.

Medium Term Projections and Selected Issues for Meat Markets

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Introduction

Over the last three decades, the world's meat markets have undergone significant, some have even called them revolutionary, changes. Dynamic change and growth through technical advances and industry restructuring have characterized the meat industry. At the same time, consumer preference in developed countries for meat products is altering due to lifestyle changes, safety concerns, health perceptions, and other consumer concerns.

Total meat consumption per capita in OECD countries, excluding Japan and Korea, amounted to 70 kg in 1970. Throughout the 1970s and into the first half of the 1980s, meat demand remained strong overall and per capita consumption continued to rise, growing by 13 kg from 1970 to reach 83 kg in 1985. As meat consumption levels increased, life styles changed and diets became more diversified, income elasticities of meat demand have declined in OECD countries. They now typically range from more than 1 in some Asian countries to less than 0.5 in many OECD countries. This implies that as income levels continued to rise, so did per capita meat consumption, all be it at a slower rate. Between 1985 and 2000, meat consumption per head in traditional meat consuming countries in the OECD rose by 7 kg, when compared to 13 kg in the previous 15 years. In total tonnage, the meat market in these countries grew from 50 million tons in 1970 to 68 million tons in 1985 and 85 million tons in 2000. These numbers belie the popular notion that OECD meat markets are saturated; they are highly competitive and often distorted, but in total tonnage terms, there has hardly been a slow down in the rate of growth over the last 30 years.

Looking beyond the traditional meat consuming countries in the OECD, meat markets have grown significantly in those countries where diets were traditionally based on cereals for staple food

[1] The views presented are the author's and do not necessarily reflect those of the OECD or its Member countries.

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consumption. Japan and Korea are examples of this within the OECD region, but the development is much wider spread over most of East and South East Asia. Between 1970 and 2000, Japanese and Korean meat consumers added about 30 kg to their per capita consumption, and those in China nearly 40 kg. Income elasticities in Asian countries are typically much higher than in mature meat markets in the OECD. With rising incomes and continued urbanization, lifestyles are changing in these countries. This is to varying degrees reflected in a 'westernisation' of diets, leading to a substitution of cereals as a major source for calorie intake by protein based products such as meat. The impact of this development on meat demand in these countries is further enhanced by the fact that total calorie consumption levels are still increasing.

Additionally, dramatic changes have occurred in the composition of meat consumption. In the OECD area, excluding the Asian Member countries (Japan and Korea), total meat consumption increased from 70 kg per head of population in 1970 to 90 kg in 2000. But the increase entirely reflected growth in poultry and pigmeat consumption while at the same time, that of beef and sheepmeat fell. Price competitiveness is one of the reasons. On average, beef and sheepmeat are 2 to 3 times more expensive than pigmeat and poultry in the United States. In the European Union, where beef and sheep meat support keeps prices at artificially high levels, these meats are 3 to 4 times more expensive than pork and poultry. But demand for the latter meats have also benefited from larger product versatility and product range, ease of preparation and perceived health benefits. In Asian countries, the picture is slightly different. While the share of poultry and in particular pig meat in total meat consumption is increasing in these countries, per capita consumption of beef is also growing all be it less rapidly than that of the other meats.

Changes in dietary patterns and the resulting shifts in demand as well as the generally high levels of support to meat producers in many OECD countries have resulted in some major changes in trade patterns. In general, trade with non-OECD countries has risen in importance, but this varies by different types of meat. For beef and pork, OECD exports to other OECD countries have grown much more rapidly in tonnage terms than trade with non-OECD countries. Nevertheless, in percentage terms, exports to non-OECD countries have increased from 10% to 20% for beef and from 0% to 35% for pigmeat. The situation is different for poultry, where exports to non-OECD countries have grown more rapidly than trade between

OECD countries both in tons and as a share. In 2000, nearly 70% of all OECD poultry exports went to non-OECD countries. Sheepmeat is the only meat where total OECD exports have stagnated over the last 30 years, but again, non-OECD countries have risen in importance, taking now nearly 50% of OECD exports.

Technological progress, changing demand patterns and government policies have contributed to significant shifts in trade position of several OECD countries. For example, the EU turned from one of the most important world beef importers in 1973 to one of the top exporters 20 years later. Supply incentives from domestic support and the introduction of the milk quota system in 1984, as well as the availability of export subsidies to bring domestic prices down to world market levels explain the change. A process for liberalizing meat markets was also put in motion in Japan and Korea and for both countries, beef imports increased from 35 000 tons in 1970 to 650 000 tons in 1990 and about 1 million tons in 1999. Australia and to a lesser degree New Zealand have benefited from this development, but growing beef demand and improved market access in these countries has triggered in particular a surge in export supplies in the United States, a country which has traditionally been a large beef importer.

A striking evolution has also occurred in the structure of world pigmeat trade. Traditionally, this consisted essentially of bilateral trade flows between European countries and between the United States and Canada. Over time, however, the development of large markets in Asian countries has turned the international pigmeat trade into a much more multilateral activity, with large exports from North American and some European countries to Japan in particular. In the course of the last 30 years, the United States and Canada together have turned from a net importing region of some 200 000 tons in 1970 to a net exporting one of about 700 000 tons in 1999. Over the same period of time, EU net exports rose from 100 000 tons to 1.2 million tons. Again, EU export supplies have been boosted by export subsidies, although domestic policy reform since 1992 has resulted in an increasing share of non subsidized exports.

Compared with the evolution in beef, pork and poultry markets, the developments in global sheep meat markets have been modest. Asian economic and demographic developments have had a much bigger impact on demand for beef, pork and poultry than on that for sheepmeat. In most OECD countries, sheep

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meat consumption levels remain rather marginal and, elimination of support in New Zealand and wool support policy changes in Australia have changed the incentive structure for sheep meat supply in these countries. New Zealand sheepmeat exports have fallen from 425 000 tons in 1988 to 362 000 tons in 1998, reflecting a similar percentage decline in total production of mutton and lamb. Nevertheless, this reduction remains small when compared to the 45% fall in sheep flock numbers over the same period and is indicative of the substantial productivity gains achieved in New Zealand lamb production.

While the volume of New Zealand sheep meat exports has fallen, the export value has risen reflecting a dramatic change in the composition of export produce from frozen carcasses to value added cuts. While 15 years ago, frozen carcasses represented some 90% of total exports, currently this is closer to 15%. This evolution has gone in parallel with a decline in shipments to low value markets such as Korea and Russia while at the same time import prices in the EU have been strengthening and a not insignificant and lucrative market was being developed in the United States. However, recent US constraints on lamb imports may restrain future development of this market.

The next section of the paper describes the process and model used to generate the OECD's baseline projections. It is followed by a discussion on the level of support provided to meat markets in OECD countries. Next, the outlook to the year 2005 is presented, followed by a discussion of a few key issues that will impact future prospects of meat markets. A brief summary concludes the paper.

The baseline process and the model

The baseline and the projections generated by the OECD Secretariat each year is a result combining a model, *Aglink*, and expert opinion. In order to understand the projections that will be presented it is useful to briefly review the process and the model used.

The process

The production of the baseline projections published each year by the Secretariat is an iterative process, combining expert opinion from participating Member Countries and *Aglink* a model developed by the Secretariat in close cooperation with Member Countries.

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Each year, the Secretariat sends a questionnaire to participating Member Countries. The questionnaire replies provide the Secretariat the projections for that country's agricultural markets based on exogenous assumptions on world prices and that country's policies. The replies are used to calibrate each country module so that they are consistent with the questionnaire replies. The modules are linked together in a world model and through trade a consistent set of world prices are generated that balance world and domestic markets.

These results are generally different from those initially provided by the respondents, primarily because the world prices generated by the linked modules are unlike those assumed by the collaborators. Differences are reconciled through bilateral discussions focusing on the calibration of the individual modules. After consultations with participating Members, the projections are discussed in formal meetings with a wider set of experts from Member countries, Observer countries, and international organizations. Following this meeting, further adjustments to the baseline may occur to incorporate additional insights provided by these experts. The baseline is discussed yet again in another formal meeting with yet a different set of experts. However, the experts at this meeting are policy rather than commodity experts providing yet a different perspective to the baseline. Finally, the publication containing the baseline projections is published, usually in late April or early May. The reason for this discussion is to illustrate that the policy analysis that is undertaken with the model and the projections are extensively reviewed and discussed. The resulting outcome is a consensus projection, reflecting the assumptions and parameters embedded in the model and the opinions of a variety of experts. Given the timing of this conference and the baseline cycle, the projections presented here are up to the year 2005. The next set of projections, up to the year 2006, will be published in April 2001. While the projections are useful to evaluate market outcomes over the medium term, they are also very important as a yardstick for the analysis of alternative policy, economic, and market related assumptions.

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The Model

The model used to generate the baseline, *Aglink*, is a dynamic, partial equilibrium model of world agricultural markets, focusing on OECD Member countries and temperate-zone products. It represents annual supply, demand, and prices for the principal agricultural commodities produced, consumed and traded by them. The OECD in close co-operation with Member countries developed it. In addition to generating the baseline, the model is used to assess policy changes and as such it contains extensive policy detail. Behavioural relationships and parameters are evaluated regularly through consultations with experts in Member countries and through scenario and sensitivity analyses.

Aglink consists of complete modules for ten OECD countries/regions -- Australia, Canada, the European Union, Hungary, Japan, Korea, Mexico, New Zealand, Poland, and the United States of America, -- and three non-OECD countries/regions, Argentina, China, and the Rest of World. Other OECD countries, as well as countries of the Former Soviet Union are exogenous, i.e. data for them (for many markets) are included in determining world balances, but demand and supply in these countries do not respond to changing world prices. The rest of world block is further disagreggated for particular markets. For example, for the rice market, several countries important to that market such as Thailand and Indonesia are broken out and treated individually, but only for this market.

Focusing on the representation of the livestock markets, the beef market includes Brazil, Chile, Uruguay, Paraguay, Hong Kong China, Singapore and Chinese Taipei. The beef market is assumed to be a segmented market. There is the foot-and-mouth disease (FMD) free zone in the Pacific, consisting of Australia, Canada, Japan, Korea, Mexico, New Zealand, the United States, Hong Kong, Singapore and Chinese Taipei. The second market includes the MERCOSUR countries, Argentina, Brazil, Chile, Paraguay, and Uruguay. The European Union is a special case in that it interacts with the MERCOSUR market but only to a limited degree due to the EU beef export regime and the differences of EU meat exports in terms of destination and quality. The EU is also recognized as FMD-free, but the Andriessen agreement under the URAA prevents it from using export subsidies on beef trade to Pacific countries. Of course, such a segmentation of the beef market may be called into question as the traditional divisions

become blurred as countries in MERCOSUR attain FMD-free status and there is increased trade from MERCOSUR into the FMD-free zone. Following Uruguay, Argentina and Brazil received International Epizootic Organization (OIE) recognition as FMD-free without vaccination in May 2000, for the entire country in Argentina's case and for two southern States in the case of Brazil. The outbreak of FMD, which occurred there shortly afterwards, did not jeopardize that status. Brazil has set the target of eradicating FMD throughout the country by 2005.

The pigmeat market is also segmented. The North Pacific market (Canada, Japan, Korea, Mexico, US, and Chinese Taipei), the Oceania Market (Australia and New Zealand), and the EU with some trade to East Europe and a portion of exports also making their way to the North Pacific Market.

