

A REVIEW OF THE WORLD

SHEEPMEAT MARKET

EASTERN BLOC, U.S.S.R. AND MONGOLIA

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## THE AGRICULTURAL ECONOMICS RESEARCH UNIT

Lincoln College, Canterbury, N.Z.

THE UNIT was established in 1962 at Lincoln College, University of Canterbury. Its major sources of funding have been annual grants from the Department of Scientific and Industrial Research and the College. These grants have been supplemented by others from commercial and other organisations for specific research projects within New Zealand and overseas.

The Unit has on hand a programme of research in the fields of agricultural economics and management, including production, marketing and policy, resource economics, and the economics of location and transportation. The results of these research studies are published as Research Reports as projects are completed. In addition, technical papers, discussion papers and reprints of papers published or delivered elsewhere are available on request. For list of previous publications see inside back cover.

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## PREFACE

This volume is the fifth in a series of five reviewing the world sheepmeat market. Other volumes in the series are as follows: Volume 1 gives an overview of the world sheepmeat market. In this respect, Volume 1 can be considered a summary for the whole series. Volume 2 presents a review of sheepmeat production, consumption and trade in the major exporting countries of New Zealand, Australia and Argentina. Volume 3 reviews the sheepmeat market in the EEC whilst Volume 4 concentrates on North America, Japan and the Middle East.

The present paper (Volume 5) concentrates on the Eastern European countries where nearly 25 per cent of world sheep and goat numbers are contained. Even with such a high proportion of world sheep numbers, the region contains both net importing as well as net exporting countries.

The five volumes of this Discussion Paper form part of the AERU's programme of research in the marketing and international trade area. Other papers relevant to sheepmeat markets published recently by the AERU include Research Report No. 109 by R.L. Sheppard on Changes in U.K. Meat Demand, Discussion Papers No. 51 and 59 by N. Blyth on the EEC Sheepmeat Regime and Discussion Paper No. 52 on Future Directions for New Zealand Lamb Marketing.

P.D. Chudleigh,

Director.



## SUMMARY

Sheep farming is an important enterprise in the U.S.S.R., Mongolia and some of the Eastern European countries. The U.S.S.R., in fact, has the largest number of sheep in the world, though production is considerably lower than that of the Oceanic countries, and is generally insufficient to satisfy domestic demand.

Trade in sheep products is becoming more important for all the Eastern European countries. The U.S.S.R. has an increasing, though irregular import demand, which consists largely of mutton from N.Z. and Australia.

Hungary, Bulgaria and Rumania have growing exports of both live sheep and sheep meats sold mainly to the E.E.C., but with increasing amounts going to the Middle East.

Mongolia has a large, stable export trade in live sheep, the majority of which are sold to other East European countries.

The expansion in trade is likely to continue through the 1980's; exports from Eastern Europe will pose greater competition for traditional exporters in World markets, but imports into U.S.S.R. will provide a continuing, sizeable market for mutton.



## 1. INTRODUCTION

The objective of this volume is to make an assessment of the present situation in the production, consumption and trade in the sheep industry in Eastern Europe, and to give an indication of future trends in the region.

The study embraces the following countries : the Soviet Union (U.S.S.R.), Bulgaria, the German Democratic Republic (G.D.R.), Poland, Rumania, Czechoslovakia, Hungary, Yugoslavia and Mongolia. These countries are members of the Council for Mutual Economic Aid (CMEA, or the Comecon) which also includes Cuba.

As the region has about 24% of world sheep and goat numbers, it occupies an important place in the world sheep economy. The U.S.S.R. is the world's largest sheep producer, but is a net importer of sheepmeats; Mongolia, a little-considered country, also has a large stock of sheep and goats, and exports sizeable numbers each year. The remaining group of countries (referred to, here, as the Eastern Bloc States) is a net exporter.

Sheep numbers in the region are fairly stable overall, with numbers increasing in the U.S.S.R., Mongolia and some of the Eastern Bloc states. Trade, however, has grown rapidly but erratically. Seventy to eighty percent of sheep trade takes place within the region, but the U.S.S.R., since 1970, has also purchased on the world

market, while Rumania, Bulgaria and Hungary have a growing export trade to the E.E.C. and the Middle East. The growing involvement in international trade is emphasised here, since information on many aspects of domestic supply and demand and intra-regional trade is not readily available.

The basic data used included official statistics of each country and other East European publications; use was also made of documents of International organisations and of foreign trade statistics of other countries.

The region is discussed in 3 sections - the Eastern Bloc states, the U.S.S.R., and, briefly, Mongolia, though many of the comments made in each section are applicable to the whole region.

## 2. THE EASTERN BLOC

### 2.1 Introduction

The Eastern Bloc is composed of seven countries: four in the north (Poland, East Germany, Czechoslovakia, and Hungary), and three in the south (Rumania, Bulgaria and Yugoslavia). The region encompasses a wide variety of topographical and climatic conditions, levels of economic development and livestock production systems. However, the unifying factors are the similarities of the political systems and economic policies of the 7 countries, and the preferential trading agreement regulated through the Council for Mutual Economic Assistance (CMEA). Of the Eastern Bloc's trade 70% is with this group of countries, based on bilateral exchanges. Since 1964 multilateral trade has expanded somewhat (this applies to sheepmeat, as will be seen below), and may continue to grow depending on priorities set by Government policy.

State plans are made for 5 years ahead, firstly, for production and consumption levels. In turn this determines the trade pattern, which is allocated according to CMEA rules for intra - or extra - regional trade. The sheep industry in the Eastern Bloc is reviewed below at each of these levels, with a brief consideration as to future prospects.

## 2.2 Production

Among the many factors determining livestock production in the Eastern Bloc, the following are especially important : climate and soils, government policies and programmes, marketing, prices and returns, changes in technology, and institutional changes. These will be discussed briefly here as they affect sheepmeat production. For more general comments see USDA (1973, 1978).

There have been increased efforts to develop animal production as the Governments of all seven countries are anxious to satisfy rising demand from domestic sources. The state "production-plans" allow for structural change, tax incentives and increased investment to raise productivity. If successful, the current level of meat supplies should be maintained. In order to achieve planned levels of production, procurement prices were increased in all countries in the late 1970's and production of all meat has grown 2% per annum over the period 1960-80.

