold for eight or nine cents a pound while heavy beeves sold at 15 to 18 cents. This meant a direct and unnecessary loss for farmers. At times they were selling cows for little more than the cost of the hides and the market was flooded with meat bought from the farmer at a ridiculously low price, while the meatless days introduced to limit domestic consumption still continued, and the consumer was forced to pay higher prices. Eventually, after receiving many urgent telegrams from farmers, the Food Administration suspended the meatless days as far as beef was concerned and agreed to purchase some of the lighter weight beef carcasses.<sup>76</sup>

## VII

Looking at the fortunes of livestock farmers over the war as a whole, certain conclusions can be drawn. Those producing for an export market experienced a steady increase in demand as a result of rising purchases by their own governments or other agencies on behalf of the British Government. This, though, became a highly centralized business. The precise forms of control

<sup>74</sup> Hibbard, *Effects of the Great War*, pp. 56–7.

<sup>76</sup> *Ibid.*, pp. 132–3.

<sup>75</sup> *Ibid.*, pp. 129–32.

varied from country to country, depending on the closeness of their wartime alliance with Britain. Although normal market mechanisms were suspended in every case, in an attempt to impose some control over prices and supplies, there were limits to the effectiveness of these measures. The restrictions that accompanied them were a frequent source of friction between farmers and governments, or the meat-exporting firms acting on governments' behalf.

At times, as in the United States in the summer of 1918, there were instances where government controls in the meat exporting countries broke down completely, but they were very rare. The usual situation was an undercurrent of discontent and anxiety among farmers at the closer controls being exercised over their operations. In 1915 New Zealand farmers partly blamed the difficulties caused by the shortage of shipping space on their own government's failure to protect their interests in its dealings with London. As the River Plate countries were neutral throughout the war there was no need for the Argentine or Uruguayan governments to exercise any direct market control over the market. Here farmers' discontent at low prices in 1917 was not directed against their government but against the meat packers. For Britain's wartime allies, the conflict involved cost and this made them aware of the need to restrain the rise in farm prices as far as was possible without undermining farmers' incentive to produce. However, for all these countries the total allied control over refrigerated shipping meant that livestock farmers were unable, as the United States consul in Argentina observed in 1914, 'to secure any extraordinary benefits from the situation caused by the European war'.<sup>77</sup>

The meat problems facing the British consumer were the result of a number of causes. In the first place there was an absolute shortage from reduced home output and a fall in imports. The reduction in domestic production was probably not so much because pasture was converted to arable, but more likely to have been caused by a reduction in the availability of animal feed. This was particularly apparent in the case of pig meat as pig producers were in direct competition with humans for food. While the ploughing up campaign of 1917 certainly reduced sheep and cattle pasture, the concentration on bread corn and the increase in flour milling ratios were important factors in reducing the availability of livestock feed from domestic sources. There were also serious reductions on the imports of cheap animal feed, on which much of the pre-1914 livestock industry was based. Dewey estimates that by 1918 there was an overall reduction in imported and domestic feedstuffs of something like 60 per cent.<sup>78</sup> But the meat question was not only one of availability: it was one of choice, along with palatability and variety. Offer quotes an American physiologist living in Germany in 1916, when meat and fat shortages then were far more severe than they ever became in Britain, who said: 'Had the Germans been vegetarians, there would have been no problem'.<sup>79</sup> The problem, though, for all war economies is that once the initial patriotic appeals have died away, consumers soon become demoralized by food queues and restricted choice. In Britain this was acutely noticeable for meat, where reduced domestic output and a heavy reliance on canned and frozen imports, along with substitutes of unpalatable United States bacon, represented for many a noticeable deterioration of dietary standards. There are very real limits to the extent which a nation can suffer a reduction in its level of consumption and also avoid a serious deterioration in morale.

<sup>77</sup> Quoted in Albert, *South America*, p. 70.

<sup>79</sup> Offer, *First World War*, p. 25.

<sup>78</sup> Dewey, *British agriculture*, pp. 167–169, 252.

One result of the war was that in all countries the interests of the civilian consumer came last. Although governments did not completely neglect them, the decision to feed the allied armies in Europe to a higher standard than in peacetime meant that the supplies available to the civilian market had to be reduced. One result was retail prices increased more than farm gate prices, but here there were a number of other factors at work in addition to reduced supply. It is incontrovertible that war risks, as well as shipping and labour shortages, inevitably added to production and distribution costs. The meat companies, who effectively operated the export trade before 1914, now did so on behalf of the British government. Although subject to government pressure over prices and supplies, there were limits to how far the British government could manage them, even though it ultimately controlled the available shipping space. In return for their co-operation, it had to allow the firms to make handsome profits. It was also in the interests of both parties to shift the burden of as much of the extra costs involved, either back to the farmer or forward onto the civilian consumer. Civilians complained about high food prices, but they also reacted to them by blaming farmers and traders for seeking to profit from the war. Farmers' organizations interpreted civilian complaints as a wilful refusal to understand their difficulties, and government controls and exporting firms' high profits as an attempt to place an unfair share of war costs on their shoulders. In return, they expected a higher level of support from government when artificially inflated wartime demand collapsed on the resumption of peace.