In a typical country module, the beef market is represented by equations for cattle inventories, production and consumption, each a function of relevant prices, feed costs, income and other exogenous variables. Because of shorter production cycles, pigmeat and poultry markets do not include inventories. Rather, production and consumption are functions of relevant prices, feed costs and exogenous variables. Imports, exports, and stocks are either exogenous, determined by identities, or functions of relevant variables, depending on the country and commodity. The representation of sheepmeat markets is less complete. In all, the model contains some 1 600 equations with more than 3 400 variables.

Evolution in support to meat producers

Producer support estimate

Meat producers in OECD countries benefit from relatively high levels of support. In general, producers of beef and sheep meat are more highly supported than those for pig meat and poultry (Figure 1). From 1986 onwards, when they first were calculated, the average producer support estimate (PSE) for meat in the OECD ranged from 10% to 20% for pigmeat and poultry, around 30% for beef and from 40% to 50% for sheepmeat. While beef and pigmeat support levels have fluctuated without showing any discernible trend over these years, support for poultry and sheepmeat have generally been declining. Poultry support levels in terms of PSE were higher than 20% in 1987 but fell to less than 10% in 1998.

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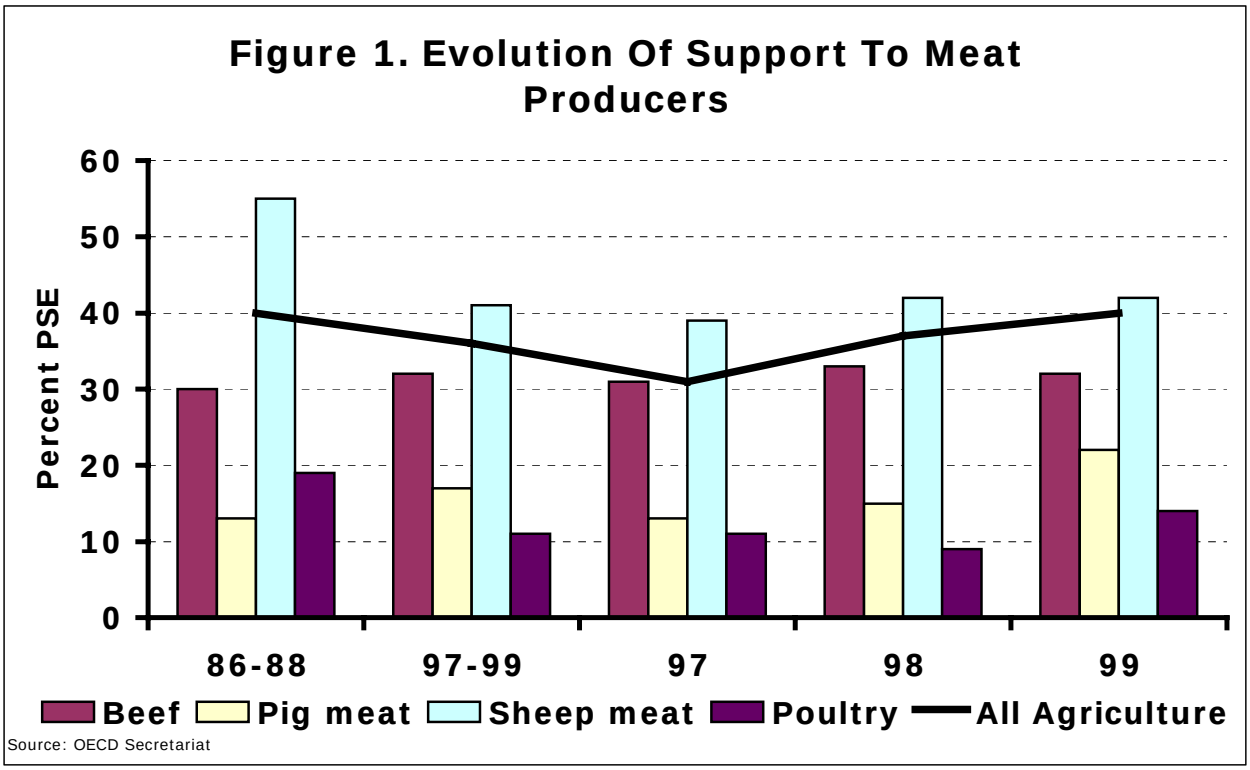
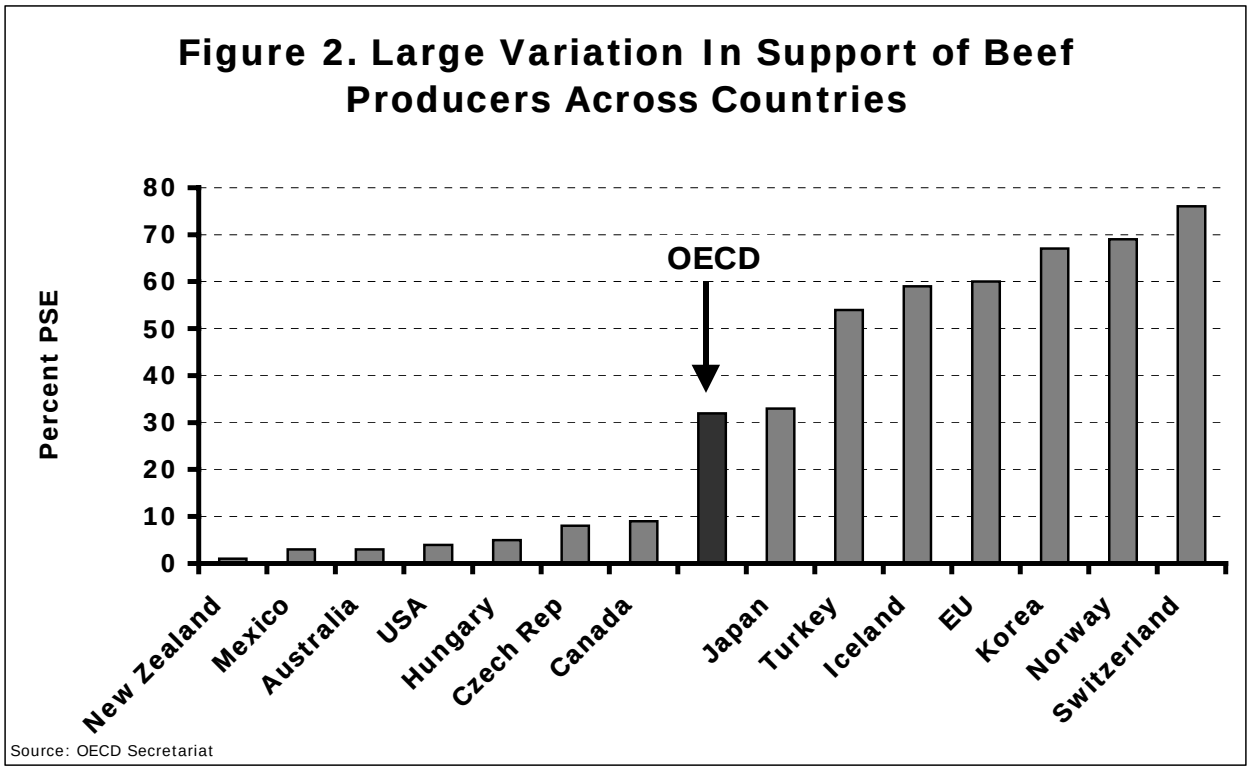
This reflected to a large degree declining market price support in the European Union. The sheepmeat PSE increased from 52% in 1986 to a maximum of 59% in the late 1980s as an almost entire dismantling of support for sheep meat producers in New Zealand was offset by rising support levels in the European Union. But both EU price support and direct payments for sheep have fallen in most recent years, resulting in an overall decline in the OECD PSE for sheep meat.



However, variations in support levels between commodities and across countries are still quite considerable (Figure 2). As measured by the PSE, the highest levels of support are in the EU for beef (60%), poultry (35%) and sheepmeat (54%), while Japan has the highest support level for pigmeat (at 56%) in 1999. Higher support levels can be observed in some smaller OECD countries, but they are outside the scope of this paper. At the other extreme, support levels in New Zealand, Australia and the United States range from 1% to 4% for beef and 2% to 5% for pigmeat. Australia and the United States also have low support levels for poultry (2% to 4%), while sheep meat support is very low in New Zealand and Australia (zero and 3% respectively).



The overall developments in support levels also mask two further substantial changes. First, the composition of support is changing in OECD countries. One of the recommendations for support developed by the OECD is that if support is deemed necessary, it should be well targeted, transparent and provided in a least trade distorting form. This is best achieved through direct payments than through market price support. The principle has been most effectively applied by the European Union where the share of price support in total PSE has fallen between 1986 and 1999 from 85% to 67% for beef and from 70% to about 1% for sheepmeat. This trend is expected to continue with the recent reforms under the Berlin Agreement. This shift toward relatively less distorting direct payments is leading to some market orientated change in the incentive structure for production in the Union.

The second development, masked by overall trends in OECD support for meat producers, is the evolution of support levels over-time which show large differences between countries. The most dramatic change has occurred in New Zealand sheepmeat support. The PSE for sheepmeat in New Zealand was still more than 60% in 1986. But support was sharply reduced in 1987 and subsequent years and completely eliminated since 1993. Support levels for beef and pigmeat were already very low in New Zealand and

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have little changed over time. This contrasts with support for poultry that increased sharply from 34% in 1986 to 58% in 1991, before gradually declining to around 25% in 1998 and 1999. In some of the countries which are candidate for EU accession, meat support levels have also declined, mainly reflecting falling support prices due to the economic reform process since the late 1980s. However, none of these countries have fundamentally abolished government support for livestock products, such as has been the case for sheep producers in New Zealand. The policy framework for support has remained in place, allowing support to rise when governments deem this necessary for whatever reason. Such has happened in Hungary and the Czech Republic in 1998 and 1999 when support levels for pig meat and sheep meat increased sharply following an equally substantial drop in the preceding years. These recent developments suggest that many governments still find it difficult to stay on track with needed reforms in the face of adverse market conditions and strong farm sector pressures. Clearly, much remains to be done to reduce the level of distortions and improve the functioning of international meat markets.

Export subsidies for meat products

The Uruguay Round Agreement on Agriculture (Agreement) provided for the liberalization of agricultural markets among three pillars -- export subsidies, market access and domestic support. On export subsidies, countries agreed to lower them over the 6-year implementation period so that at the end of the period, expenditure levels are 36% and quantity levels are 21% below base period.

Export subsidies of meat products are not very prevalent in the schedules of many OECD countries included in this study. But, for some, the Agreement enables significant amounts of subsidies. For example, Hungary's final limit is 35 000 tons of slaughter pigs, 91 000 tons of pigmeat and 111 000 tons of poultry meat. The US has the right to subsidize 28 000 tons of poultry meat and a few other OECD countries can subsidize small amounts of various meat products.

Based on country notifications to the WTO, most countries have voluntarily eliminated or suspended subsidies for some or even all commodities. Consequently, the use of export subsidies is no longer widespread among OECD members. However, the EU stands as an exception to this. The EU, not

only has the right to subsidize large volumes, it uses them. Approximately 90% of the use of export subsidy expenditures are attributable to the EU. The EU retains the right to subsidize 822 000 tons of beef, 402 000 tons of pigmeat and 290 000 tons of poultry meat.

