Global Beef Liberalisation

Magellan Project Phase 2

Gains from reducing production and export subsidies

Five Nations Beef Group

Study prepared for
Cairns Group Farm Leaders Meeting
Santa Cruz, Bolivia, October 2002

Global Beef Liberalisation

Magellan Project Phase 2

Gains from reducing production and export subsidies

Five Nations Beef Group

Study prepared for
Cairns Group Farm Leaders Meeting
Santa Cruz, Bolivia, October 2002

FOREWORD

The five nations of Australia, Canada, Mexico, New Zealand and the United States ('Five Nations') have a large stake in world beef trade. Thus they, and others, have a large stake in efforts to reduce support and trade barriers affecting the international beef market. Representatives from these nations initiated the Magellan Project at a conference in Australia in 2001. The aims of the project are to quantify the benefits of liberalising world beef trade, to better understand the political forces needed to bring about reductions in support, and to devise appropriate strategies for reform.

This paper presents further results of work on the Magellan Project and follows an earlier report which examined market access issues (Five Nations 2001). The key focus of this study is on the effects of reducing domestic and export subsidies, leaving existing market access barriers intact. Subsequent reports will extend this work and draw all the threads together. They will also examine non-tariff barriers.

The results reported here make use of the Global Meat Industries (GMI) model which is supported by Meat and Livestock Australia (MLA). The analysis was undertaken by the Centre for International Economics (CIE), Canberra, with financial support from the Five Nations.

The results of this study were first presented to the Cairns Group Farm Leaders meeting in Santa Cruz, Bolivia in October 2002 by Dr Peter Barnard, MLA, on behalf of the Five Nations.

ACKNOWLEDGMENTS

CONTENTS

CONTENTS

Charts and tables

SUMMARY

Amongst Organisation for Economic Cooperation and Development (OECD) countries, beef is one of the most highly-protected agricultural industries (OECD 2002). The European Union (EU), Japan and South Korea account for around 87 per cent of total support to beef farmers. The European Union alone accounts for 78 per cent of OECD total support levels on beef — EU beef producers get most of their gross returns from government programs rather than the value of beef at world prices.

Support levels to farmers in Japan and South Korea are generally at high levels, but have declined a little since the early 1990s (chart A). Both Japan and South Korea have reduced market access barriers, with quotas having been replaced by tariffs.

Market price support is the major form of support for beef producers. For EU beef producers, it accounts for about 60 per cent of total support, and for South Korean and Japanese producers, it accounts for around 90 per cent and 80 per cent of total support respectively (OECD 2002). Market price support is primarily provided through tariffs and tariff quotas that raise internal prices above world prices.

The European Union is the only trading bloc which uses beef export subsidies. In 1996-97, the European Union had difficulties in meeting its reduction commitments on export

subsidies under the World Trade Organization (WTO), but subsequently, the outbreak of bovine spongiform encepha-lopathies (BSE), and consequent heavy slaughterings, reduced export levels. Exports are currently unconstrained by WTO limits.

A The European Union has the highest level of support to beef producers

Source: OECD.
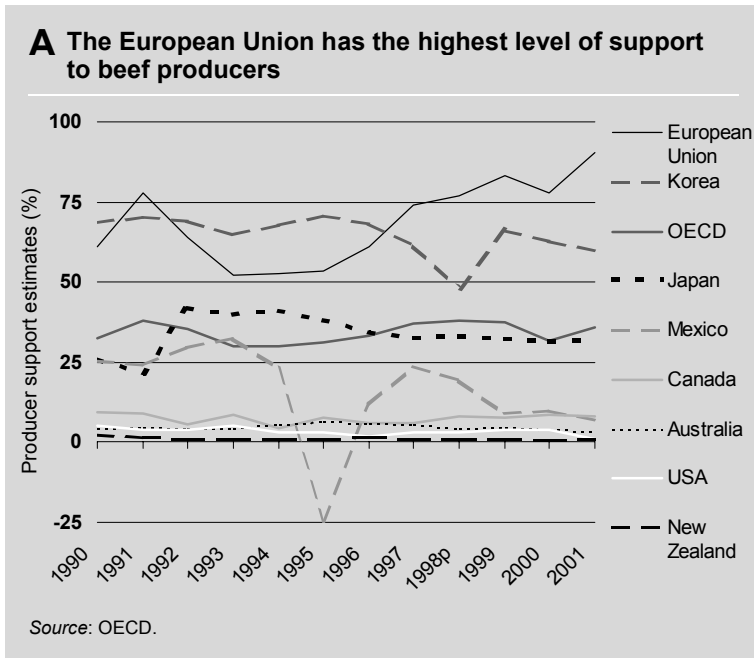
Simulation results using the Global Meat Industry (GMI) model indicate that the South American countries would be the main beneficiaries from elimination of export subsidies and also from reducing domestic production subsidies to beef producers in the European Union (charts B and C). The relatively large gains to Brazil reflect the relatively greater size of the Brazilian beef industry compared with the beef sectors of other South American countries.

The results also indicate that removal of production subsidies in Japan and South Korea would mainly benefit

the major exporters of the Pacific Basin countries — the United States (US) and Australia, in particular (chart D).

B **Gains in producer profits from elimination of EU export subsidies —** deviation from base case

Source: GMI model.

C **Gains in producer profits from eliminating EU domestic subsidies which are trade-distorting —** deviation from base case
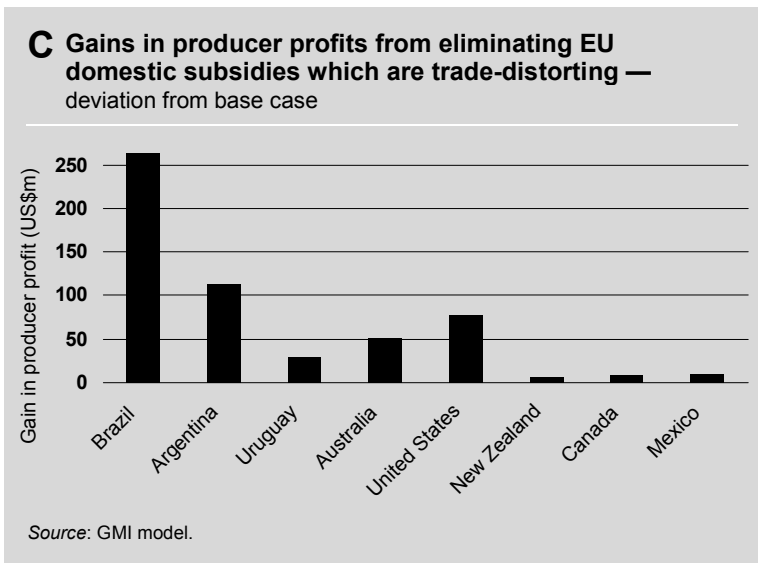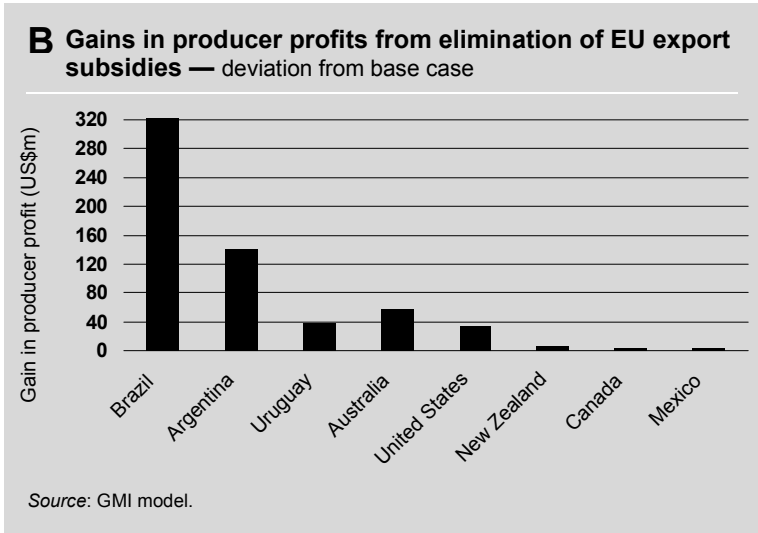
Source: GMI model.