Sheepmeat production is not an important enterprise in the region. It accounts for less than 5% of total meat supply and is becoming relatively less important as output has increased only 1.1% per annum. However, the situation is not the same in all countries: the main sheep region consists of the southern countries of the Eastern Bloc (Bulgaria, Rumania and Yugoslavia) where the production systems are more extensive. Table 1, giving sheep numbers by country, supports this; 32 million of the region's 41 million sheep are in these three countries.

Table 1  
Eastern Bloc: Sheep Numbers (Millions)

	Total	Bulgaria	Rumania	Yugo- slavia	Czecho- slovakia	G.D.R.	Hungary	Poland
1960	39.3	8.2	11.2	11.4	.7	2.1	2	3
1961	39.5	9.3	11.5	10.8	.6	2	2.2	3
1962	41.2	10.1	12.2	11.1	.6	1.9	2.2	2.8
1963	39.4	10.9	12.1	10	.5	1.7	2.2	2.5
1964	39.5	10.3	12.4	9.7	.5	1.8	2.3	2.3
1965	40.1	10.4	12.7	9.4	.5	1.9	2.6	2.4
1966	40.9	10.3	13.1	9.8	.6	1.9	2.4	2.5
1967	42.1	9.9	14.1	10.3	.6	1.9	2.3	2.7
1968	42.2	9.9	14.3	10.3	.7	1.8	2.3	2.7
1969	41.5	9.6	14.2	9.7	.9	1.8	2.3	2.7
1970	39.5	9.2	13.8	8.9	.9	1.7	2.2	2.6
1971	39.7	9.6	13.8	8.7	.9	1.6	2.3	2.6
1972	39.7	10.1	14	8.3	.9	1.5	2	2.6
1973	39.2	9.9	14.4	7.7	.8	1.6	1.9	2.6
1974	38.9	9.7	14.3	7.8	.8	1.7	1.8	2.5
1975	39.2	9.7	13.9	8.1	.8	1.8	2	2.6
1976	39.2	10	13.8	7.8	.80	1.88	2.0	2.7
1977	39.5	9.7	14.3	7.4	.79	1.87	2.3	3.9
1978	40.5	10.1	14.8	7.5	.84	1.92	2.6	4.2
1979	41.8	10.1	15.0	7.3	.86	1.96	2.8	4.2
1980	43.3	10.5	16.2	7.2	.87	2.0	3.0	4.2
FAO Projections for sheep numbers								
1985	43.7 - 40.4	11 - 12	18 - 18.5	8 - 9	-	-	2.7 - 3	4.4 - 4.9

Source: FAO, 1979; USDA.

Total numbers have remained stable since 1960 as the increases in numbers in Bulgaria and Rumania offset the decline in Yugoslavia.

The countries with the greater numbers of sheep (Bulgaria and Rumania) keep certain sheep for quality wool, others for their skins, and others for milking sheep, the meat quality of which is relatively low.

A change in emphasis from wool to meat production (Sprott and Hearn, 1974) has occurred in the sheep industry as the importance of artificial fibres and demand for meat (both domestic and export) have increased. The size of flocks depends on the availability of pastures that are unsuitable for cattle; sheep farming is still a "marginal" enterprise, pursued in mountainous regions or in areas of poor-quality grass (USDA, 1973). Due to the climate, grazing seasons are short, and the extreme variability of the weather often affects production.

In general though, production of sheepmeat has increased faster than sheep numbers (Table 2), and has grown from 164 Kt in 1960 to 200 Kt in 1980 which suggests increased productivity. The main growth in productivity has been in Bulgaria and Rumania and least impressive in Poland and the G.D.R. (USDA (1973) gives further analysis of productivity changes). Reasons for this difference in growth and production are difficult to isolate though two factors seem important.

Firstly, there has been greater scope for productivity improvements in the less developed countries : consequently,

Table 2  
Eastern Bloc: Sheepmeat Production (Kt)

	Total*	Bulgaria	Rumania	Yugo - slavia	Czecho- slovakia	G.D.R.	Hungary	Poland
1960	164.5	45.1	50.0	59.0	9.6	15.5	7.7	27.5
1961	152.8	48.7	50	46	9	9	10.1	30
1962	168.9	58.2	50	54	8	10	10.1	28.6
1963	151.6	56.4	50	45	6	10	8.7	25.5
1964	155.1	67.9	50	42	5	11	6.2	23.1
1965	172.1	73.9	50	44	6.8	15.5	8.9	23
1966	183	83.8	50	46	5.6	15.1	9.1	23.5
1967	186.7	86	50	50	5.7	11.7	8.4	24.9
1968	193.6	88.3	50	55	5.5	10.6	7.7	26.6
1969	189.4	86.6	50	51	6.3	11.8	7.5	26.2
1970	179.4	82	76	47	7.5	10.6	6.3	26
1971	184.8	88.2	77	50	7.7	10.3	5.3	23.2
1972	185.3	87.6	83	49	7.6	11	5.5	24.6
1973	187.3	86.8	89	50	7.5	11.4	7	24.5
1974	183.8	86.8	91	48	6.8	12.7	6.3	23.2
1975	182.4	78.6	87	55	6.7	13.9	6.5	21.6
1976	200.6	87	91	60	6	20	8.8	18.8
1977	192.3	83.6	98	57	6	18	9.5	18.2
1978	194.4	77	97	57	5	19	9.6	19.8
1979	194.8	75	99	58	5.2	20	9.8	21.8
1980	198.7	76.5	99	50	5.2	21	9.9	21.1
	<u>FAO Projection</u>		(includes Rumania)					
1985	320-50	99-107	122-126	70-80	10	20	29-31	37-41
	<u>CEC Projection</u>							
1985	255	100	96	-	7.5	15	17	45

Source: FAO, 1979.

CEC, 1978.

USDA

(\* Growth in production of 1% per annum.

Excludes Rumania)

the gap between the more advanced positions of Czechoslovakia and the G.D.R. and the rest of the region has narrowed. Also, as incomes rise relatively faster in the southern states, increasing demand has stimulated sheepmeat output.

The second factor encouraging output in certain regions has been the system of state and collectivized ownership of land. In Bulgaria and Rumania, large controlled farms have enabled the Governments to rationalize and increase investment in agriculture and achieve greater efficiency.