Market access for meat products

As part of the market access commitments under the 1994 Agreement, countries agreed to prohibit non-tariff barriers (NTBs), to convert existing NTBs to tariffs, to bind[2] and reduce their tariffs, and to provide minimum import opportunities through the establishment of tariff rate quotas (TRQs). This import system established a quota and a two-tier tariff regime for affected commodities. A lower tariff (in-quota) applies to imports within the quota while a higher tariff (out-of-quota) applies to imports exceeding the quota. As of May 2000, 37 countries, including all OECD Member countries other than Turkey, with approximately 1 370 TRQs committed to this system. Within broad product categories, the 247 TRQs for meat products are the second highest after fruits and vegetables.

Data for quotas and tariffs are derived from the Agricultural Market Access Database (AMAD) and are obtained from countries' schedules and notifications submitted to the WTO. AMAD is a co-operative effort among Agriculture and Agri-food Canada, EU Commission-Agriculture Director-General, FAO, OECD, The World Bank, UNCTAD, and the United States Department of Agriculture-Economic Research Service. AMAD includes data on bound tariff volumes, scheduled in-quota, out-of-quota and MFN tariff rates, applied MFN tariff rates, notified imports under the TRQ, TRQ country allocations, import volumes and values, supply and utilisation data, world reference prices, import unit values and primary product equivalent factors. The participating agencies, under co-ordination of the OECD Secretariat, have agreed to continue maintenance and an annual update of the database. AMAD is available free of charge on www.amad.org .

2. By binding their tariffs, countries established ceilings on their tariff schedules and agreed not to raise them above the bound level without negotiating with their trading partners. All agricultural products now have bound rates.

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Countries with TRQ commitments are required to notify the WTO each year the scheduled TRQs for that year and actual in-quota imports. In shifting the analysis to more aggregate product levels, such as used in this report, the HS codes from the TRQ schedules need to be mapped to commodities in the *Aglink* model. This has necessarily included a certain amount of arbitrariness. The OECD countries that are modelled in *Aglink* scheduled 435 TRQs, but after the mapping only 93 remain in our sample. Of these, 19 are for meat (excluding live animals) products. Table 1 lists the countries with meat product TRQs and their scheduled quota for 1997 and 2000. As illustrated in the table, some quotas are scheduled to increase during the implementation period while others are eliminated. The largest increase is in the pigmeat quota, which is 27% greater in 2000 reflecting the almost doubling of EU's quota.

As is evident from the table, the beef TRQ, at over 1 million tons is by far the largest, while current and aspiring EU members have TRQs scheduled in each product category. Korea's pigmeat and poultry TRQs were phased out as planned in 1997, while the beef TRQ is scheduled for elimination in the beginning of 2001. However, effectively the beef TRQ has been a tariff regime since 1998 when scheduled reductions in the out-of-quota tariff rates resulted in their value falling below the in-quota rate.

Table 1. Meat quotas for OECD countries in Aglink

	Quota 1997	Quota 2000
	Metric Tons	
Beef		
Canada	76,409	76,409
EU	164,050	164,050
Hungary	13,595	13,595
Korea	163,800	225,000
Poland	21,852	28,710
USA	676,621	656,621
Total	**1,116,327**	**1,164,385**
Pig meat		
EU	34,700	66,500
Hungary	14,767	19,909
Korea	18,275	n.a.
Poland	35,350	46,480
Total	**103,092**	**132,889**
Poultry		
Canada	44,759	45,432
EU	22,832	29,900
Hungary	8,619	11,425
Korea	6,500	n.a.
Poland	40,543	40,543
USA	20,000	20,000
Total	**143,253**	**147,300**
Sheep meat		
EU	284,625	284,625
Hungary	52	92
Poland	820	1,000
Total	**285,497**	**285,717**

n.a.: not applicable because phased out

Source: Author's calculations from AMAD

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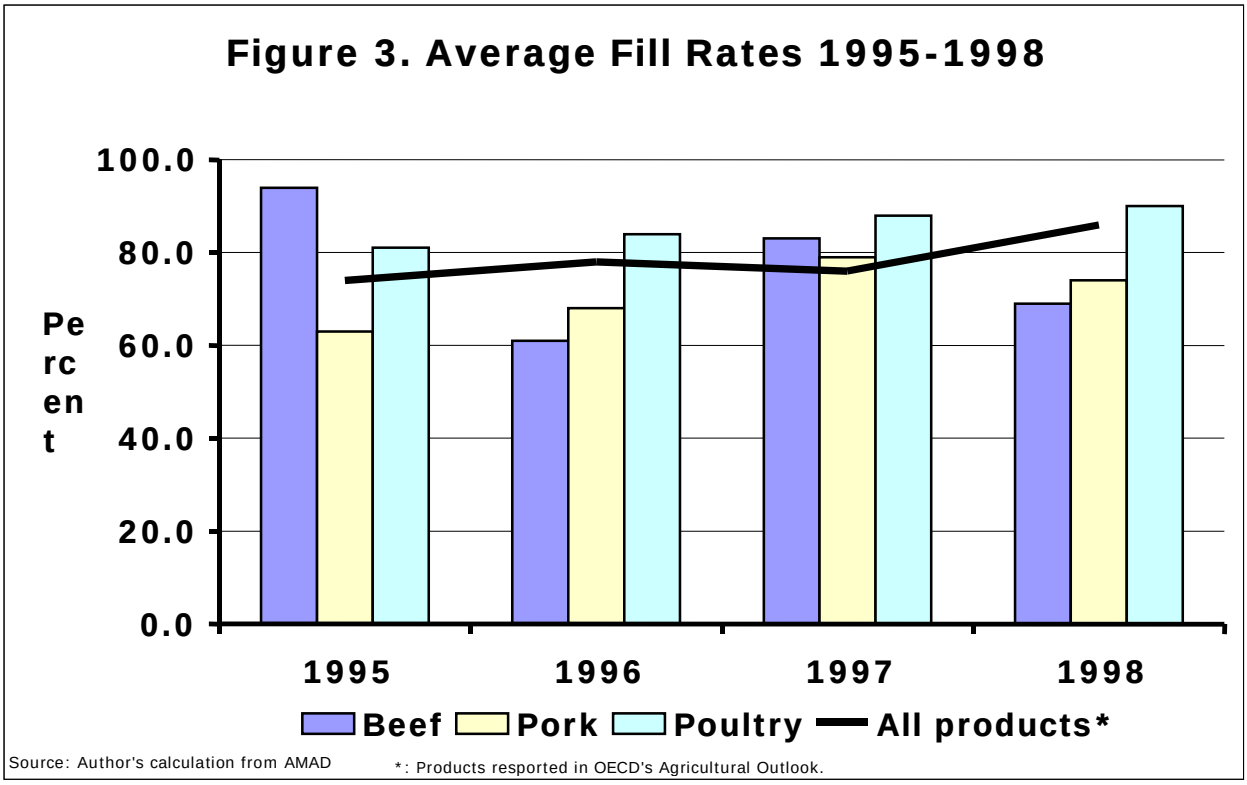
Quota fill rates

Although quotas are not an obligation to import, an indicator, albeit an imperfect one, of developments in market access is the fill-rate, the ratio of notified imports under the TRQ regime to the scheduled quota. Data from AMAD were used to calculate the fill rates of the relevant products and countries. These are shown in Figure 3.



The data suggest that the average fill rate for all products in the sample is less than 100%. This result is consistent with WTO's finding of less than 100% fill rate for all TRQs even though the calculation method is different. Whereas the WTO truncates the fill rate distribution at 100%, our calculations allow the fill rate to exceed it. Poultry has the highest fill rate among meat products with a four-year average (at 88%) that is greater than the average for all products (78%), while the fill rate for pigmeat is the lowest among the meat products (at 70%). The fill rate for beef seems the most variable.

The average fill rates hide some significant variations among commodities and countries. The commodity with the highest fill rate in our sample was poultry in Canada with a 4-year average fill rate of

133%. Fill rates greater than 100% are an indication of countries voluntarily expanding the quota in any year. Canada also exceeded its beef TRQ with an average fill rate of 110%. Lowest fill rates were observed for Hungary and Poland. The lowest fill rate in our sample, at 20% is poultry in Hungary and 36% for beef in Poland. The Asian countries in our sample are not heavy users of the TRQ regime. Except for Korea, none have scheduled TRQs in meat products, and Korea's TRQs are now eliminated. In general, Canada had the highest average fill rate as its poultry and beef TRQs on average were filled at 121% while Hungary's quotas for its four meat products, at 57% was the lowest. The US on average filled about 2/3 of its beef TRQ.

An important issue with TRQs (beyond the scope of this discussion) is the reason for the under fill. The TRQ offers an opportunity to trade; it is *not* an obligation to import. Under fill can occur because of lack of demand or a shortfall of supply in exporting countries. In this case, trade reflects market conditions and the fact that the quota is not filled is not due to the effect of some domestic policy. But under fill can also reflect high in-quota tariffs, quota administration, quota allocation, the presence of state trading importer, or other market imperfections. In this case, actual trade reflects policy behaviour, which should be dealt with in the context of market access negotiations.

Another indicator of developments in market access is the ratio of trade to scheduled quota. Although quotas are or are not binding in individual countries, this ratio does suggest the relative importance of the scheduled quota in world trade. Trade data for 1997 for most *Aglink* countries (the 10 OECD countries and Argentina) from AMAD were used to calculate the ratio of meat quotas to meat trade. The calculations suggest that except for sheep meat, meat imports far exceeded the scheduled quotas in 1997. Even though quotas are generally under filled, there is substantial trade taking place. Pigmeat imports were 10 times greater than the scheduled quota while poultry imports were 5 times more and beef imports almost double their respective quota levels.

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Tariffs on meat products

Along with the quotas, the TRQ regime introduced a two-tier tariff structure; a lower, in-quota tariff and a higher out-of-quota tariff. But, when tariffs based on Harmonised Classification System (HS), are aggregated to commodity levels for models such as *Aglink*, some of the tariff lines fall outside the in- and out-of-quota nomenclature. Furthermore, not all countries scheduled TRQs for all their imported products; hence, we identify a third tariff --non-quota--- to discriminate the various tariff regimes that may be operational in any country.