D **Impacts on selected other countries of removal of domestic supports in Japan and South Korea —** deviation from base case

Change in producer profit (US$m)

70	
60	
50	
40	
30	
20	
10	
0	

Australia United States New Zealand Mexico Argentina Uruguay Brazil
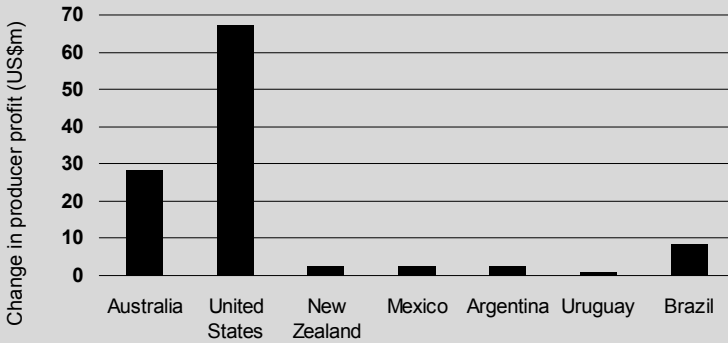
Source: GMI model.

The analysis highlights the important linkages between the three pillars of support — market access, domestic support and export subsidies. These linkages will be further explored in subsequent reports in this series.

The results to date in the Magellan Project also highlight the importance of achieving reforms on all three of these pillars of support, but market access in particular. Most of the support to beef farmers is in the form of market price support. This support, and the need for export subsidies, would be reduced by increases in market access.

1 INTRODUCTION

The focus of this paper is on production and export subsidies and how these impact on the world beef market. The work reported here draws on work being done as part of the Magellan Project initiated at the Five Nations Beef Conference held in Australia in 2001. The five nations of Australia, Canada, Mexico, New Zealand and the United States have agreed to cooperate in this ambitious research project which aims at quantifying the benefits of liberalising world beef trade and reducing trade-distorting subsidies.

A previous paper from the Magellan Project concentrated on market access issues and the effects of removing tariffs and tariff quotas on beef (Five Nations 2001). The results showed that producers in the major beef-exporting countries stand to gain substantially from removing trade barriers (producers in the United States, in particular, were shown to be the big winners). The analysis showed that beef consumers in importing countries would also benefit substantially (consumers in Japan and the European Union gain the most).

This paper takes the analysis a step further and reports on the effects of removing production and export subsidies.

The paper begins with a brief update on the state of play in reform of world agricultural trade and reform of beef markets in particular. This is followed by a descriptive analysis of production and export subsidies affecting the world beef market. Using the GMI model, the effects of

removing subsidies are then analysed in detail. Key con-
clusions and implications for the Doha Round negotiations
are brought together in a final section.

2 STATE OF PLAY ON REDUCING SUPPORT

A significant achievement of the Uruguay Round trade negotiations was the inclusion of agricultural trade-distorting policies within mainstream WTO disciplines. Consideration of the Agreement on Agriculture might indicate that substantial reductions in trade barriers and support levels have been achieved. Significant reduction commitments were made by all parties within the three pillars of reform — market access, domestic support and export subsidies.

On closer examination, the outcome is less impressive. High-support countries have used a variety of responses to reduce the actual rate and extent of reforms to their domestic agricultural industries.

- In many cases, tariffs were bound at rates well above applied rates, so reductions in the bound rate had little effect on applied tariff rates.

- Tariff quotas often have prohibitive out-of-quota tariffs so that access over-quota has been generally minimal.

- Many domestic support policies have been altered slightly to make them eligible for inclusion in the 'blue' and 'green boxes'[1] and, therefore, not subject to reduction commitments.

---

[1] In WTO language, the wide range of subsidies and support mechanisms provided to producers are classified into so-called 'amber', 'blue' and 'green boxes'. Subsidies in the 'amber box' are the most production- and trade-

■ Many domestic support policies, while technically de-linked from prices in order to escape reduction commitments, nonetheless support beef production at a high level.

Chart 1 shows that the overall level of support to agriculture in OECD countries, measured as the Producer Support Estimate (PSE)[2], has declined only marginally since the start of the Uruguay Round, and not to any significant extent since the completion of the Round in 1995.

But the overall level of support to beef producers in OECD countries taken as a whole has shown a slight upward trend since the start of the Uruguay Round and, astonishingly, an increase since the completion of the Round in 1995 (chart 2). This has been, in part, due to increasing support afforded to beef producers in the European Union.

For major beef-exporting countries in the Pacific Basin, there have been important improvements in market access for exports to several major importing countries since 1986. The key changes are as follows.

---

distorting, and include those which are directly linked to current prices or production. Subsidies in the 'blue box' include those which are somewhat less production- and trade-distorting, such as payments made on a fixed number of head, or on 85 per cent or less of the base level of production. 'Green box' subsidies are regarded as minimally production- and trade-distorting. In OECD language, 'market price support' includes any measures which raise internal prices above world prices, plus direct production subsidies (that is, 'amber box' subsidies). 'Direct income support' includes 'blue' and 'green box' subsidies.

[2] Producer Support Estimate (PSE) is an indicator of the annual monetary value of support from taxpayers and consumers to producers, measured at farm gate level. It is a nominal assistance measure. The percentage PSE is the ratio, expressed as a percentage, of the PSE to the value of gross farm receipts, which includes the value of total production at farm gate prices plus budgetary support.

1   Support to agriculture has shown a small downward trend in OECD countries
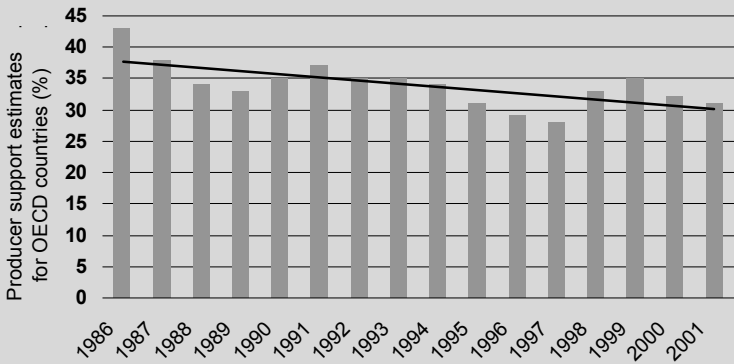
Source: OECD database.