In contrast, in Poland and Yugoslavia farms are small and fragmented and mainly owner-operated; technical improvements tend to be adopted slowly. Sheep farming here has also been pushed out by cattle, though there are signs of a reversal in this trend. The reason for this reversal is a shift to specialisation in farming, with the running of flocks of ewes now a separate system from the intensive feeding of lambs for producing good quality meat. Both Poland and the G.D.R. are advanced in this kind of development and Rumania and Bulgaria are making rapid changes with the help of imported breeding ewes to improve flocks. In addition to supplying the producers themselves and the rural population, in all the Eastern Bloc countries private animal production plays an important part in supplying the urban population by way of the Kolkhoze markets through which such produce is sold. The prices in these markets are generally

unregulated, and determined by supply and demand.

The limited quantities produced do not stabilise supply, but nevertheless give a definite base level of production, which ease the difficulties faced by consumers, especially in years of poor grain harvests.

An increase in private production is to be expected, since chronic meat shortages have forced Governments to initiate measures to promote the development of private livestock keeping.

Even in countries with predominantly socialised agriculture, workers are allowed to keep a limited number of animals privately: 25% of the sheep in the Eastern Bloc are owned by individuals. A major factor in Hungary's increase in sheep numbers and output since 1973 has been the elimination of control on livestock held privately. State agencies purchase a fixed quantity of output (according to the official plan); production in excess can be marketed privately, though the price difference between state procurement and private sales varies between countries. Government sales are often subsidised, which depresses the "market" price, but Government prices to producers may also be low, depending on the incentive being given to that particular sector. The proportion of sheep kept privately, in relation to total numbers in Eastern Europe, is falling as a result of the increase in numbers in the Socialised Sector.

State production plans all provide for increased production of sheepmeat from 1980-85 (Moir and Sheales,

1979). Similar estimates are given by FAO (1979) and CEC (1978) for total output of 320-50 Kt (including Rumania) in 1985; however, their distribution of supply could overestimate production in Poland (40 Kt), Hungary (30 Kt) and Yugoslavia (70-80 Kt).

USDA (1973) projections to 1980 were made using current levels plus a time trend. Overall, this method gave reasonably accurate results in the light of actual sheepmeat production at the end of the 1970's. Tables 1 and 2 summarise projections for sheep numbers and meat production.

### 2.3 Consumption

As Governments in the Eastern Bloc exercise control over trade and consumption levels, their consumer policies behind the 5 year plans are important. A desire to raise the living standards of the population has been given a prominent position in most plans (Spratt and Hearn, 1974; CEC, 1978) but the achievement of a high level of consumerism can only be realised if the goods are available. In fact, the demand for meat is not always met by the supplies available. There are several reasons for the pressure of demand on the meat market.

Firstly, the policy of allowing an improvement in living standards is also understood to mean a high nutritional standard. For consumers this implies a larger allocation of meat, in view of the lack of other attractive

items to buy.

Secondly, the population of the Eastern Bloc is 135 million (Table 3), with a growth rate of 0.7% which is expected to continue. In contrast to this low rate, the annual level of economic growth was 6% in 1960-80, which suggests large increases in per capita incomes, that will have the effect of increasing demand for meat, as it has in the past. The growth in personal disposable incomes has been accompanied by a change in the pattern of demand, with increased consumption of meat and high protein foods. Per capita meat consumption rose, from 1960-80, by 25% (G.D.R.) to 40% (Bulgaria) (see Table 4). The main increase in demand was for beef and veal, then pork, but with little change in mutton and lamb. Many of the countries in the Eastern Bloc have meat consumption levels well below those of most developed countries, so further economic growth should stimulate demand. G.D.R., Czechoslovakia and Yugoslavia however have relatively high levels of 70 - 80 kg/year, as high as many Western European states. Plans have been set which allow a 4½% increase per annum in consumption of all meats. To achieve this, there is considerable subsidisation of meat in all countries (except Hungary) which encourages consumption of meat relative to other goods.

All countries, except Rumania, publish consumption figures; many give only an aggregate 'meat' category, so the breakdowns given here (Table 4) are an estimate, based on the proportion of meat types produced and trade inform-

Table 3

## Eastern Bloc: Population (million)

	Total	Bulgaria	Rumania	Yugo slavia	Czecho slovakia	G.D.R.	Hungary	Poland
1960	114	7.87	18.4	18.4	13.65	17.24	9.98	29.56
1961	115	7.94	18.57	18.61	13.78	17.12	10.03	39.96
1962	116	8.01	18.68	18.84	13.86	17.1	10.06	30.32
1963	117	8.08	18.81	19.07	13.95	17.15	10.09	30.69
1964	118	8.14	18.93	19.28	14.06	16.99	10.13	31.16
1965	119	8.2	19.03	19.51	14.16	17.04	10.15	31.5
1966	120	8.26	19.14	19.74	14.24	17.07	10.18	31.7
1967	121	8.31	19.28	19.95	14.31	17.08	10.22	31.9
1968	122	8.37	19.71	20.02	14.36	17.06	10.26	32.3
1969	123	8.43	20.01	20.21	14.42	17.06	10.3	32.56
1970	124	8.49	20.25	20.37	14.33	17.04	10.34	32.53
1971	125	8.54	20.47	20.57	14.39	16.98	10.37	32.8
1972	125	8.58	20.66	20.77	14.46	16.92	10.4	33.07
1973	126	8.62	20.88	20.96	14.56	16.85	10.43	33.36
1974	127	8.68	21.03	21.16	14.69	16.79	10.48	33.69
1975	127	8.72	21.25	21.35	14.8	16.77	10.54	34.02
1976	128	8.76	21.45	21.56	14.92	16.75	10.60	34.36
1977	129	8.8	21.66	21.72	15.03	16.73	10.65	34.7
1978	129	8.8	21.85	21.91	15.13	16.72	10.68	35.01
1979	130	8.8*	22.07*	22.11*	15.21*	16.71*	10.70*	35.23*
1980	131	8.8*	22.43*	22.52*	15.23*	16.70*	10.72*	35.42*
Population growth rate - %								
	.7	0.5	1.0	1.0	0.7	-.02	0.4	0.9

\*estimated.

Source: U.N.