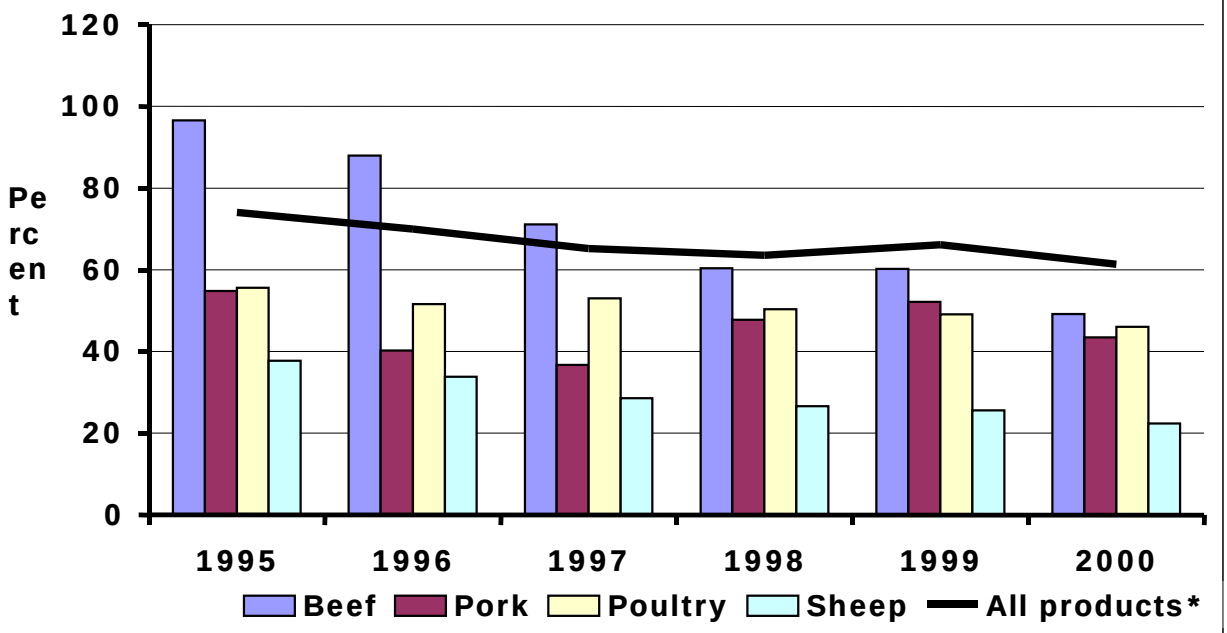
Tariff information from AMAD was used to generate average tariff level for the meat products in the 10 OECD countries and Argentina. These rates are based on scheduled MFN rates and do not include mark-ups or other chargers nor do they include preferential rates. The tariff schedule covers the 1995-2000 implementation period for developed countries and for each year, consists of 179 lines for beef, 127 for pig meat, 377 for poultry and 131 for sheep meat. Many of the schedules include both *ad valorem* and specific tariff rates. The fewest number of tariff lines with specific tariff rates, with 31% of the total is beef, while 52% of poultry tariff lines contain a specific component. In order to compare across countries and commodities, the specific rates were converted to *ad valorem* using prices in *Aglink* (or 1997 world unit values as necessary). The average tariff rates reported here are based on simple averages. Others using the same data but different world prices and aggregation schemes will obtain rates different from these.

The calculated average tariff rate for meats is fairly high, but fell from 62% in 1995 to 42% in 2000, a drop of 31%. Interestingly, the average tariff rate on meat products is below the average for all products covered in *Aglink*. This finding is consistent with the PSE calculations reported above. Meat products are generally less protected than others.

Within the meat products, the average tariff for beef is the highest while that for sheep meat is the lowest (Figure 4). This finding is different from the PSE results that show sheepmeat production with the

largest support, but, is consistent with the fact that most of the support provided to sheepmeat is through direct payments and not through border measures.

Figure 4. Average scheduled tariff rates for meat products



Source: Author's calculation from AMAD

*: Products resported in OECD's Agricultural Outlook.

The average tariff masks the fact that there are different types of tariffs i.e. in-quota, out-of-quota and non-quota, and their level varies substantially. Figure 5 illustrates that average in-quota tariff rates are considerably lower than the out-of-quota rates and lower than the average tariff on products outside the TRQ regime. But, with an average of about 20%, in-quota tariff rates are not trivial. Rather, they represent a significant hurdle and may be one of the reasons for the relatively low fill rates. Average tariff on non-quota products is also substantial, averaging 23% at the end of the period. But, the average tariff on potential imports outside the quota is extremely high, averaging 88% at the end of the implementation period. As is evident from this figure, the average gap between the in-quota and out-of quota tariffs is tremendous, greatly reducing the possibility and probability of out-of-quota imports.

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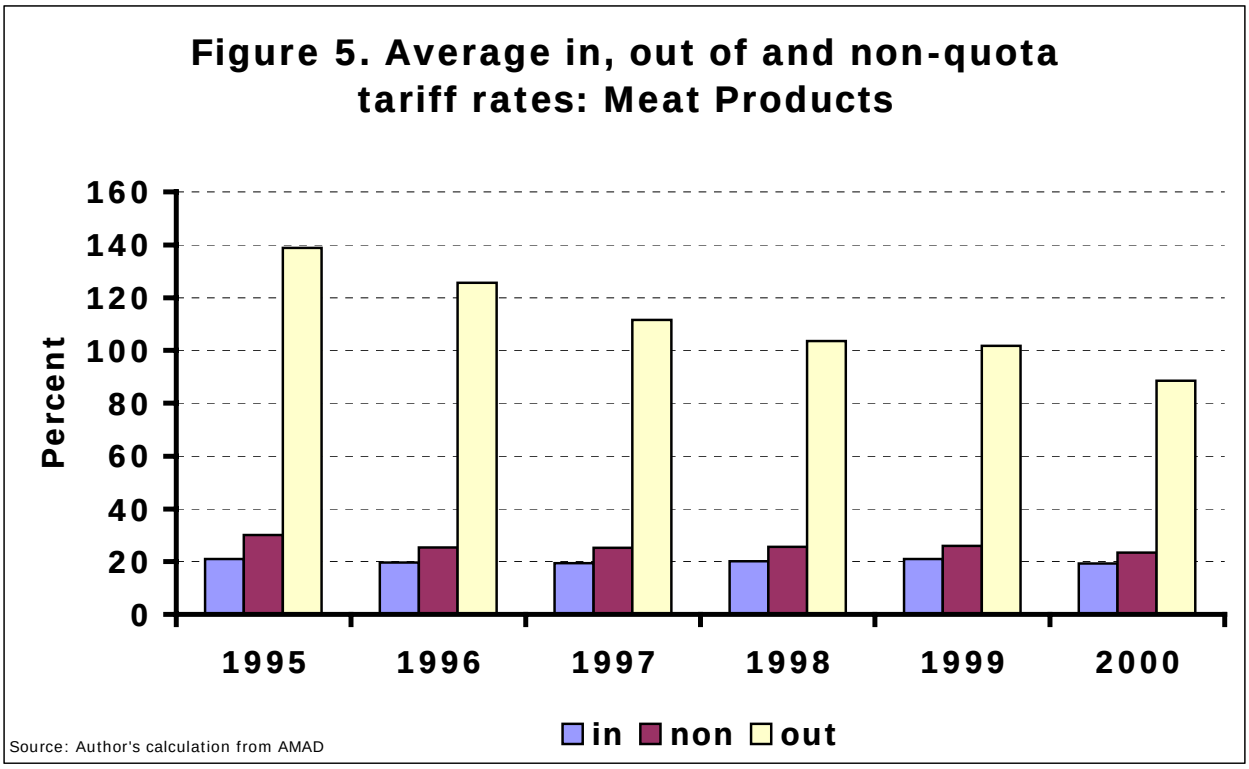

The average tariff rates presented mask the variation between commodities, among countries and between the different types of tariffs. The average in-quota and non-quota tariff rate for sheepmeat is the lowest among the meat products and among the lowest for all products (Table 2). Interestingly, the pigmeat out-of-quota rate is the lowest of the meat products but the average in- and non-quota tariff rate are the highest.

Table 2. Average in-out-of- and non-quota tariff rates in 2000

Commodity	In-quota	Non-quota	Out-of-quota
	---- percent ----		
Beef	21.9	22.9	98.5
Pig meat	27.4	42.1	59.5
Poultry	19.7	22.4	100.5
Sheep meat	6.1	7.0	60.3
All products*	19.9	29.0	158.6

*:Average tariffs for products reported in OECD's Agricultural Outlook.

Source: Author's calculations from AMAD

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The average rates also differ substantially between countries. For example, the highest average out-of-quota tariff in 2000 on beef and sheep meat is in the EU, at 135% and 70% respectively. The largest average pigmeat tariff for pigmeat at 122% is in Japan, and the highest average poultry tariff is in Mexico, at 238% (Table 3). And, these average rates, in addition to being very high, contain substantial tariff peaks. For example, the tariff rate on beef can range up to 169% in the EU, while Japan can impose a tariff of 394% on pigmeat and Canada can charge up to 280% on poultry meat imports. On the other hand, Australia's tariff on each of these products is zero.

The tariff profile for the selected countries and commodities focused on the MFN rates found in each country's schedule (excluding mark-ups or other fees). These rates do not include any preferential rates countries with regional trade agreements may charge each other. It is also a possibility that the rates above overstate the protection level offered by the various countries because some apply rates that are different from those reported in their MFN schedules. What do the applied MFN rates look like and how different are they from the scheduled MFN rates just described? Using data for 1997, this is explored in Figure 6

The average applied rate for the products in *Aglink* is substantial, albeit, less than scheduled rates. For all commodities, the average applied rate in 1997 based on 1 000 tariff lines was almost 40% compared to scheduled average tariff (excluding in-quota rates) based on 1751 lines of 79%[3]. The difference between applied and scheduled rates for meat products is also substantial as shown in Figure 6. The largest tariffs (at 44%) were applied to pig meat products, while the lowest were applied to sheepmeat products (at 13%). In absolute terms the largest difference between applied and scheduled rates were in beef where 61 percentage points separate the two, but in relative terms the largest difference between schedule and applied rates, at 64% was in sheepmeat.

[3] Applied rates for Canada, the EU and the US are not included in the calculations, as these countries do not apply rates different from their schedule. Korea and Poland's applied rates are not included, as they are not available for 1997 in AMAD.

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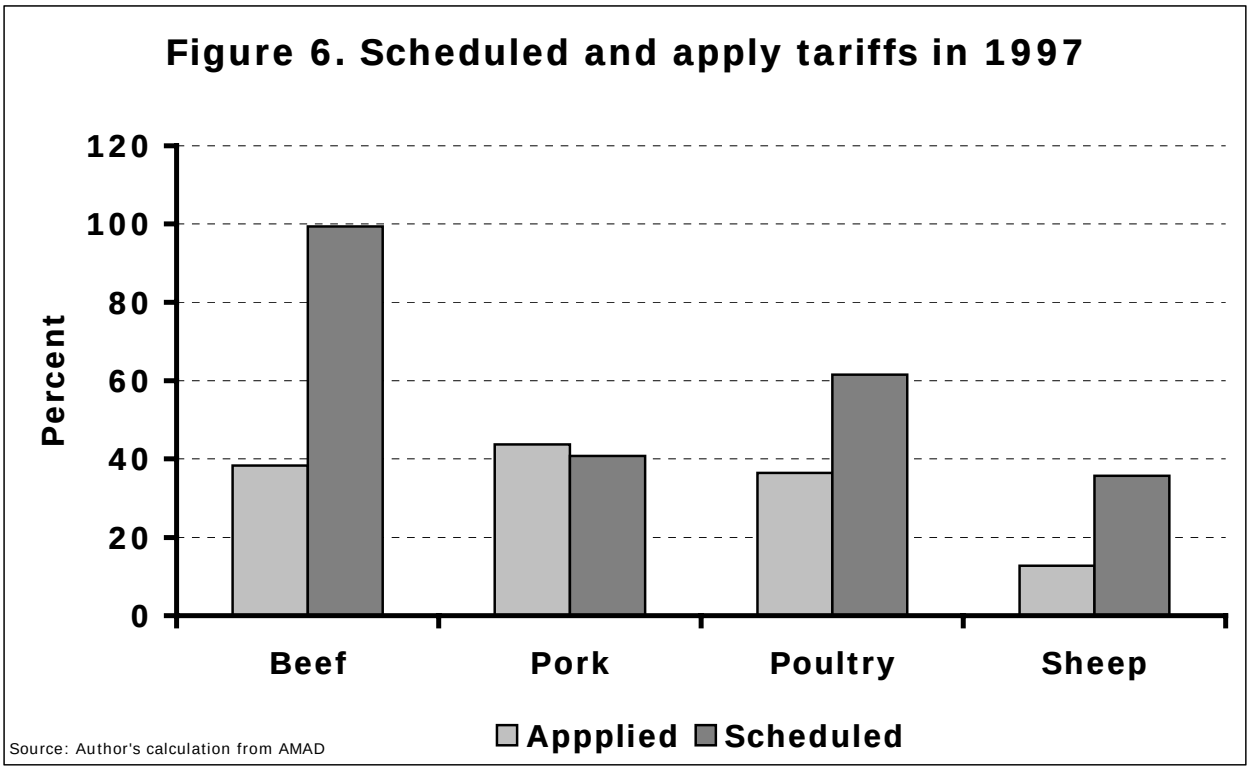
Table 3. Average in, out-of and non-quota tariffs in 2000