2   But support to beef producers has trended slightly upwards
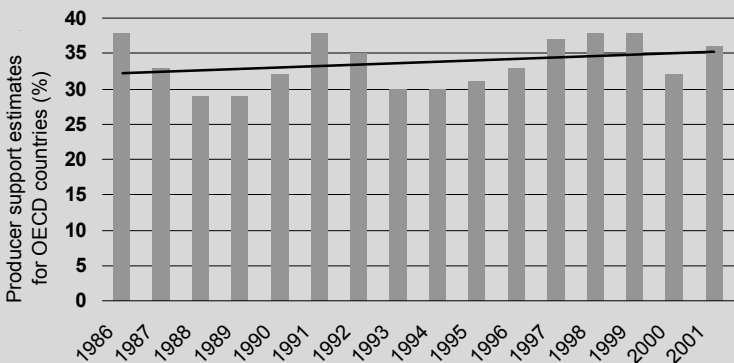
Source: OECD database.

- Replacement of Japan's restrictive import quota regime for beef with a 70 per cent tariff in 1991. This has since been progressively reduced to the current applied rate of 38.5 per cent.

- Replacement of a virtual import ban in South Korea in 1988 with a beef import quota, and with gradual expansion of the quota to, finally, a tariff-only barrier of 40.9 per cent in 2002. South Korea has also removed its previous system of requiring imported beef to be sold through special retail outlets — a form of non-tariff barrier.
- In Canada and the United States, import quotas, or 'voluntary restraint agreements', have been replaced with tariff quotas, with a larger volume of beef permitted entry duty-free, and over-quota tariffs of 26.5 per cent and 26.4 per cent respectively.
- In the European Union, import tariff quotas remain, but the value of subsidised beef exports has been reduced.

These changes have had a significant impact on the pattern of world beef trade. Beef imports by Japan, South Korea and North America have expanded (chart 3) and this has benefited exporting countries such as Australia and New Zealand and also the United States. For a short time, while they enjoyed foot and mouth disease (FMD) free status, some South American countries, too, benefited from the increased market access in the Pacific region. Australia and the United States have been the main suppliers to Japan and South Korea, with the United States substantially increasing its market share, particularly in South Korea.

Aided by the North American Free Trade Agreement, Canadian exports to the United States increased from 11 per cent in 1991 to 36 per cent in 2001.

One major import market where there has been little change in market access over the last decade is the European Union. A previous array of quotas has been changed into an array of tariff quotas with very high or prohibitive out-of-quota tariffs.

3 **Beef imports have increased and market shares have changed in some countries over the past decade**
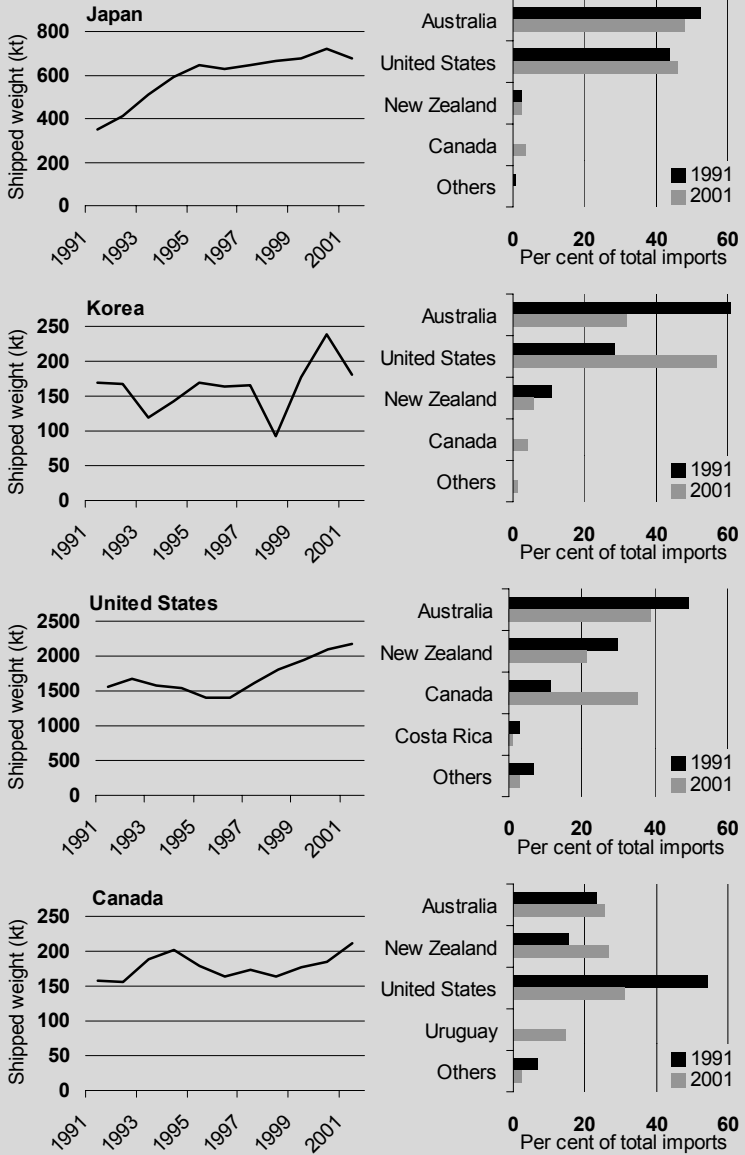
Source: GMI database.

Country allocations of these various quotas have also changed very little. Producer support for beef has increased significantly in the European Union.

The extent to which individual countries have changed the level of support to their beef sectors is illustrated in chart 4. The European Union stands out as having the highest level of beef support. The high PSE since 1996, and in particular in 2001, partly reflects the substantial amount spent on combating FMD and BSE, or 'mad cow' disease (see chapter 3).

4 The European Union has the highest level of support to beef producers

Source: OECD.
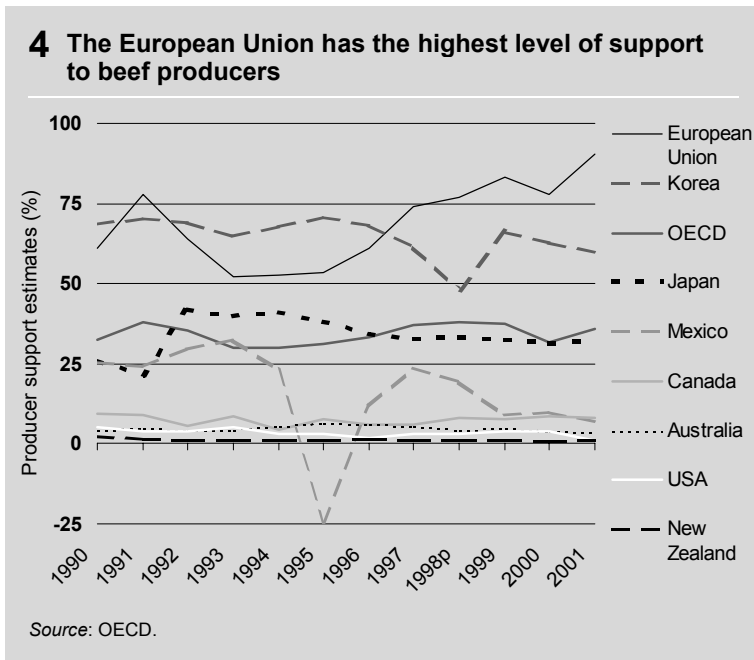
Support levels in Japan and South Korea have fallen slightly over the past decade, but still remain at high levels, particularly in South Korea. In the five nations of Australia, Canada, Mexico, New Zealand and the United States, support remains at low levels.