Table 4

Eastern Bloc: Consumption of Sheepmeat per Capita and all  
Meat, per Capita (in brackets)

Kg

	1960	1965	1970	1975	1980
Bulgaria	(25) 5.9	(32) 8.7	(38) 8.9	(50) 7.4	(54) 6.4
Czechoslovakia	(50) .8	(61) .6	(71) .8	(65) .3	(69) .5
Poland	(40) .9	(51) .7	(57) .7	(79) .7	(71) .5
Rumania	(23) 3.2	(39) 3.2	(46) 2.8	(11) 3.4	(23) 4
G.D.R.	(50) 1.3	(57) 1.3	(63) 1.3	(77) .8	(86) 0.9
Hungary	(40) 0.8	(47) .9	(50) .9	(66) .3	(71) .4
Yugoslavia	(23) 2.8	(29) 2.2	(38) 2.0	(46) 2.5	(54) 2.8
Average	3.3	3.3	3.3	3.3	3.3

Source: CMEA

ation (Littman, 1978). Also, home slaughtering is still widespread, which makes data collection difficult.

Communal slaughtering is increasing however, as State purchasing and selling grows.

Throughout the region, pork is the main-stay of the diet accounting for 37 - 67% of consumption: sheepmeat consumption is lower than that of beef and pork in all the countries at only 3.3 kg per capita on average.

There is considerable variation in mutton, lamb and goat meat consumption levels between the countries, with the main producing countries Bulgaria, Rumania and Yugoslavia having the highest levels (6.8 kg, 3.5 kg and 2.6 kg respectively). As Table 4 shows, there has been little change over the period, but declining levels in the north have been offset by increasing levels in the three southern countries.

Total consumption (Table 5) has varied over the period between 149 - 187 Kt.

The lack of data on important economic variables, such as prices, and actual consumption levels for several of the countries, make it difficult to assess future demand, other than by extrapolating trends (see Sprott and Hearn, 1974, for a discussion of the problems). Estimates made by FAO in 1969 and 1976 of income elasticities of demand for sheepmeat are given in Table 6. These range from 0.0 to 0.8 : the countries which have the highest income levels have the lowest demand elasticities, and demand in all the low-income countries is becoming more responsive to income levels over time. The average income elasticity has increased from 0.29 in 1969, to 0.54 in 1976.

Given a population growth of 0.7%, FAO (1979) project

Table 5

## Eastern Europe: Total Consumption of Sheepmeats

Year	<sup>1, 2</sup> Total	Bulgaria	Rumania	Yugo- slavia	Czecho- slovakia	G.D.R.	Hungary	Poland
1961	148.7	48.3	57	43	10	9	8.9	29.5
1962	169.3	57.8	57	51.3	12.4	10	9.3	28.3
1963	148.7	56	57	41	8.3	10	8.1	25.3
1964	155.8	68.7	57	37.2	9.2	11	6.6	23.0
1965	176.8	73.7	61	39.7	7.6	15.5	10.5	23.8
1966	179	82.9	61	41	6.7	15.1	9.3	24.1
1967	185.7	85.9	61	45.4	6.9	11.7	10.3	25.6
1968	186.8	83.2	61	50.3	6.9	10.6	8.4	27.3
1969	181	82.2	61	46.8	7.6	11.8	6.5	26.2
1970	177.6	81.4	56	44.2	8.5	10.6	6.2	26.8
1971	180.8	85.7	56	48.8	9.2	10.3	3.7	23.2
1972	176.5	83.2	56	46	8.5	11	3.2	24.6
1973	173.8	83.2	56	44.1	8.2	11.4	2.4	24.5
1974	172.4	77.7	56	48	7.8	12.7	3	23.2
1975	162.1	64.2	72	52	7.5	13.9	2.9	21.6
1976	177.8	72.8	72	55	6.9	20	4.3	18.8
1977	168.4	68.2	72	52	6.9	18	5.2	18.2
1978	164.3	60	88	58	7.9	14	4.7	19.8
1979	166.8	58	58	59	8.1	15	4.9	21.8
1980	165	57.5	88	59	8.2	15	4.2	21.1

Source: USDA

<sup>1</sup> Excludes Rumania.<sup>2</sup> FAO forecast for 1985: 230 - 240 kg (Includes Rumania)

Table 6  
Income Elasticity of Demand for Sheepmeat

	Year	
	1969	1976
Czechoslovakia	0	0
G.D.R.	0	0
Poland	0	.5
Bulgaria	.4	.8
Yugoslavia	.5	.7
Rumania	.5	.8
Hungary	.6	.8

Source: FAO, 1976.

total consumption of sheepmeat in Eastern Europe at 230-240 Kt in 1985. This is consistent with estimates made by CEC (1978), but is much lower than Official Plans of the Eastern Bloc countries.

#### 2.4 Trade

As the countries of the Eastern Bloc are members of the CMEA, most trade is carried on between themselves and with the other main members, the U.S.S.R. and Mongolia. Trade with non-members takes place only after internal supplies have been allocated to deficit countries. Beyond this, there is no overall external trade policy. However,

Governments exercise control over trade in that they regulate supply, consumption and prices, the residual then being available for export. In fact, external trade is under State monopoly, conducted by specialized State Foreign Trading companies. General agreements are made amongst them for co-ordination of 5 year plans, external trade, prices, and prices on the domestic markets are completely independent. National currencies are not convertible and thus trade must be settled bi-laterally, or paid for in hard currency. For political and economic motives therefore (e.g. shortage of foreign currency), self-sufficiency is encouraged as the main objective in the agricultural sector. Recently, with growing awareness of the need to earn foreign currency, exports of livestock products have expanded.