Country	Commodity	In-quota	Out-of-quota	Non-quota
		---- percent ----		
Argentina	Beef	n.a.	n.a.	35.0
	Pig meat	n.a.	n.a.	35.0
	Poultry	n.a.	n.a.	31.0
	Sheep meat	n.a.	n.a.	35.0
Australia	Beef	n.a.	n.a.	0.0
	Pig meat	n.a.	n.a.	0.0
	Poultry	n.a.	n.a.	0.0
	Sheep meat	n.a.	n.a.	0.0
Canada	Beef	0.0	26.5	n.a.
	Pig meat	n.a.	n.a.	0.0
	Poultry	3.5	207.9	4.9
	Sheep meat	n.a.	n.a.	0.8
EU	Beef	28.7	135.4	122.1
	Pig meat	28.1	67.3	0.0
	Poultry	12.4	31.4	33.3
	Sheep meat	5.0	69.5	n.a.
Hungary	Beef	15.0	71.7	n.a.
	Pig meat	15.0	51.9	n.a.
	Poultry	35.0	39.0	n.a.
	Sheep meat	20.0	25.6	n.a.
Japan	Beef	n.a.	n.a.	50.0
	Pig meat	n.a.	n.a.	121.9
	Poultry	n.a.	n.a.	7.4
	Sheep meat	n.a.	n.a.	0.0
Korea	Beef	41.6	40.6	n.a.
	Pig meat	n.a.	n.a.	25.0
	Poultry	n.a.	n.a.	22.0
	Sheep meat	n.a.	n.a.	25.2
Mexico	Beef	n.a.	n.a.	47.0
	Pig meat	n.a.	n.a.	47.0
	Poultry	50.0	237.8	42.5
	Sheep meat	n.a.	n.a.	23.5
New Zealand	Beef	n.a.	n.a.	0.0
	Pig meat	n.a.	n.a.	8.5
	Poultry	n.a.	n.a.	17.4
	Sheep meat	n.a.	n.a.	0.0
Poland	Beef	30.0	103.1	n.a.
	Pig meat	30.0	47.5	n.a.
	Poultry	30.0	76.0	n.a.
	Sheep meat	25.0	64.0	n.a.
USA	Beef	4.7	26.4	4.7
	Pig meat	n.a.	n.a.	0.5
	Poultry	n.a.	n.a.	8.5
	Sheep meat	n.a.	n.a.	0.2

n.a.: does not apply.

Source: Author's calculations from AMAD



The fact that applied tariffs are less than scheduled tariffs suggests less tariff protection than what is implied by the scheduled tariffs. But it also implies 'water' in the tariffs. Negotiated reductions in scheduled tariffs may not liberalise trade to the extent suggested by the cuts.

In summary, the tariffs on agricultural products covered the OECD's *Aglink* model, including meats, remain very high, and many of the quotas are under filled. The tariff and the PSE information indicate that there is considerable scope for further liberalisation of meat and other agricultural markets.

Main Trends Over the Next Five Years[4]

As stated earlier, the projections of meat markets made by the OECD are not forecasts per se. They constitute a plausible medium term scenario for meat markets given a number of conditioning

[4] The information in this section is from OECD's Agricultural Outlook 2000-2005.

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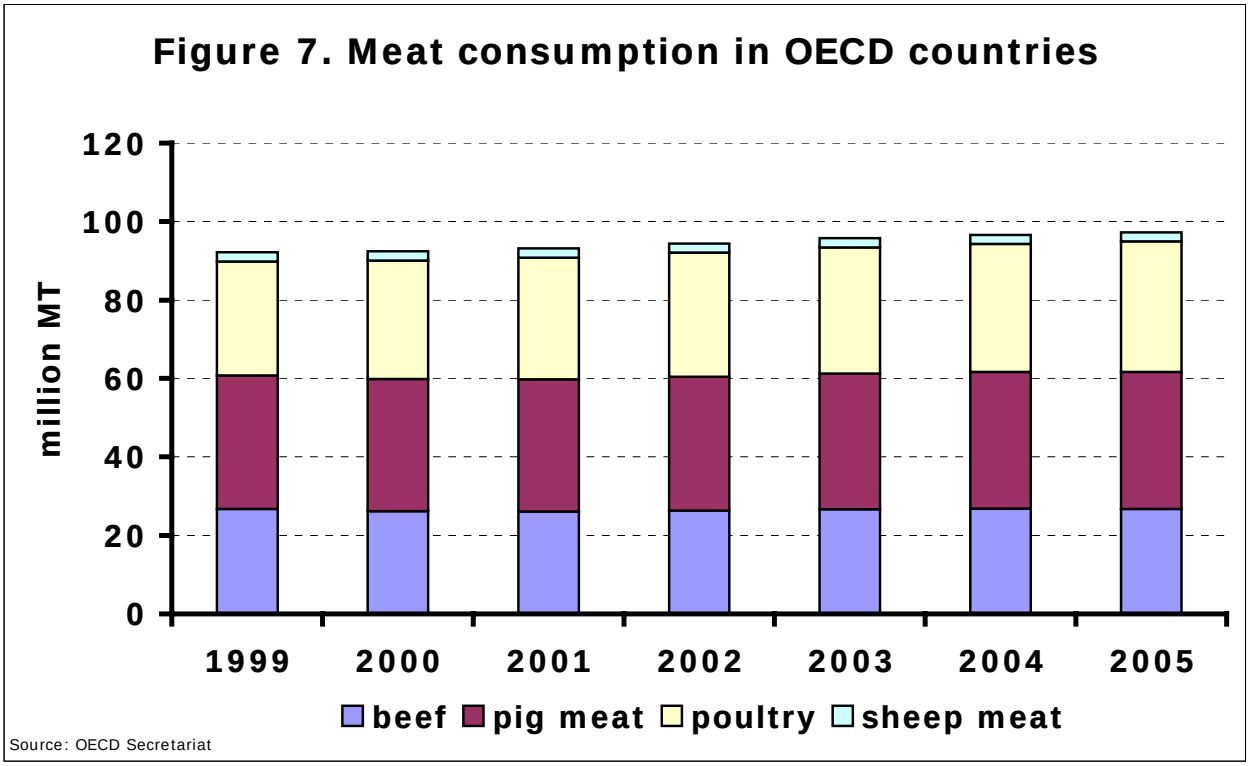
assumptions. These relate in particular to parameters of agricultural policies in force in OECD countries and the main features of the macro-economic environment. The baseline projections are used to identify any emerging market implications of a continuation of current policies (and other key assumptions) and to highlight the market impacts of policy options and reforms.

In addition to policies, assumptions on key macro economic indicators are also important conditioning factors for the projections. After population growth, economic growth is a key factor influencing meat consumption. Real GDP growth in OECD countries is projected to average between 2.5% and 3% between now and 2005 and inflation rates are expected to remain low in most Member countries despite recent pressures from higher oil prices. Another trend of importance to meat markets which is assumed to continue over the coming years is that of further income growth and on-going urbanisation which will impact on the level and composition of food demand in a number of developing countries. The strong recovery underway in those countries adversely affected by financial crisis in the late 1990s is expected to be sustained over the coming years. Real GDP growth in many developing countries is expected to attain an average rate of 4.5% to 5% in the years to 2005. Assumptions on exchange rates also condition the projections. The U.S. dollar is assumed to remain around its current valued against other major currencies but to weaken somewhat against the Yen and Euro.

General trends

Favourable economic conditions are expected to lead to an increase in meat consumption. In OECD countries, consumption at the end of the period, at a little more than 99 million tons is about 5% above beginning-period levels (Figure 7). Continuing past trends based on changing dietary preferences and lower relative prices, the expansion in meat consumption is confined to white meat, primarily poultry. Poultry consumption expands some 14% to over 33 million tons and pigmeat consumption expands 3% to almost 35 million tons. On the other hand, consumption of beef is flat while that for sheep meat drops about 3%. Relatively flat population growth implies that OECD consumers will add about 1.5 kilograms to

their meat consumption (predominantly in the form of poultry) over the six years. Per capita meat consumption increases to 67.2 kilos reflecting the 2-kilo increase in poultry consumption (to 25.4 kilos). However, Asian economies are expected to continue increasing their per capita beef consumption. In Korea, per capita consumption grows by 2 kilos to a little more than 10 kilos per person, while per capita beef consumption expands by a more modest 1 and .5 kilos in Japan and China respectively (with China's increased consumption supplied locally).



Meat production predominantly poultry and pig meat is facilitated by lower feed prices (Figure 8) and in combination with increased demand, this is expected to enhance livestock producer returns in major OECD exporting countries. OECD meat production is expected to increase 6% to a little more than 104 million tons, with the production of poultry meat leading the way, increasing almost 16% to more than 36 million tons. Production of pigmeat increases marginally while sheep meat production is expected to drop about 4% during this time (Figure 9).