In countries where beef is highly protected, it is often the case that other livestock industries also have relatively high levels of support, but beef producers generally receive the highest levels of support (chart 5).

5 Beef is generally the most protected commodity

Source: OECD.
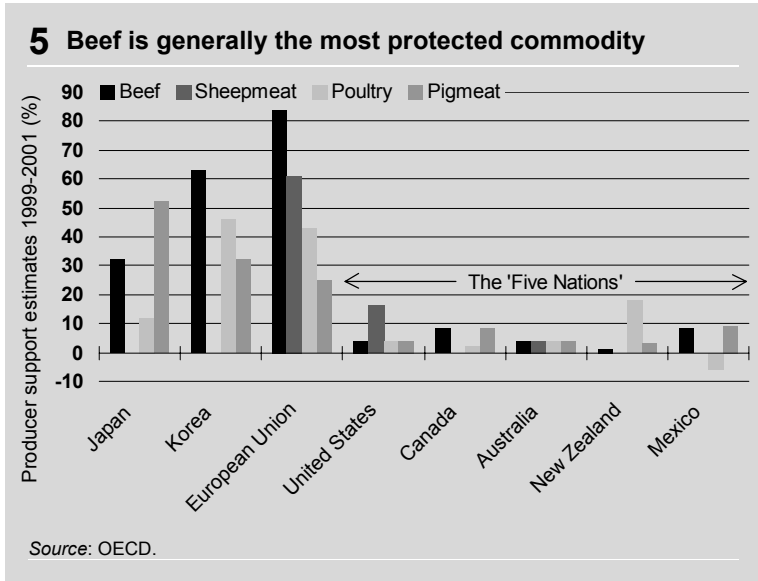
Doha Round provides further opportunities for reform

Even though some countries have taken steps to increase market access for beef, much remains to be done, particularly by the European Union. The Doha Round is now well under way and provides further opportunity to reduce support to beef producers and reform the beef trading environment. The wording of the Doha Declaration (WTO 2001) relating to agriculture is, at least, encouraging. Agricultural negotiations should try to achieve

> substantial improvements in market access; reductions of, with a view to phasing out, all forms of export subsidies; and substantial reductions in trade-distorting domestic support.

Since the declaration in November 2001, countries have been putting forward their ideas and suggested agendas for the serious negotiation phase. The United States, for example, has put forward a bold proposal for all countries to limit their subsidisation of agriculture to no more than 5 per cent of the value of their agricultural production and to adopt the 'Swiss' approach to reducing tariffs to a maximum 'cap' of 25 per cent, with reduction commitments greatest where tariffs are currently highest. Export subsidies would be eliminated. This proposal, if adopted, would result in a halving of the subsidies to US agriculture, from around US$20 billion to US$10 billion, and a drop in EU farm subsidies from around US$60 billion to around US$12 billion.

The Cairns Group has finalised its position on modalities and has proposed (Committee on Agriculture 2002):

- the complete elimination of export subsidies;
- reducing tariffs in developed countries to 25 per cent or lower;
- substantially expanding developed-country tariff quotas by adding 20 per cent of domestic consumption;
- improving tariff quota administration to ensure new and existing market access opportunities can be fully utilised;
- on a product-specific basis, reducing the final bound Aggregate Measure of Support (AMS) commitments currently in WTO Members' schedules to zero over five years for developed countries and over nine years for developing countries;
- elimination of any exemptions under the so-called 'blue box' (Article 6.5 of the Agreement on Agriculture);
- implementing reforms on domestic subsidies by developed countries committing to a 50 per cent reduction in the first year, followed by equal cuts over subsequent years to reach zero;

- reducing *de minimus* provisions for developed countries with a view to their eventual elimination;
- strengthening definitions of product-specific support; and
- tightening disciplines on the 'green box' and committing to a mechanism to limit the amount of expenditure on certain types of domestic support, such as direct payments, decoupled income support, income safety net measures and structural adjustment investment assistance.

So far, the European Union has not submitted any detailed proposal, but the Commission has indicated broad directions for reform of the EU's Common Agriculture Policy (Commission of the European Communities 2002). For example, the Commission has proposed that 'reliance on export refunds and internal consumption aids would be reduced significantly'. However, the Commission also envisages that direct payments would compensate producer revenues for any price reductions and, depending on how these direct payments are made, the trade-distorting effect could still remain significant.

The Commission is proposing

> completing the shift from product to producer support with the introduction of a decoupled system of payments per farm, based on historical references and conditional upon cross-compliance to environmental, animal welfare and food quality criteria.

Before the end of this year, Stuart Harbison, Chairman of the WTO Agriculture Committee, is expected to take various country proposals into account in producing a paper which will form the basis of further negotiations on modalities.

Countries in the WTO are scheduled to reach agreement on modalities for reform by the end of March 2003 and to

submit detailed schedules for reduction commitments, consistent with the agreed modalities by the 5th WTO Ministerial meeting in September 2003. The Doha Round is due to be completed by January 2005.

As the Doha Round discussions proceed, several 'new issues' have arisen. Those most applicable to beef and livestock industries include the following:

- animal welfare as a 'non-trade' concern. Some countries are arguing for 'green box' subsidies to compensate producers for increased costs of maintaining higher animal welfare standards;

- geographic labelling is being raised as an issue for a range of agricultural products; and

- environmental concerns are also being raised in a similar vein to animal welfare concerns.

3 SUBSIDIES AFFECTING THE BEEF MARKET

A vast array of mechanisms are employed by countries to protect their beef producers and other agricultural producers. Tariffs and tariff quotas have the effect of raising domestic prices above world prices. The support to producers thus generated is included in what the OECD terms 'market price support'. This type of support is highly trade-distorting.

In addition to tariffs and tariff quotas, developed economies that significantly protect their beef industries have an array of subsidy payments to producers. Where these are directly linked to market prices or current production, they, too, are trade-distorting, and are also classified as 'market price support' by the OECD. They are included in the 'amber box' in WTO parlance (chart 6).