Trade in sheepmeat is relatively small, accounting for only 3% by volume of the region's meat exports. Net exports from the Eastern Bloc have fluctuated around 20 Kt (Table 7) but grew substantially in the late 1970's. It is difficult to tell how much of this is 'new' trade, and how much is the result of improved methods of recording international flows. Undoubtedly another important consideration is the move from exporting live animals towards sheepmeats, as refrigeration and handling facilities improve. Czechoslovakia, Yugoslavia and Poland are virtually self-sufficient in sheepmeat, importing small amounts from other Eastern Bloc countries in times of domestic shortages. Bulgaria, Rumania, Yugoslavia and

Table 7  
Eastern Bloc: Sheepmeat Trade<sup>2</sup> (Kt)

	Net <sup>1</sup> Exports	Bulgaria	Rumania	Yugo- slavia	Czecho- slovakia	G.D.R.	Hungary	Poland
1960	4.5	.5	-	-	-	-	-	-
1961	4.1	.5	-	3	(1.0)	-	1.2	.4
1962	0	.4	-	2.7	(4.4)	-	.8	.3
1963	2.9	.3	-	4.1	(2.3)	-	.6	.2
1964	0	(0.8)	-	4.8	(4.2)	-	(0.3)	.1
1965	1.2	.2	-	4.3	(0.8)	-	(1.6)	(0.8)
1966	4.0	.8	-	5	(1.1)	-	(0.2)	(0.6)
1967	0.9	.1	-	4.6	(1.2)	-	(1.9)	(0.7)
1968	6.9	5.0	-	4.7	(1.4)	-	(0.8)	(0.7)
1969	8.4	4.4	(5.0)	4.3	(1.3)	-	1.0	0
1970	1.7	.6	(7.0)	3	(1.0)	(8.6)	0	(0.8)
1971	3.9	2.5	(15.0)	1.3	(1.5)	(5.6)	1.7	
1972	8.7	4.4	(15.)	3	(0.9)	(5.3)	2.4	-
1973	10.4	3.6	(7.2)	2.9	(0.7)	(4.6)	4.6	-
1974	12.2	9.1	(7.0)	.9	(1.0)	(2.5)	3.3	-
1975	20.5	14.5	4.6	3.3	(0.8)	(2.3)	3.7	-
1976	22.4	15.4	(8.2)	3.3	(0.9)	(2.1)	4.3	-
1977	23.6	14.2	6.0 <sup>3</sup>	3.6	(0.9)	(2.1)	4.9	-
1978	25.6	16.5	6.0 <sup>3</sup>	3.6	(0.9)	(3.0) <sup>3</sup>	4.9	-
1979	26.9	18.2	6.0 <sup>3</sup>	3.0	(1.0)	(2.1) <sup>3</sup>	5.5	-
1980	27.5	18.5	6.0 <sup>3</sup>	3.1	(1.9)	(2.0) <sup>3</sup>	5.9	-

Source: USDA, FAO.

<sup>1</sup> Individual country trade may not sum to total, as different sources of data

<sup>2</sup> Figures in brackets are net imports

<sup>3</sup> Estimated

Hungary are the main exporters, with the first two accounting for most of the increase in trade.

The largest proportion of the Eastern Bloc's sheepmeat exports go to the E.E.C. - with Italy the main market: France is also an importer, but the importance of the U.K. has declined (Agra Europe, No. 963). The Eastern Bloc supplies 19 - 25 Kt to the E.E.C., which is 8% of E.E.C. sheepmeat imports, though trade was considerably greater in 1980, at 31.3 Kt, or almost 13% of E.E.C. imports.

Table 8

Eastern Bloc: Exports of Sheepmeat to the E.E.C. (Kt)

	1973	1974	1975	1976	1977	1978	1979	1980
Hungary	10.1	8.5	8.6	8.6	8	6.8	1.7	13
Bulgaria	5.7	3.6	4.1	2.1	.8	2.4	2.1	3.2
Poland	1.4	1.9	3.3	3.6	4.2	4.8	.02	7.2
Yugoslavia	2.5	2.4	3.1	3.2	3.6	3.8	3.0	2.9
G.D.R.	1.6	1.9	2.2	2.4	2.3	3.6	.01	5.0
Rumania	3.1	1.5	.9	.2	.2	.4	.1	n/a
Total Eastern Bloc	24.4	19.8	22.2	20	19.6	22.5	6.93	31.3
As a proportion of total E.E.C. imports	7.7%	8%	7.5%	7.3%	7.3%	8%	2.7%	12.8%
Total E.E.C. Imports	313.6	246	295.9	273.5	268.2	281.3	251.0	243.3

n/a - Not available.

Source: EUROSTAT.

Table 8 shows this trade since 1973. Hungary and Bulgaria have had a large but declining share of the market, and Poland, the G.D.R. and Yugoslavia have expanded their share.

The decline in carcass meat trade in the first two has, however, been accompanied by an increase in live trade; in carcass weight equivalent, live trade was 60 Kt in 1979, or 20% of E.E.C. imports of sheep and sheepmeats.

At the end of 1980 the E.E.C. introduced a Common Policy on Sheepmeats in order to harmonise the internal market (Blyth, 1980). The Regime necessitated Voluntary Restraint Agreements (VRA's) being negotiated with exporting countries, to limit the volume of trade. Table 9 sets out the allowances determined for the Eastern Bloc countries, in return for a reduction in the import tariff from 20% to 10%.

Table 9

## E.E.C. Import Agreements in the Sheep and Goat Meat Sector

Annual quantities agreed as at January 1, 1981 (Kt Carcass Weight)	Live Animals	Meat	Total
Bulgaria	2.0	1.25 <sup>1</sup>	3.25
Czechoslovakia	-	.80 <sup>1</sup>	.80
Hungary	10.05	1.15 <sup>1</sup>	11.20
Poland	5.80	.20 <sup>1</sup>	6.00
Rumania	.475	.075 <sup>2</sup>	.55
Yugoslavia	.20	4.80 <sup>1</sup>	5.00
Total			26.80

<sup>1</sup> Fresh and Chilled MeatSource: Agra Europe  
No. 936<sup>2</sup> Frozen Meat

The VRA allowances are similar to traditional import levels during the 1970's, though in some cases limited growth components were built-in to allow for expansion of the fresh meat trade as live sheep sales decline.

Trade in sheepmeat in the Eastern Bloc tends to be overshadowed by trade in live sheep. The majority come from Hungary, Bulgaria and Rumania (Table 10) with the latter dominating trade. Again, much of the trade is intra-regional, but since 1969 annual net exports of sheep from the Eastern Bloc have been over 3 million. Of this, approximately 1 million are imported by the U.S.S.R., leaving 2 million for trade with non-communist countries. In the past much of the residual has been purchased by Italy; but these developed markets are becoming saturated with domestic supplies and imports from Oceania. Recently, exports to the Middle East have grown, particularly from Hungary and Rumania (Moir and Sheales, 1979), which have the advantage of proximity to the markets.