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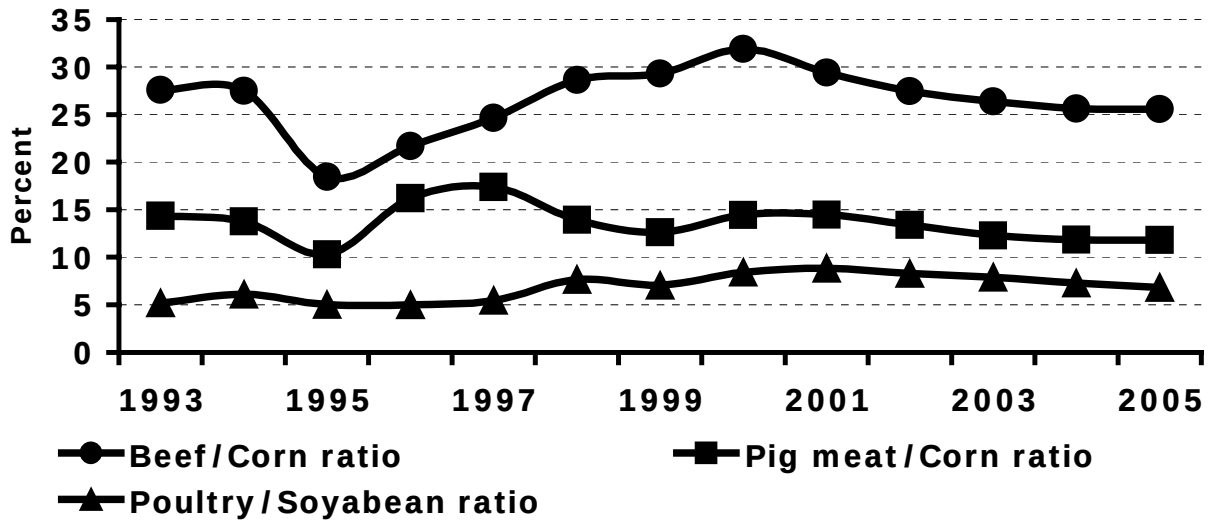
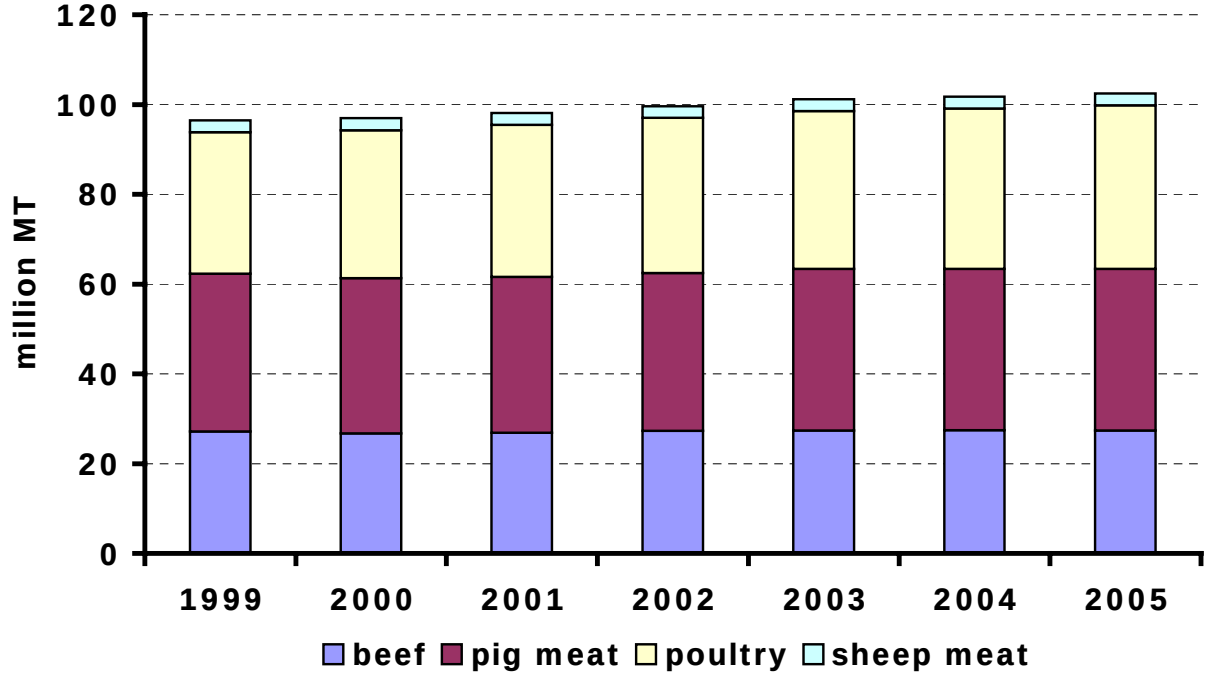
Figure 8. Moderate Feed Prices to Underpin Meat Production



Source: OECD Secretariat

Figure 9. Meat Production in OECD Countries

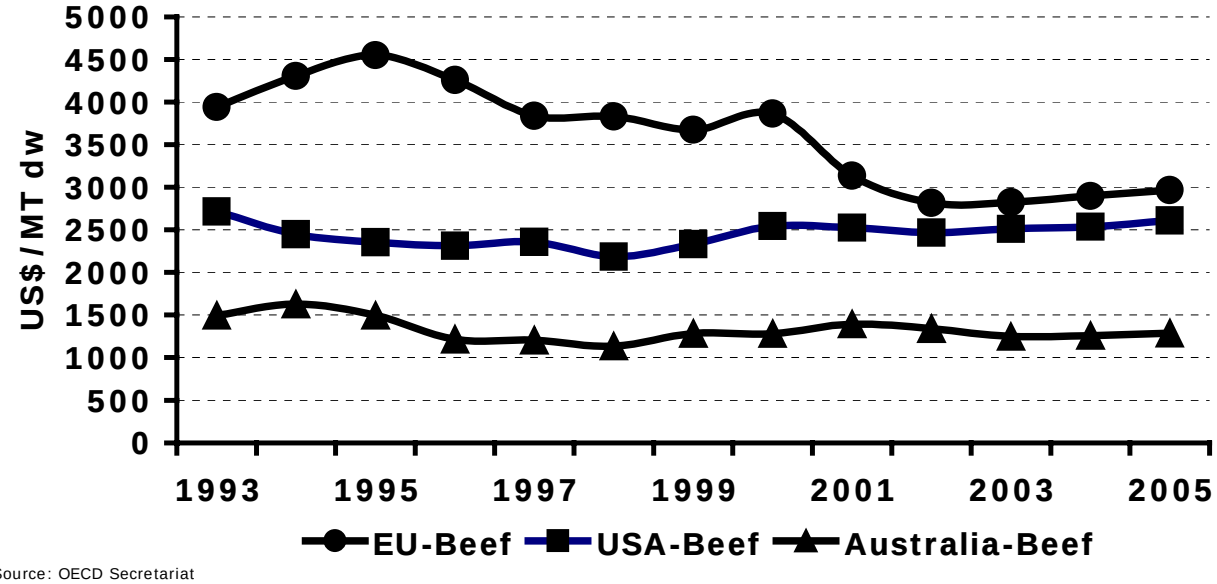


Source: OECD Secretariat

Firmer prices for beef, sheep meat and poultry

Prices for ruminant meats and poultry in world markets are expected firmer. Beef traded in the Pacific basin markets is expected to benefit from stronger demand from Asian importing countries, as the economies of Japan and Korea are assumed to recover. Higher income growth in these two countries, particularly Korea, is expected to increase their beef imports by over 300 000 tons. Smaller advances are also on the cards for other Asian countries such as Hong Kong China, Chinese Taipei and Singapore. Higher demand with relatively flat production is causing prices to increase. But expanding U.S. and Canadian exports towards the end of the baseline period and growing competition from other meats are expected to slow the gains in Pacific beef prices. Measured by the price of US steers, beef prices are projected to reach a level of just over USD 2 600 per ton at the end of the period, from USD 2 190 per ton at the beginning (Figure 10).

Figure 10. Firmer US price and CAP reform nasrrows price gap



Source: OECD Secretariat

Although the US with beef imports projected around 1.3 to 1.4 million tons remains the world's largest importer of beef, the structure of the Pacific beef market is changing with growing role of Asian

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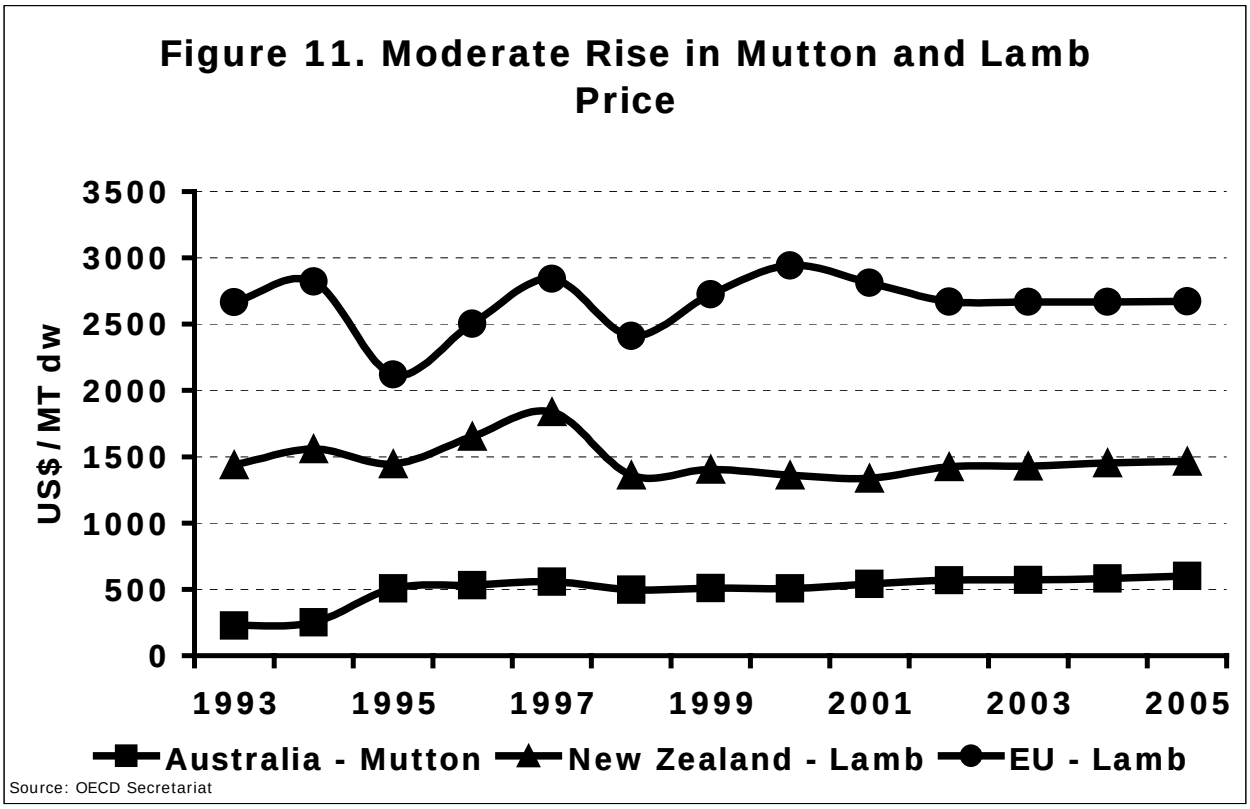
importers. One of the main influences on future trends in the Atlantic beef market will be the effects of the 1999 CAP reforms in reducing EU production, lowering prices, stocks and stabilising exports within WTO subsidy limits. As a consequence, price differences between the Atlantic and the Pacific markets should narrow over the outlook period (Figure 10).

Sheepmeat market prospects will depend mainly on trends in Oceania and to a lesser extent in the U.S. Sheepmeat markets in the EU, heavily conditioned by support, are expected to show little change. Over the medium term, the production of sheepmeats in New Zealand and Australia (two largest exporters) is expected to continue to decline, reflecting lower overall sheep numbers and the switching of land into other uses in New Zealand. In Australia, against the backdrop of an uncertain wool market there has been some change in the composition of the flock to better meat breeds. This is expected to lead to some increase in lamb production although mutton production is projected to decline moderately. U.S. production is projected to continue to decline over the medium term. The U.S. is only a minor sheepmeat producer, but has been a rapidly growing market in recent years. U.S. production is expected to decline further over the medium term, reflecting economic difficulties in the sector that has lost a third of its national sheep flock between 1990 and 1998. With declining production in the EU and import safeguard measures imposed in the U.S., more Oceania sheep meats are likely to be diverted to the EU and other markets. World sheep meat prices, measured by mutton prices in Australia and lamb prices in New Zealand, are expected to increase by about 15% for mutton and 6% for lamb (Figure 11). OECD trade in mutton and lamb is expected to decline in the early years of the baseline in response to lower mutton and live sheep exports by Australia and then to increase slightly in following years with larger shipments of lamb from Australia and New Zealand.



The dynamics of pig meat and poultry markets are substantially different from those for beef and sheep meat. World demand for poultry is still rising strongly. In fact, it is the only meat for which per capita consumption is increasing in all OECD countries. The trend of poultry's increasing share of total meat consumption, which has been apparent over the last three decades, is projected to continue. Consumer dietary preferences are expected to increase demand and lead to higher prices over the outlook period. In terms of trade, OECD poultry meat exports are also showing the strongest projected rates of growth, rising by some 800 000 tons by 2005. In contrast to other meats, most of the increase is destined to non-OECD countries, as OECD imports of poultry meat are projected to grow only by 150 000 tons. Most of the increase in exports is originating in the US, and is destined for markets in Russia and China. In fact, China's poultry imports are expected to increase about 74% to 1.4 million tons. As these markets are not sheltered from turnarounds in their economic or political situations, this is a particular uncertainty attached to the outlook for international poultry markets.