Other subsidies are, to varying degrees, less related to current production and prices, but can be production- and trade-distorting. Some are in the 'blue box' and include 'headage' payments, or payments made on a fixed number of animals. They are production-enhancing, even though they are not subject to reduction commitments under the WTO. Other subsidies are generally termed 'direct income support' and are included in the so-called 'green box'. They are not subject to reduction commitments under the WTO. However, even direct income support measures ultimately have some influence on production. Without them, producers may otherwise pursue other activities or scale

back the level of their operations — thus reducing production in the longer term. Finally, some measures provide support to the industry in general, such as government support for research. These measures, too, are invariably classified as being in the 'green box'.

6 **Stylised support measures to beef producers**
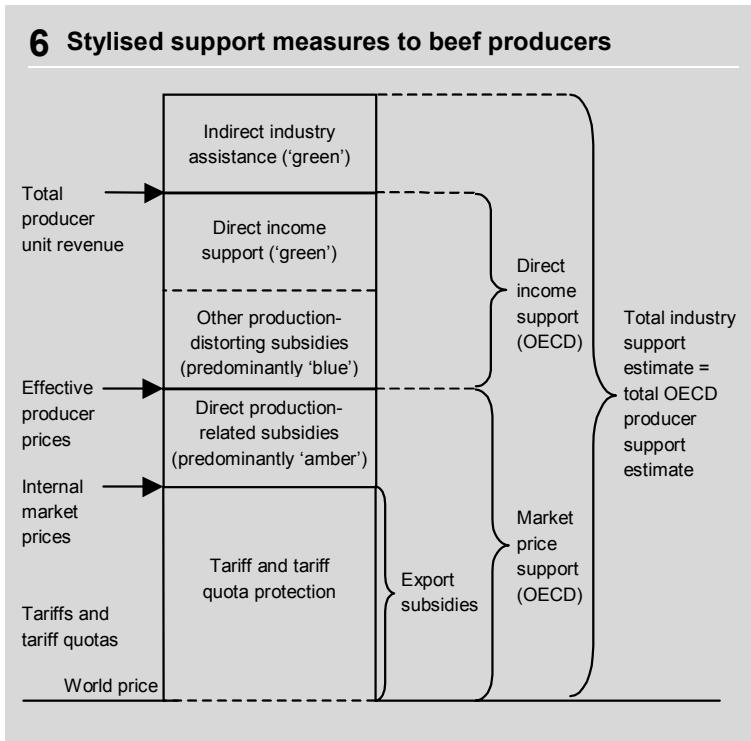
Overall, there has been some shift away from market price support to other, more direct forms of assistance to beef producers in the major beef-importing countries (chart 7). But for the European Union, the overall levels of assistance have increased. In recent years, the percentage PSE for the European Union has been inflated because of measures taken to combat FMD and BSE. Even in the absence of these disease response measures, however, it is estimated

that the PSE for the European Union would still have been over 80 per cent.

7 **PSEs for beef and proportion of market price support in total support —** major beef importing countries, 1990 to 2001

■ 1990   ■ 2001

Proportion of maket support in total support (%)

■ 1990   ■ 2001

Producer support estimates (%)
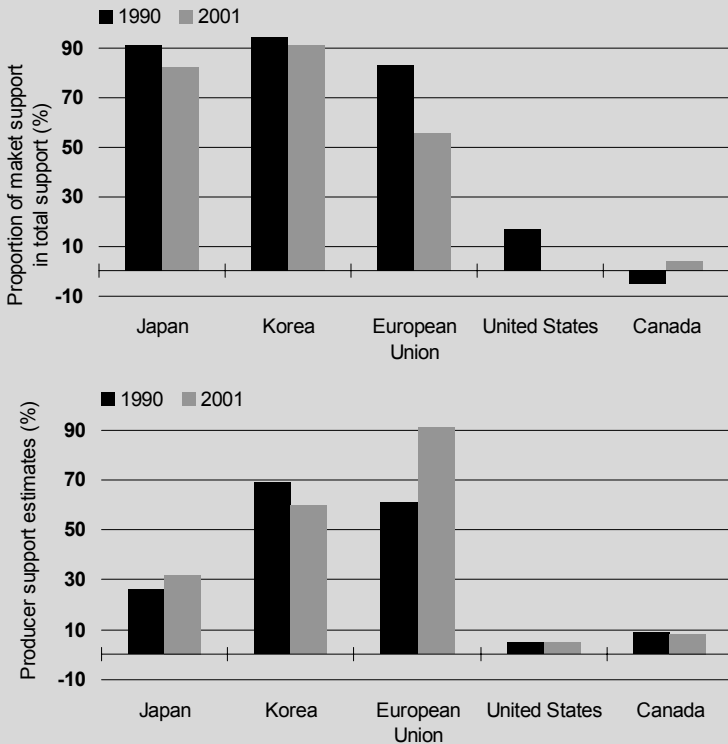
Source: OECD.

Support measures in individual countries

European Union

The European Union is both a major beef importer and exporter, and since 1979, has been a net exporter. In 2001, exports to third countries amounted to 547kt carcass weight equivalent (cwe), while imports from non-EU countries totalled 378kt cwe (Meat and Livestock Commission 2002).

Beef in the European Union is one of the most highly protected agricultural sectors in the world. Support is provided through:

- tariff quotas which severely restrict market access;
- internal support in the form of intervention buying and private storage aids to maintain domestic prices;
- direct payments to producers of an array of beef premiums; and
- export refunds paid to beef exporters.

Market access

The European Union maintains numerous beef import tariff quota arrangements, which, in total, amount to around 350kt cwe. In addition, around 29kt of beef in 2000-01 and over 45kt in 2001-02 were imported out-of-quota and attracted full levy rates.

Export subsidies

With the European Union producing beef surplus to domestic requirements, the surplus must be exported. But with domestic prices higher than world prices, export refunds are paid to exporters to help bridge the gap so that

the European Union can be competitive in world markets. Export refunds vary according to the type of beef exported and are not applied to all exports. They also vary according to export destination. Thus, the European Union in effect 'targets' certain markets.

Under the WTO Agreement on Agriculture, the European Union is now limited to providing export refunds on a maximum of 817kt cwe of beef exports. This, however, is well above the 547kt cwe of beef exported with subsidies in 2001. In 1996-97, export refunds were limited by the EU commitments under the Agreement on Agriculture, but with intervention prices having dropped by 20 per cent under Agenda 2000 reforms and lower volumes of exports since then, EU beef exports that attract export refunds are now well under the WTO limits.

Domestic support arrangements

One of the main mechanisms for supporting the domestic beef market has been a system of intervention buying. When domestic beef prices fell below a certain level, traders could sell beef into intervention stocks. Sales were on a tender basis and applied to certain types of beef. Inter-vention stocks could either be sold to special domestic outlets or exported.

Intervention stocks rose rapidly to a peak of 526kt in 1997, following the BSE incursion in the United Kingdom. But these were subsequently sold, with stocks declining to less than 2kt in 2000. A further EU-wide BSE scare occurred in 2001 which caused stocks to rise again.

Under the Agenda 2000 reforms (European Commission 2000), public intervention was replaced by private storage aid from July 2002, except in cases of extreme market conditions. Also under Agenda 2000, the intervention price

for beef was reduced by 20 per cent. Direct payments to producers were increased to compensate.