How far the Eastern Bloc countries develop these markets depends on demand from other CMEA countries and supplies available for trading.

Despite the growth in demand for meat, the outlook for sheepmeat consumption is that it is not likely to grow as rapidly as supply. So given the individual countries' objectives of greater self-sufficiency, net exports will increase from the existing surplus countries - Hungary, Bulgaria and Rumania.

FAO (1979) predictions for trade in 1985 are con-

Table 10

Eastern Bloc: Exports of Live Sheep: ('000 Head)

	Hungary	Rumania	Bulgaria	Yugoslavia	Net Exports <sup>1</sup>
1965	341	48	764	72	946
1966	498	31	1,005	134	
1967	521	50	869	211	1,849
1968	620	179	999	333	
1969	936	356	904	236	
1970	1,008	833	927	131	2,893
1971	1,205	966	838	206	
1972	985	1,090	944	66	
1973	905	1,248	797	2	3,011
1974	855	1,298	462	40	
1975	879	1,370	874	235	3,008
1976	719	1,450	723	322	3,024
1977	822	1,573	722	n/a	3,577
1978	703	1,000	1,050	n/a	3,278
1979	850 <sup>2</sup>	1,400 <sup>2</sup>	1,050 <sup>2</sup>	n/a	3,300 <sup>2</sup>
1980	n/a	n/a	n/a	n/a	n/a

Source: FAO

<sup>1</sup> Net exports of live sheep from the Eastern Bloc: average of 2 - 3 years. Excludes intra-regional trade.

<sup>2</sup> Estimated

n/a - not available.

sistent with the above scenario, implying a rapid increase in exports from the current level of 82 Kt (including live trade) to between 110 - 120 Kt.

The need for foreign exchange, and the attraction of high prices in the E.E.C. and Middle East have encouraged development of the sheep farming sector. Herd-building has been facilitated by imports of sheep for

breeding in the late 1970's, so greater supplies of sheepmeat should be available in the 1980's. Some of this supply could be absorbed in intra-regional trade (where output of sheepmeat is less than planned) but an increasing proportion is likely to enter world trade. Such an increase in trade as was projected by 1985 (of over 40%) would pose a serious threat for traditional exporters. The main competition would be in world markets outside the E.E.C., since trade with the Community is limited by the VRA's.



### 3. U.S.S.R.

#### 3.1 Production

The U.S.S.R. has the world's largest stock of sheep. Total sheep and goat numbers are 149 million, of which 144 million are sheep, and a declining number (5.5 m) are goats, as shown in Table 11. The Soviet Union has a fairly constant proportion of world sheep numbers, varying between 13 - 14%.

There has been an upward trend in sheep numbers, with three major falls in 1961-2, 1963-5 and 1969-70 and a slight decrease in 1976-7. The earlier fluctuations in stocks (due to heavy slaughterings during adverse seasonal conditions, which also increased natural deaths and diminished production) are lessening and giving way to a continuous, upward trend.

Major efforts have been made to raise productivity, so although slaughterings have fallen almost 30% since the 1960's, sheepmeat production has declined only 13% (Table 11). Though productivity is still considerably lower than many countries, such as Australia and New Zealand, total output is still the largest in the world, having declined from 1,045 Kt in 1962 to 855 Kt in 1980.

Sheepmeat has fallen, as a percentage of total meat production - but this is due to a more rapid increase in production of the latter. That is, production of sheepmeat has stagnated, whereas production of all meats

Table 11  
U.S.S.R.: Production Statistics

	Numbers of:			Production (Kt)		Sheepmeat as % of all meat
	Goats ( )	Sheep million head	Total ( )	Sheepmeat	All Meat	
1960	7.8	136.0	143.8	968.1	8,295	11.6
1961	7.3	133.0	140.3	950	8,248	11.5
1962	7.0	137.4	144.4	1,045	8,962	11.6
1963	6.7	139.7	146.4	1,045	9,508	10.9
1964	5.6	133.9	139.5	1,045	8,361	12.4
1965	5.4	125.2	130.6	962.4	9,517	10.1
1966	5.5	129.7	135.2	886.4	10,704	8.2
1967	5.5	135.4	140.9	976.6	11,575	8.4
1968	5.5	138.4	143.9	977.6	11,648	8.3
1969	5.5	140.5	146.0	920.6	11,770	7.8
1970	5.1	130.6	135.7	951.9	12,278	7.7
1971	5.3	138.0	143.3	946.2	13,272	7.1
1972	5.4	139.9	145.5	876.9	13,633	6.4
1973	5.6	139.0	144.6	906.3	13,572	6.6
1974	5.9	142.6	148.5	925.3	14,620	6.3
1975	5.9	145.3	151.2	926.3	14,968	6.3
1976	5.6	141.4	147.0	840.8	13,583	6.6
1977	5.5	139.8	145.3	849.3	14,692	6.2
1978	5.6	140.9	146.5	875.0	15,240	5.9
1979	5.5	142.6	148.1	855	15,500	5.5
1980	5.5 <sup>1</sup>	143.6 <sup>1</sup>	149.1 <sup>1</sup>	860 <sup>1</sup>	n/a	n/a

Source: USDA

<sup>1</sup> Estimated

n/a not available

has risen over 90%.

The two main factors which apparently have affected sheepmeat production levels in the past have been

(i) Political, and

(ii) Climatic.

- (i) The structure of farms, determined by the political leaders, has affected output greatly. The system of State and collective farms has depressed output at times, as Laird (1978) concludes from the history of production since the 1930's. Between 1928-33, the peasants reacted to State policy by slaughtering their livestock. The sheep population declined 67%, from 114 million to 37 million (even the effect of World War II was not as devastating; sheep numbers declined only 24% from 91.6 to 70 million between 1941-46). A feature of the current system is that the private plots (only 2% of agricultural land) have 21% of the country's sheep.
- (ii) Climatic conditions have had widespread effects on sheepmeat production, through the effect on pasture growth, lambing rates, etc., as the weather in the U.S.S.R. varies between the extremes. An indirect effect has been on crops, and the resulting availability of grain for feeding other livestock. In times of poor harvests there has been pressure for higher output from the sheep sector, to avoid the importing of feed grains.