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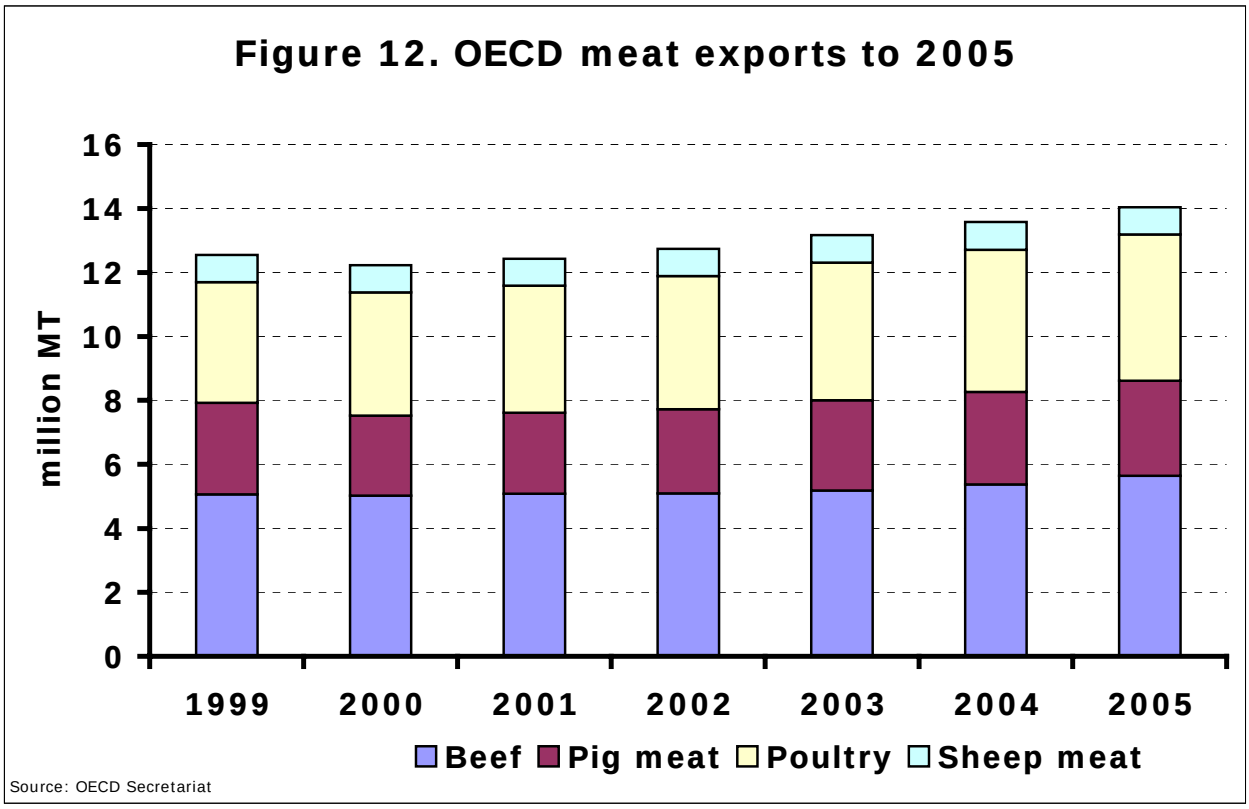
International pig meat markets have gone through considerable adjustment and prices have improved from recent very low levels, in some countries, the lowest of the last 30 years. It is expected that pigmeat prices will continue to rise until 2001-02. This will be in response to a marked slowing in the in the growth in world pig meat production and rising demand in Asian markets as a consequence of economic recovery or disease-related supply disruptions from other Asian suppliers. However, over the remainder of the outlook period pigmeat production is expected to rise substantially in the US and Canada as a result of restructuring in the North American pig industries toward larger scale and vertically integrated production, slaughter and processing structures. In addition, production costs in the EU have declined with successive reductions in cereal support prices. These changes, aided by moderate increases in grain prices in North America and Oceania and a growing export participation from countries in this region, are expected to keep world pig meat prices below historic break even levels. These supply side changes are seen as key factors in restraining world pig meat prices over the medium term. OECD pigmeat exports are projected increasing moderately to almost 3 million tons. Figure 12 illustrates the expected evolution of OECD meat exports over the projection period.



Uncertainties and Issues

There are many uncertainties associated with the outlook, primarily of an economic and policy nature, which are outside the area of influence of market participants. On the supply side, these include most importantly weather-related changes in production conditions and costs of production. On the demand side, there are variations in macro economic developments such as GDP growth rates or changes in exchange rates which could have unforeseen impacts on domestic and import demand and hence on trade. But there are also uncertainties that can be influenced by market participants and policy makers. While most of these are of a more general nature, affecting the entire agricultural sector, they are nevertheless important for the functioning and the outlook of meat markets. Some key uncertainties include; the next round of trade negotiations under the WTO, the accession impacts of major new members to the WTO, the way markets and governments deal with new emerging issues, and the impacts of foot and mouth disease eradication in Latin America on global beef trade.

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Foot and mouth disease eradication in South America

The achievement of FMD-free status in a number of countries in South America is a development with potentially large implications for world beef trade. This raises the prospect of Latin American suppliers gaining access to other Pacific basin markets and of increasing the integration of the Pacific and Atlantic markets. Whether or not the countries in MERCOSUR emerge as big players on the Pacific beef market depends on a number of issues including their ability to raise supply and pricing developments in relation to the existing gap between those in Oceania and Latin America.

The recent recognition by OIE that Argentina and two Brazilian states are FMD-free without vaccination implies that in principle, Japan, South Korea and Mexico should allow imports from those countries. If countries in Asia accepted exports of unprocessed beef from Latin America, they could create competition for Australia's exports of grass-fed beef to Asia since the South American countries produce the same type of meat at fairly similar prices. Argentina has been exporting beef to Chinese Taipei since 1999 (and its market share in 2000 is estimated at some 8%) and Uruguay has exported small quantities to Japan. However, MERCOSUR penetration of Asian markets will depend on other factors including transport costs, greater access to North American markets, the degree of substitution between grass-fed and grain-fed beef, and continuation of the existing flow of high quality meat.

Berlin agreement CAP reform

In March 1999 the EU Heads of State agreed on an agricultural policy reform package to meet four goals; budget reduction, addressing expected internal market imbalances, preparations for enlargement and trade policies that fit future international trade agreements. The agreement included beef reform as part of a package of changes to the EU's Common Agricultural Policy. In the context of lower support prices for beef (to be cut 20% between 2000 and 2003) and cereals/oilseeds, the reforms are expected to reduce surplus beef supply by encouraging consumption and reducing output and thereby, the need for export subsidies. As compensation for lower support prices, direct payments are increased for producers of both suckler cows and male bovine cattle and new slaughter premia are introduced for calves and adult cattle.

National support payments can be added to the adult slaughter premia. These increased direct payments are linked to ceilings on the number of animals eligible for payments and are not expected to fully offset the cut in support prices. Included in the reforms is a desire to replace intervention stocks with private storage aids (as exist for pork), while retaining the ability for the Commission to undertake emergency intervention buying (under unspecified conditions).

The outlook presented here includes these reforms in the EU. OECD analysis suggests that the main impact of the reforms will be on domestic production. The EU beef and dairy markets are directly affected by the Berlin reforms, and indirectly by lower feed costs. Because the key dairy policy changes are delayed to 2005 -- and most beef output is a dual product of dairy production in Europe -- much of the impact on these markets comes beyond the current outlook horizon. Until 2005 the impact on the beef market is small. Coupled with an increasing demand for younger and thus lighter animals, EU beef production will be mostly on a declining trend over the medium term. In response by 2005 there is a 5% decline in the size of the beef cow herd and 2% lower beef production. But it is unlikely that the lower support prices, even if fully transmitted to consumers (an unlikely outcome), will have a lasting effect on beef consumption. Rather, per capita consumption is expected to return to a downward trend[5]. Nevertheless, EU beef intervention stocks should average well below the levels of recent years (by 600 000 tons) while exports remain at the subsidy limits set under the URAA. And, despite a narrowing of the gap between EU and Pacific basin beef prices, unsubsidized EU beef exports remain unlikely over the medium term, taking into consideration quality differences and higher transport costs (Figure 13).

Pork, poultry and sheep meat producers also benefit from the lower feed costs (8% lower on average). Lower feed prices are expected to lead to small increases in pork and poultry production, with most of the increase consumed on internal markets. Lower feed costs are reflected in lower output prices that narrow the gap between EU and world prices for these products. However, the EU is expected to fully

[5] The analysis was undertaken before the recent developments in the BSE crises that may upset the balance in the beef market. It is still too early to tell whether government measures will effectively reassure consumers and what the longer-term impact of the BSE crisis on demand for beef within the EU will be.

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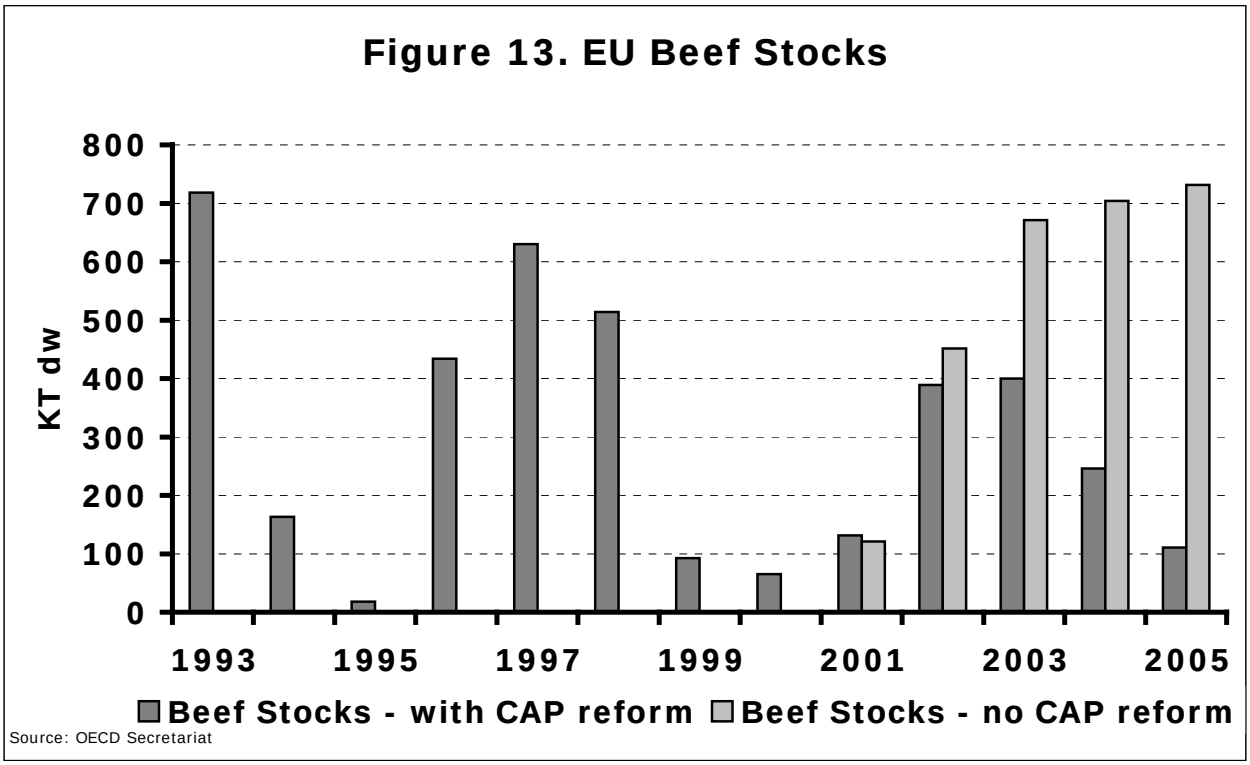
use the export subsidies allowed under the URAA for these products, while a portion of EU pork and poultry exports will be exportable on world markets without subsidies.