Beef producers in the European Union currently receive several direct subsidies. A beef special premium scheme provides payments on male animals for fattening. Payments vary between €150 per head for steers and €210 per head for young bulls. Steers can receive two payments in their life. There is also a suckler cow premium of at least €200 per head, and a slaughter premium of €80 per head for adult animals and €50 per head for calves. Limits apply in member states through the National Envelope system. Some premiums are modified according to stocking density.

8 **Expected expenditure in the EU beef and veal sector —**
European Agricultural Guarantee and Guidance Fund

Domestic support — intervention stage	2001 actual	2001 appropriations	2002 appropriations
	€ million	€ million	€ million
Export refunds	661	572	488
Intervention storage	-83	237	522
Suckler cow premium	1 566	1 736	1 880
Additional suckler cow premium	63	102	97
Special premium	1 299	1 619	1 788
Slaughter premium	8	716	1 184
Extensification premium	715	757	891
Exceptional support measures	292	346	390
Compulsory slaughter program	21	13	75
Other	-	880	780
Total	**4 540**	**6 978**	**8 095**

Source: Official Journal L29 of 31 January 2002 — Final adoption of the general budget of the European Union for the financial year 2002.

Expenditure from the European Agricultural Guarantee and Guidance Fund on the various subsidy schemes amounted to €7 billion in 2001 and €8 billion in 2002 (table 8).

9 **Decomposition of support estimates to producers —** European Union, 2001

	Unit	Aggregate	Average per farm	
			€	US$
Market price support				
Border reference price	€/t	1 438	-	-
Internal market price	€/t	3 165	-	-
Market price differential	€/t	1 727	-	-
Market transfers from consumers to producers	€ millions	11 833	6 693	5 976
Budgetary transfers	€ millions	1 695	959	856
Total market price support[a]	*€ millions*	*13 506*	*7 639*	*6 820*
Direct income payments				
Headage payments, slaughter premiums	€ millions	6 538	3 698	3 302
Based on inputs and input constraints	€ millions	3 222	1 822	1 627
Other	€ millions	680	385	344
Total direct income payments[b]	*€ millions*	*10 440*	*5 905*	*5 272*
Total producer support estimate	**€ millions**	**23 945**	**13 544**	**12 093**

[a] Small adjustment for excess feed costs paid by producers. [b] Including payments from national governments.
Source: derived from OECD database.

Decomposition of the total support to the EU beef sector is shown in table 9. There are an estimated 1.77 million farms with cattle in the European Union, and on this basis, total support amounts to €13 500 (US$12 000) per farm. Expenditures for BSE control amounted to an estimated

€1.3 billion in 2001. In the absence of this expenditure, support per beef-producing farm would still have amounted to around €12 800 (US$11 400). This total level of support also amounts to around €970 (US$840) per animal slaughtered in 2001.

Japan

Japan's beef import regime has changed significantly in the past decade. The only formal trade barrier now is an applied tariff of 38.5 per cent. But Japan has reserved the right to impose safeguard tariffs in the event of a 17 per cent increase in imports[3]. If safeguard action is taken, tariffs increase to 50 per cent — the current bound rate.

Modest market recovery is expected to occur in Japan in 2003, after consumer confidence was shaken in 2001 and 2002 by a series of BSE detections. Given improved consumer confidence, it is entirely possible that beef imports into Japan will rise by more than 17 per cent. This could trigger the safeguard action by around August 2003.

Domestic support

A deficiency payments system operates in Japan whereby producers are guaranteed a standard price in most instances. This guaranteed price is set at the beginning of each fiscal year, and if the average quarterly market price for beef calves is below this price, a deficiency payment is made to producers equal to the difference between the guaranteed price and the average market price. Some minor adjustments are made to payments if market prices fall substantially, that is, below a 'rationalisation target price'.

---

[3] The safeguard trigger formula is quite complex. It operates over each Japanese fiscal year on a cumulative quarterly basis.

In addition to the above, and to support domestic producers following the detection of BSE, the Japanese government introduced a ¥207 billion (US$1.7 billion) subsidy program in 2002. This includes minimum prices for carcasses and sale of calves, and income and profit guarantees for lot-feeders. Measures also include enhanced inspection systems and ensuring safety assurance for meat (table 10). Some of these measures were already in place, but budget allocations to them have been increased, as low livestock and meat prices are expected to trigger these stabilisation schemes and increase government payments. The impact of these measures will further enhance recovery in the domestic livestock sector.

10 **Japan's additional BSE subsidies —** fiscal year 2002–03	
	¥ billion
Stabilisation of management for farmers and industry	178.5
▪ stabilisation of beef carcass price	
▪ emergency support for fattening management	
▪ stabilisation of beef calf producers management	
▪ stabilisation of beef cattle breeding management	
Enhanced inspection system	0.2
Ensuring safety and assurance for meat	4.8
Appropriate processing of livestock by-products	23.0
Total BSE subsidies program	**206.5**
Source: Wilson (2002).	

Prior to the BSE incursion in Japan, some 82 per cent of the assistance to beef producers was afforded through market price support, and nearly all of this resulted from tariff support. In 2001, direct payments based on output amounted to ¥14.9 billion or 8 per cent of total producer support. A further 10 per cent or ¥17.0 billion was provided, based on input use. Support estimates on a per farm basis are shown in table 11.

11 **Support levels to Japanese beef farmers prior to the BSE incursion – 2001**

	Average per farm	
	¥'000	US$
Market price support	1 028.8	8 467
Payments based on output	104.7	862
Payment based on input use	119.4	983
Total support level	**1 252.5**	**10 309**

Source: derived from OECD database

South Korea

Like Japan, South Korea has dismantled its previous complicated import quota scheme in favour of a tariff-only barrier of 40.9 per cent at present, phasing down to 40 per cent in 2004. Quota restraints on imports were eliminated in January 2001. Border support is by far the main source of assistance to South Korean beef producers, accounting for approximately 91 per cent of total support.

In 2001, a calf-breeding stabilisation scheme was introduced. This is a deficiency payment scheme where stabilisation target prices were set at US$930 for calves sold for slaughter. However, deficiency payments were paid to a maximum of US$194 per calf (OECD 2002). For 2002, the program has a budget allocation of approximately US$51 million (USDA 2002).

Other domestic support programs include assistance for the establishment of large-scale calf-breeding operations (US$4.8 million) and subsidies for production of Hanwoo beef cattle designed to encourage retention of breeding stock (US$20.7 million). A further program is designed to improve the quality of Hanwoo beef.

Per farm support levels for 2001 are shown in table 12.

12 Support to South Korean beef producers — 2001

	Aggregate	Average per farm	
	W billion	W '000	US$
Market price support	1 030.7	3 560	2 762
Payments based on animal numbers	41.3	142	110
Payments based on input use	23.2	80	62
Direct income payments	30.5	105	81
Total support level	**1 128.6**	**3 896**	**3 022**

Source: derived from OECD database.