A similar effect was seen in 1980, following the poor harvests and the U.S. embargo on grain trade: domestic production rose slightly as a result of high slaughter rates, but is therefore likely to fall in subsequent years. The outlook for domestic production, from current trends in sheep numbers, appears to be fairly stable (OECD, 1979). Despite the emphasis on breeding programmes and higher procurement prices, (procurement prices for sheepmeats rose 11% in 1979, though these were not accompanied by increases in retail prices) the 60% increase which Brezhnev planned between 1974-90 is unlikely to occur.

### 3.2 Consumption

Although meat consumption in the Soviet Union has grown considerably since 1960, it is still relatively low with a per capita consumption of around 60 kg (Table 12).

This figure is not representative of the whole country and there are considerable deviations regionally, with levels varying from 20 - 80 kg. Apart from traditional differences in taste, the main reason for the differences is that the individual regions are virtually self-sufficient. Balancing of supplies is only practised for large cities. With increasing amounts of meat produced in the private sector, a considerable part of the Soviet population supplies itself with its own meat: even so, it is estimated that 20 - 25% of the current purchasing

demand for meat is not met (CEC, 1978). Demand for all types of meat is expected to grow at a rate of 3% per annum during the 1980's, slightly lower than the actual average growth in meat production over the last decade. This expected level of demand will only be realised to the extent to which availability of meat increases.

Consumption of sheepmeat is similar to other western countries at around 4 kg per annum (Table 12). Though the level is stable, it is declining relative to total meat consumption as more beef and pork are being eaten. Mutton consumption is limited by the slow progress in sheep production.

The rate of population growth is low in the Soviet Union at 1.2% per annum. Total sheepmeat consumption has therefore changed little since 1960 and fluctuates between 800 - 1,000 Kt (Table 12). However, the large size of the population of 250 million (Table 12) offers scope for expansion of total consumption given only a small increase in per capita demand. Russian people generally have no inhibitions or prohibitions about eating sheepmeat. So, provided their incomes continue to rise, and sufficient mutton and lamb were available, the 'taste' factor would accordingly lead to an increase in consumption.

Indeed, incomes are likely to grow rapidly (in view of the low population growth) if the actual and planned annual GNP growth rate of 6.5% continues.

Little data are available on prices and incomes, but estimates made by Spratt (1974) suggest a high

Table 12  
U.S.S.R.: Consumption Statistics

	Population (million)	Per Capita (kg)		Sheepmeat as % of all meat	Total (Kt)	
		All meat	Sheepmeat		All meat	Sheepmeat
1961	218.1	28.5	4.3	15.4	6,225	950
1962	221.7	31.2	4.7	15.2	6,903	1,050
1963	225.0	32.5	4.6	14.3	7,314	1,045
1964	228.1	28.0	4.6	16.4	6,407	1,050
1965	231.8	33.4	4.1	12.4	7,754	964
1966	233.5	34.6	3.8	10.9	8,095	886
1967	235.9	36.7	4.1	11.3	8,657	976
1968	238.3	37.0	4.0	11.0	8,830	977
1969	240.5	36.9	3.8	10.3	8,895	920
1970	242.7	37.8	4.3	10.6	9,190	980
1971	245.0	40.3	4.3	8.6	9,877	1,009
1972	247.4	40.5	4.0	7.7	10,032	998
1973	249.7	39.8	3.8	7.1	9,936	944
1974	252.0	44.1	4.0	7.2	11,116	1,020
1975	255.0	44.6	4.1	7.2	11,378	1,003
1976	256.6	40.0	3.5	7.8	10,282	902
1977	258.9	43.2	3.8	7.0	11,182	934
1978	261.5	43.0	3.6	6.9	11,266	903
1979	263.0*	42.3	3.7	6.2	11,254	941
1980	264.5*	42.3*	4.0*	6.9*	11,207*	955*

Source: USDA; UN

\* Estimated

demand response for all protein foods as incomes rise. FAO (1974) estimate the income elasticity of demand for all meats to be 0.49 in the Soviet Union (a 10% rise in incomes would lead to a 4.9% increase in meat demand). This is high, compared to an elasticity of 0.25 in Australia and the U.K. Spratt (1974) implies that an elasticity of 0.49 also applies to sheepmeat demand. In fact, it may be higher than this (because of diminishing marginal consumption) as in other countries.

Recent FAO projections (1979) for 1985 give an increase in total sheepmeat consumption to 1,080 - 1,090 Kt, caused by the growing population, with no change in per capita consumption levels.

Government policy towards consumption has changed recently: in the past resources were allocated to heavy industry and defence. There is no reduction in spending on armaments, but there is evidence of greater allocations to consumer goods and improved living standards.

Greater stability in supplies has been provided for by permitting imports in times of short-falls in domestic production; previously, consumption was purposely kept low by restricting imports. Consumer prices are now subsidised heavily to maintain consumption, but give higher returns to producers.

Lastly, there is the complex question of substitutes for sheepmeat; these could be fish, vegetable proteins or increased grain-fed meat. It is unlikely that these would meet the same requirements the Russians

have for imported mutton (Moir and Sheales, 1979). This is difficult to assess more precisely, as the Soviet economic system doesn't allow the consumer to express his preference through normal market mechanisms. It can be said though, that the demand is still mainly for a "bulk" meat such as mutton, rather than a luxury product, like lamb.

### 3.3 Trade

Imports of sheepmeat, even at the recent higher levels, play a minor part in U.S.S.R. meat consumption. Figure 1 shows how closely linked are supply and demand. With production of over 1,000 Kt, imports rarely exceed 5% of consumption. However, for trading partners, this demand can have a significant effect on the world market.

The sporadic shipments of Australian and New Zealand mutton to the Soviet Union during the past decade have usually only occurred as a result of shortfalls in domestic meat production : shortfalls, as discussed above, appear to coincide with periods of herd re-building after droughts or price changes led to slaughtering of breeding ewes.

Data on imports are given in Table 13. A comparison of Table 1 with 3 shows that the pattern of imports is closely linked to the pattern of meat production.