The next round of trade negotiations

Another uncertainty is the outcome of the current round of multilateral negotiations on agriculture. Early agreement on these negotiations could start to influence markets towards the end of the outlook horizon. However, the delayed launch of the talks highlights the disparate interests and expectations various countries have in these negotiations and has reduced the probability of an early agreement.

Analysis thus far has indicated that the impacts of the last round on agricultural markets should not be over estimated especially in the area of market access where very high tariff rates fill the landscape. Although too early to know what the negotiations will attain, proposals by participants in Geneva indicate that the next round will likely focus on further reforms along the three pillars -- domestic support, export subsidies, and market access. In terms of domestic support, dairy is one of the sectors that have come out

of the previous round largely unscathed. Specific reforms commitments for dairy or implied reform pressures from further reductions in the use of export subsidies could have important implications for beef production, in particular in countries where much of the beef produced and traded is a by-product of the dairy herd.

Constraints on export subsidies have probably been the most immediately effective measure taken under the URAA. Not only has it directly resulted in a reduction in price depressing subsidized exports, but the fact that surpluses can no longer be disposed of unhampered on world markets has generated pressures to reform domestic policies. This is happening because unlimited storage of surplus produce is no viable alternative to subsidized exports. But the market effects of further limitations on subsidized exports are likely to be small. This reflects the fact that many countries have voluntarily restrained their use of export subsidies. For example, the US had taken unilateral measures under the FAIR Act to restrict EEP below WTO commitments. Furthermore, the outlook is for an increase in world prices, which combined with declining support prices in many cases, implies less need for subsidized exports.

But, the EU continues to subsidize meat exports and current reforms as mentioned above, are insufficient to eliminate them. Negotiations that lead to reduction or elimination of export subsidies are expected to have the largest impact on the EU. OECD analysis[6] suggests that compared to the outlook presented here, eliminating export subsidies (without compensatory increases in intervention stocks) would result in lower meat prices in the EU and lower production. Compared to the outlook, eliminating export subsidies would lower beef output by 6.5%, pig meat output by 5.4% and poultry output by 4% in 2005.

Effects on world meat markets on the other hand are marginal. One reason is the relatively smaller share of EU meat exports relative to world markets. A second cause is the market segmentation in the beef and pig meat markets discussed above and EU's relatively small interaction with those markets. Another factor is the Andriessen agreement under which the EU pledged not to use subsidies on beef exports to Pacific markets. Finally, lower prices and the resulting lower output and higher domestic consumption

[6] OECD, "A Forward-Looking Analysis of Export Subsidies in Agriculture", COM/AGR/TD/WP(2000)90/FINAL, Dec. 2000.

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reduces exportable surplus and enhances the possibility of unsubsidized exports, especially for pigmeat and poultry.

However, one should not interpret these results as implying that export subsidies are not an important issue for the next round. Exports of other products are also subsidized and their elimination has larger impacts on world markets. And, under different conditions, such as an era of falling rather than increasing prices or different exchange rates could make export subsidies more prevalent and thus more distorting. By committing countries to multilateral agreement to further reduce export subsidies, the unilateral limitations on the use of such subsidies would be captured in a multilateral agreement and would thus in future years remain outside the area of influence of national policy makers, reducing the possibility of back-sliding.

But export subsidies are only one element in a series of policies that can affect export competition. The presence of state trading agencies with import or export monopoly, abuse of food aid or the use of export credits can equally distort international trade patterns and result in capture of market share by countries despite the fact that they may not be the most competitive producers. Such issues are part of the unfinished business of the Uruguay Round Agreement. The use of export credits has not been a big issue in meat trade, but there is evidence that their use has increased in cereal trade since the implementation of the Agreement. Unless restrictions are placed on the use of export credits in agriculture, their use may well become more widespread should negotiators in the next round reach agreement on the elimination of all export subsidies. An agreement on export credits in agriculture has been under negotiation in the OECD but the talks have remained inconclusive thus far. Unless an agreement is reached within the OECD the issue is likely to be taken up in the next round of trade negotiations.

On market access, much remains to be done. Tariffs on agricultural commodities, including most meat products, remain very high after falling ostensibly by 36% during the implementation period. Although important steps were taken in the URAA by converting NTB’s to tariffs and opening quotas; most quotas go unfilled while countries continue to protect their sensitive products with out-of-quota tariffs that are exorbitant.

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Based on current proposals by participants in Geneva, countries would like to further liberalize market access by expanding quotas and reducing tariffs. Data and preliminary analysis suggest that both should be pursued although tariff reductions, by affecting more commodities in more countries, lead to greater market access. The data suggest that for most quotas, expanding them (without also lowering in-quota tariffs and improving administration methods), will not significantly increase market access since most are under filled. Preliminary empirical analysis at the OECD supports this conclusion. A 50% expansion in quotas, to 2005, leads to marginal effects on world prices and imports. Of course for a few sensitive commodities where the quota is the binding instrument, expanding the quota leads to greater imports.

The data suggest that for the countries in *Aglink*, quota on meat products is not the binding instrument. Quotas are not a prevalent feature in Asia's growing meat markets. Japan has none and Korea's quotas on pork and poultry have been phased out and the beef quota officially expires at the end of 2000. Mexico uses applied tariffs to administer the poultry quota, which means that the quota is redundant since unlimited imports can occur at the in-quota tariff. Canada's beef and poultry quotas are also not binding with fill rates that exceed 100% each year, suggesting that Canada voluntarily expands its quota as needed. In the U.S., the country with the largest scheduled beef quota (in volume terms) the quota appears to be non-binding, as it is usually only 2/3 filled. But, there may be problems with quota allocation and administration in this case as some exporters want additional quota rights while others do not fully utilize all that is available to them. Simply increasing the quota in this case may not have a very large impact. The EU and aspiring entrants (Hungary and Poland) have the most meat quotas (in terms on number scheduled) but the effects of expanding the quotas in these markets is also problematic. Both the EU and Hungary have the right to subsidize significant volumes of the same product for which they have scheduled quotas and the fill rates (other than beef and poultry in the EU) is very low. Since quotas are not an obligation to import, it is not clear that expanding the quota without additional changes would significantly improve market access.

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Tariffs on the other hand are very much a prominent feature in the schedule of most countries. Tariffs affect more commodities in more countries and their reduction therefore has the potential for greater improvements in market access. Preliminary analysis at the OECD supports this conclusion. For example, reducing out-of-quota and non-quota rates by 36% over the outlook period leads to beef imports that are 4% and 5% greater in Japan and Korea respectively while their domestic prices are 3% and 9% lower. The pig meat markets in these two countries is similarly affected with imports increasing 8% and 13% in Japan and Korea respectively while domestic prices fall 4% and 5%.

In summary, for many of the commodities and countries examined, domestic policies supporting producers and minimizing market access remain. The TRQ system in the majority of these cases effectively helps sustain domestic support policies. Under these conditions, the quota restricts market access. High out-of-quota tariffs also prevent imports at the out-of-quota rate, isolating the domestic market and sustaining support prices significantly above world prices. In these cases, a role of the in-quota tariff is to allocate quota rents between government and private traders. Significant reductions in out-of-quota tariffs could however, bring downward pressure on domestic support prices and improve transmission of world price signals to domestic markets, to the benefit of consumers.

Even though the TRQ system contains three instruments, only one is effective at any time. The binding instrument differs between countries, among commodities within a country, and over time. Hence a liberalization of all three instruments simultaneously would have the biggest impact on market access -- i.e. affecting more products in more countries and leading to lower domestic prices, better allocation of resources and a better deal for consumers.

Emerging consumer concerns

There are additional issues that are helping to make the global trading environment more complex. The tendency towards less direct government intervention was recently reconfirmed by the Ministers for Agriculture of OECD countries, but, this contrasts with increasing regulations in other areas such as food safety and quality, labeling, environmental impacts of intensive farming methods, genetic modification,

animal welfare, food production methods, and viability of rural areas. All these emerging issues reflect growing societal awareness and preoccupation about the ways in which food is produced and possible negative side effects. Such issues are rapidly moving center stage in the farm policy agendas of many countries and how they are tackled will have far reaching implications for markets and trade reform. Public perceptions about these issues differ within and between countries and the need to address them is therefore not felt to the same degree in all countries.

Many governments have responded to these new concerns with increased regulation. As a result, there is a risk of the proliferation of standards and certification procedures that are difficult to compare and which may impede trade. Governments do have a role in providing the appropriate framework for the development of the agro-food sector so that it is not only responsive to market signals and integrated in the multilateral trading system, but also produces food such that consumer concerns are addressed. There is a need to search for market-based solutions to these issues whenever possible rather than resort immediately to direct government regulation. If regulations are deemed necessary, they should be framed in ways that complement rather than obstruct policy reform and trade liberalization. The key challenge for governments in the period ahead will be to address the growing concerns regarding food safety, production methods, environment and the viability of rural areas in well targeted ways that are effective, efficient and avoid distortions on production and trade.

Summary

Reviewing past and future trends in international meat markets leads to the conclusion that these markets will become increasingly competitive if the next WTO round leads to lower tariffs and smaller export subsidies. Together with the shift toward less distorting domestic supports, these should lead to better global allocation of resources, reduce distortions and benefit consumers. As the role of markets increase under this environment, government policies may shift toward addressing food safety, environmental and other consumer concerns. However, when policies in these areas are deemed necessary,

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they should be framed not to obstruct policy reform and trade liberalization. They should not be used as an excuse to raise new trade barriers.

Not only is the number of trading countries increasing, but consumers also have a growing choice between an increasing variety of cuts or prepared meals using all types of meat. The availability of poultry in international meat trade will continue to grow and the same is likely to happen with pigmeat, which is increasingly commercialized outside traditional bilateral trade flows. With more Latin American countries receiving FMD-free status, a fresh influx of competitively priced and high quality beef will be available in Pacific beef markets. This market will be increasingly characterized by distinction between grain- or grass-fed beef and quality differences in general, rather than FMD status.

In addition to this evolution in export supplies of various types of meat, the demand side is also characterized by important changes. Consumption decisions by wealthy consumers in developed countries are increasingly less determined by price alone and other attributes such as product quality, versatility, safety, the way it is produced and the guarantees that can be given in these respects will be of growing importance. Certainly in developed countries, meat can no longer be traded as a commodity where markets absorb what producers supply. On the contrary, it will increasingly be the consumer who dictates what needs to be produced. The situation in developing countries is different in the sense that price and availability of produce may still be more important than variety and quality. But to the degree that this is true, it can not be taken as the starting point for a long-term strategy for the meat industry: quality and value concerns will eventually dominate these markets too.