4 THE BASE CASE PROJECTIONS

The implications of reducing production and export subsidies are examined by using the GMI model. This is a very detailed multicountry, multicommodity, Armington style model of world meat production, consumption and trade. Commodities are distinguished by source, and commodities from different sources are imperfect substitutes — for example, Australian grass-fed beef is a different product from NZ grass-fed beef and US grain-fed beef.

The approach taken is to use the model to derive a set of 'base case' projections of all key parameters, based on assumptions about exogenous variables such as economic growth rates, population growth, exchange rates and so on. The effects of reducing or eliminating production and export subsidies are then simulated and the results are reported as deviations from the base case.

Projections under the base case

The base case relates to a set of projections based on the assumption that there will be no changes in policy, apart from those changes that have already been negotiated and are certain to be implemented. This allows for different scenarios to be imposed on the model to determine how they change outcomes from the base case.

13 Projections for beef in key markets — 2001 to 2010

	2001	2002	2005	2010
	kt cwe	kt cwe	kt cwe	kt cwe
United States				
Production	11 983	12 251	11 336	12 074
Consumption	12 348	12 591	11 860	12 348
Exports	1068	1 137	1 087	1 300
Imports	1 434	1 472	1 606	1 570
Australia				
Production	2 008	2 350	2 571	2 839
Consumption	565	688	729	757
Exports	1 445	1 420	1 844	2 083
Canada				
Production	1 250	1 214	1 249	1 319
Consumption	967	939	926	977
Exports	607	595	629	657
Imports	316	320	306	314
New Zealand				
Production	598	590	622	692
Consumption	123	122	123	119
Exports	499	481	513	586
Mexico				
Production	1 925	1 930	2 063	2 269
Consumption	1 844	2 366	2 458	2 729
Imports	436	446	411	475
Japan				
Production	453	460	496	469
Consumption	1 538	1 188	1 517	1 577
Imports	1 008	675	966	1 055
South Korea				
Production	243	200	184	210
Consumption	223	649	707	921
Imports	473	440	514	702

13 **Projections for beef in key markets —** 2001 to 2010
continued

	2001	2002	2005	2010
	kt cwe	kt cwe	kt cwe	kt cwe
European Union				
Production	7 263	7 550	7 615	7 915
Consumption	6 599	7 332	7 286	7 436
Exports[a]	484	560	643	732
Imports[a]	226	303	285	253
Brazil				
Production	6 903	7 050	7 601	8 464
Consumption	6 715	6 773	7 320	8 174
Exports	335	390	397	417
Argentina				
Production	2 625	2 750	2 920	3 178
Consumption	2 475	2 486	2 578	2 729
Exports	163	280	357	465
Uruguay				
Production	420	440	479	526
Consumption	190	190	190	196
Exports	144	250	289	330
China				
Production	5 600	5 880	6 615	7 781
Consumption	5 538	5 834	6 595	7 781
Exports	45	52	30	12
Imports	6	6	8	12

a Does not include intra-EU country trade.

Source: CIE based on GMI model.

Generally, movements in production and consumption in the base case reflect population and income growth in the absence of any major policy changes, but there are important trade pattern developments which stem from recent events and assumptions about some exogenous

parameters. Projections for beef in key markets are detailed in table 13.

A key driver of markets in the Pacific Basin over the past decade has been the substantial growth in US beef production and exports. The main source of this production growth has been increased carcass weights, but with recent significant increases in feed grain prices, some decline in lot-feeding and US production is projected through to 2005. Thereafter, some recovery in production is expected. US beef consumption is projected to be flat over the decade, reflecting continued competition from poultry and pork at retail. With imports constrained by tariff quotas, the net result of production and consumption trends is initially some decline in US exports, but moderate growth after 2005.

The growth in US exports is likely to be focused mainly on South Korea (chart 14). This is at the expense of some US shipments to Japan.

The Canadian beef sector pattern of developments is forecast to be similar to that of the United States, with consumption showing little growth, production recovering from declines in 2002, and exports showing moderate growth.

In contrast, in Australia and New Zealand, beef production is projected to grow by around 2 per cent per year over the next eight years. Reflecting different assumptions about population growth, beef consumption in New Zealand is projected to remain essentially flat, but beef consumption in Australia is projected to experience some growth. Exports from both countries are projected to expand significantly compared with 2001. Australia's exports, in particular, are projected to increase to Japan and several other markets, especially South Korea (chart 14).

14 **Forecast exports to key countries from the United States and Australia —** 2001 to 2010

United States ■ 2001 ■ 2010

y-axis: Carcass weight (kt), 0 to 500

Canada, Japan, South Korea, Mexico, Other

Australia ■ 2001 ■ 2010

y-axis: Carcass weight (kt), 0 to 600

Canada, Japan, South Korea, United States, Taiwan, Other
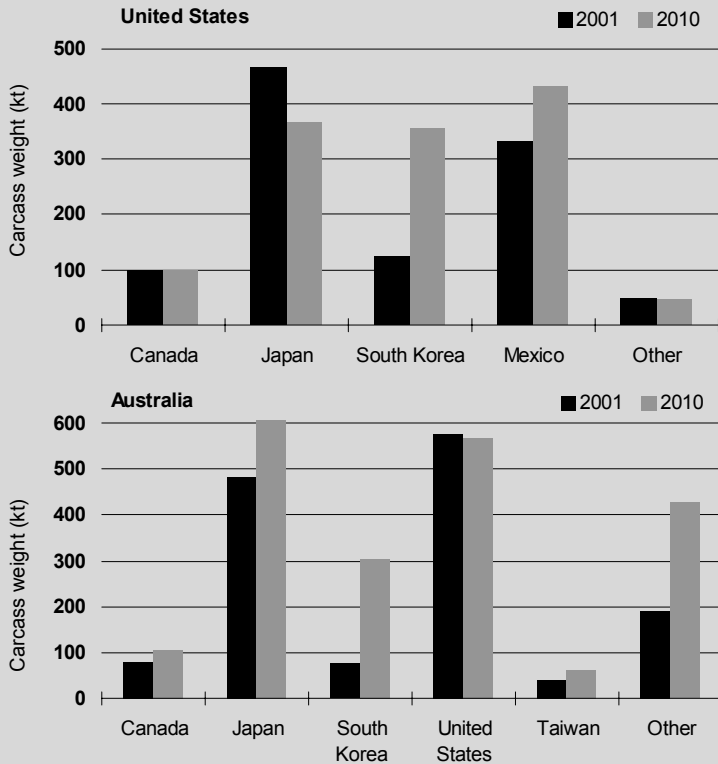
Source: CIE.

Japanese beef consumption suffered a significant setback in 2002 following the BSE incursion, but consumption is projected to slowly recover over the decade. Likewise, imports are projected to recover gradually. Australia is primarily projected to fill any gap in the Japanese import market, as the United States concentrates more on the South Korean market.

Production and consumption in Mexico are projected to grow at nearly 2 per cent per year, implying only moderate growth in imports, which are projected to be sourced from

the United States. Under the North American Free Trade Agreement (NAFTA), there are no trade barriers between the United States and Mexico.