Though purchases have expanded since 1974, the pattern so far indicates no long term trend in importing on a continuous basis. For some time the U.S.S.R. was something of a "bargain basement hunter" with respect to

Figure 1

U.S.S.R.: Sheepmeat Market Trends 1960-80



Table 13

## U.S.S.R.: Sheepmeat Import Statistics

	Total*	New Zealand	Australia	Total New Zealand + Australia	Other	Australia + New Zealand % Total
1960 - 69	Negligible.					
1970	28,600	7,238	13,000	20,238	8,400	71
1971	63,700	16,684	32,100	48,784	15,000	76
1972	21,000	-	7,970	7,970	14,000	38
1973	38,000	-	-	-	38,000	0
1974	95,000	20,062	-	20,062	75,000	21
1975	77,200	30,836	-	30,836	46,000	40
1976	62,000	27,659	2,200	29,859	32,000	48
1977	85,000	58,889	15,800	74,700	11,300	88
1978	28,000	16,564	1,104	17,668	10,332	53
1979	n/a	54,226	36,110	90,336	n/a	n/a
1980	n/a	61,877	86,615	148,492	n/a	n/a

Source: USDA

n/a not available

\* Estimated from known imports from New Zealand and Australia, and approximately 1 million live sheep, (on the assumption that these are for fattening or direct slaughter - not breeding). Total imports also verified from consumption minus domestic production.

meat imports, purchasing bulk meats to fill the protein gap.

Recent purchases of mutton at higher prices suggest a recognition of both the need to compete in the world market, and the need to satisfy consumer demand. How-

ever, imports of mutton are rising faster than beef imports which suggests that the protein deficit is increasing more quickly than incomes (given that beef is for a more sophisticated market in terms of boneless cuts and manufacturing). It is unlikely that the Russians would continue purchasing mutton in any quantity if there was another phase of high meat prices. This is partly due to serious balance of payment problems, with a shortage of "hard" currency, and a growing financial indebtedness to western trading countries.

The rest of U.S.S.R. sheepmeat imports is from other Eastern European countries. Though "Comecon" has no common trade policy, the close political ties and general shortage of convertible foreign exchange favour trade within the group. Actual trade with Comecon countries may exceed the quantities given in Table 13, due to unrecorded transactions. Information on total sheep trade is not available, but it is known that trade in sheepmeat is overshadowed by trade in live sheep. Over one million sheep are imported annually into Russia, from Rumania, Bulgaria and Hungary and Mongolia, though this is only about 73% of the numbers imported during the 1960's.

If sheep production continues to expand in these countries (particularly Rumania) import demand in the U.S.S.R. could be satisfied within the group (see Section 2.3). Relatively high consumption growth in some other countries (e.g. Czechoslovakia, G.D.R.) though will mean greater competition for available supplies.

### 3.4 Implications for Exporters

Table 14 shows the importance of the Soviet market for New Zealand and Australia. As a proportion of total mutton exports, purchases by the U.S.S.R. have been more significant for New Zealand than for Australia, taking over 60% of mutton exports in 1980.

The variation in Australian and New Zealand imports taken together, as a percentage of total imports into the U.S.S.R., suggests that the two countries are not competing as suppliers (Table 14). The quality of meat Russia buys - low grade mutton - is generally a by-product of lamb and wool output, and is in limited supply : hence, a diversion of trade between New Zealand and Australia would have little effect on the quantities which either exporter sold on the world market, but may affect the price (White, 1976).

In conclusion, it is difficult to make any forecasts as to future trade prospects, given the inherent unpredictability of sheep meat supply and of the whole agricultural industry (due to weather conditions and political uncertainty). Prospects for exports of mutton to the U.S.S.R. suggest that trade will tend to be restricted still to isolated years following poor grain harvests providing a sizeable but erratic market for some years to come.

Table 14  
Exports to U.S.S.R. of Mutton as %  
Total Mutton Exports of Country

	New Zealand	Australia
	%	%
1970	7	9.6
1971	14.7	17.8
1972	-	4.4
1973	-	-
1974	18.1	-
1975	40.5	-
1976	13	1.3
1977	55.9	9.5
1978	26.5	0.8
1979	46.8	26.6
1980	61.8	46.5

Source: ABS, NZMPB.

Table 15

## Mongolia: Production and Export Statistics

	Sheep* Numbers (millions)	Sheepmeat* Production (Kt)	Exports*	
			Sheepmeat (Kt)	Live Animals ( '000 head)
1969	14.6	108	11.4	945
1970	14.2	91	15.5	945
1971	14.0	88	18.2	1,017
1972	13.4	72	19.5	1,165
1973	13.7	71	19.8	1,198
1974	14.1	83	26.1	1,209
1975	14.5	100	27.7	1,010
1976	14.4	99	32.1	856
1977	13.9	72	21.3	465
1978	13.4	78*	25.0	430
1979	14.1	80*	21.5	448
1980	15.0*	94*	23.0*	n/a

Source: FAO

\* Estimated

n/a - not available.

(1975). This high level can be explained by the pattern of the diet; meat, particularly mutton, is frequently eaten at all three meals of the day. The majority of meat eaten is from sheep and goats, which have been reared and slaughtered locally, by private animal keepers and on

collective farms. Together these possess more than 95% of the total number of animals. Probably less than 25% of meat produced would be handled on a commercial basis, though the facilities for handling meat are being established, with help from the East European countries (CEC, 1978).

Sheepmeat consumption has fallen slightly since the early 1960's, but now seems fairly stable. This earlier decline has been offset by a rapid growth in population, of 3% per annum, to over 1.5 million. Total consumption has therefore changed little. Nevertheless there appear to be definite changes taking place in the style of life, and nature of food consumption of the predominantly rural population.

For many years Mongolia has exported its surplus meat and live animals. In fact, meat exports constitute the most important item in the balance of external trade. Meat exports have continuously risen in past years, with sheepmeat again comprising the major part. The chief recipient of sheepmeat has been, and should continue to be, the Soviet Union. The remainder is sold to other East European countries. Exports have risen from around 6 Kt in 1960 to over 30 Kt in the late 1970's (Table 14).

As in other East European countries, carcass meat trade has been overshadowed by trade in live sheep. Again, the U.S.S.R. is virtually the sole recipient of the 0.8 - 1.5 million sheep being exported annually.

The conclusion to be drawn from the above is that

the potential exists for a sizeable increase in output. The potential is not likely to be realised in the short or medium term though, and any expansion in production and exports will probably be absorbed by other East European countries.

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