Strong growth in production and exports is projected for the main beef-producing South American countries. It is assumed that the large-scale FMD vaccination programs in Argentina and Uruguay will prevent beef from these countries being imported into South Korea and Japan. However, it is assumed that the United States and Canada will permit imports from Argentina and Uruguay during 2003 and thereafter.

Demand in the European Union is projected to be flat, with imports continuing to be constrained by market access barriers. EU exports are projected to expand strongly under the assumption of no change in support policies.

Significant production and consumption increases are projected for China, with production matching consumption. China is projected to remain a small player in world trade.

5 SIMULATION RESULTS

T he effects of removing or reducing production and export subsidies are assessed by alternative simulations using the GMI model. The results are reported in this chapter as deviations from 'base case'. Particular emphasis is given to reporting the effects on producers in the Five Nations and in South American countries.

The framework

To assist understanding of the simulations undertaken, chart 15 shows a simplified representation of the complex system of supports in the EU beef sector. The chart, with minor modifications, can also be applied to an understanding of the simulations on removing Japanese and South Korean direct support to farmers.

From chart 15, if EU farmers received no support, they would receive the world price at A. Tariffs and tariff quotas raise the internal EU market price to B so that AB represents the tariff equivalent of market access barriers.

On top of this, there are other internal measures, such as intervention buying and private storage, which further raise the internal market price to C.

The total price effect of tariffs and tariff quotas, plus intervention buying/private storage is referred to as per unit market price support, represented by AC. Total market price support is represented by AC x Q and is considered

by the WTO to be 'amber box' support. Per unit market price support is also equal to per unit export subsidies. EU beef that is excess to domestic consumption requirements is rendered competitive on world markets through the use of export subsidies.

15 **Simplified representation of support to EU beef farmers**

Price/unit subsidy

Total farmer unit returns — E

Direct income support measures ('green')

Diffuse division line — D

Production-distorting subsidies, ie. headage payments ('blue')

Observed internal EU market price and price to producers and consumers — C

Intervention purchases and private storage aids

Unit market price support — also, unit export subsidies

B

Tariffs and tariff quotas

World price — A

Quantity produced Q

Other subsidies represented by CD x Q are production-distorting to varying degrees. These include the suckler cow premium, the special premium on male animals, the slaughter premium, and others discussed earlier in chapter 3. These are paid to producers according to the number of animals farmed and/or slaughtered. These are deemed under WTO provisions to be 'blue box' payments if they are paid on a fixed number of animals. All of these payments, except the recently-introduced slaughter premium

(yet to be notified), were classified as 'blue box' payments in EU notifications to the WTO.

Finally, there are other subsidies paid to producers which enhance their incomes, but which have a minimal impact on enhancing beef production (DE). These are considered to be 'green box' payments under the Uruguay Round Agreement.

The simulations reported here explore the implications of the production-enhancing subsidies represented by CD x Q. Measures which fall within DE are ignored. Other simulations explore the impact of removing export subsidies.

Based on OECD estimates, the shaded area in chart 15 (that is, CD x Q) amounts to about €6.5 billion. This compares with market price support (AC x Q) of an estimated €13.5 billion.

The simulations

The following three simulations were undertaken.

Removal of EU production-distorting subsidies

Simulation 1: €6.5 billion of production-enhancing subsidies (CD x Q in chart 15) in the European Union are removed from 2005 onwards

In the base case, it is assumed that the level of direct support (CD x Q) is all production-distorting and is maintained over the projection period. This support includes the slaughter premium, the beef special premium, the suckler cow premium, the extensification premium and other such support measures which in total are estimated to cost taxpayers around €6.5 billion (US$5.8 billion).

In *Simulation 1*, this level of support is removed.

Removal of EU export subsidies

Simulation 2: All EU export subsidies are eliminated from January 2005.

In this simulation, it is assumed that the European Union agrees to eliminate all export subsidies from January 2005, the mandated completion date for the Doha Round.

Removal of domestic subsidies in Japan and South Korea

Simulation 3: Removal of all production subsidies in Japan and South Korea in 2005.

It is assumed that the substantial domestic support measures introduced in Japan in 2002 to address the BSE incursion are maintained until 2005, at which time they, together with all other domestic support measures, are removed. In the base case, all measures are maintained for all years to 2010. It is also assumed that only the 'stabilisation of management' component (¥178.5 billion) of the BSE rescue package of measures is production- and trade-distorting (see table 10).

In South Korea, it is assumed that all domestic supports are removed in 2005 and beyond.

Simulation results

Removal of EU production-distorting subsidies

For *Simulation 1*, removing €6.5 billion of production subsidies reduces EU beef production — by an estimated 11 per cent. This raises the internal EU market price so that EU beef consumption falls — by an estimated 480kt cwe. Changes in imports are relatively small because they remain constrained by tariff quotas which are binding, and

additional imports are constrained by high out-of-quota tariffs. EU exports also fall by an estimated 260kt cwe.

EU producers experience a reduction in profits. Their per unit returns effectively fall by approximately a quarter through loss of direct subsidies, but there is some compensatory gain in higher internal EU market prices (table 16).

16 **Medium term responses in the European Union to the elimination of EU production-distorting subsidies (Simulation 1) —** deviations from base case

Change in	Unit	Response level	%
Consumption	kt cwe	-480	-7
Beef production	kt cwe	-800	-11
Producer profits (farm level)	US$m	-3 810	-46
Gross value of production	US$m	-5 330	-32
Exports	kt cwe	-260	-40

Source: GMI model.

Taxpayers are saved the burden of having to fund €6.5 billion of production subsidies. These funds have other opportunity benefits in the economy.

South American countries gain most

For *Simulation 1*, the effects of removing EU production-distorting subsidies is to raise world beef prices, and this is reflected in somewhat higher farm prices, gross value of production and producer profits in other countries (table 17). The effects are far more pronounced for South American countries than those of the Five Nations.

The explanation for these results lies in the closer trade linkages between South American countries and the European Union than for the other countries. South American countries are not only the largest beef exporters

to the European Union, but also compete with EU exports in third country markets in the Middle East and North Africa. Hence, South American countries not only gain from somewhat higher prices for their exports to the European Union, but also from much reduced competition from the European Union in North African and Middle East markets. The beef markets of South American countries are closely interlinked. Hence, increased prices for exports from Argentina and Uruguay, the main exporters, flow through to other South American markets. The substantial benefits to Brazil, therefore, reflect the larger size of the Brazilian beef industry. In percentage terms, there are greater gains in producer profits to Uruguay and Argentina.

17 **Effects on other countries of removal of EU production-distorting subsidies (Simulation 1) —** deviations from base case

Country	Farm price	Gross value of production		Producer profits		Exports	
	US¢/kg lw[a]	US$m	%	US$m	%	kt cwe	%
Australia	1.9	82	1.7	51	2.7	21	1
Canada	0.7	12	0.3	8	0.4	1	0
Mexico	0.5	14	0.3	9.8	0.4	1	0
New Zealand	1.0	8	0.8	6	1.1	1	0
United States	0.7	108	0.3	78	0.3	2	0
Argentina	3.8	158	3.1	112.6	4.5	46	13
Uruguay	6.3	48	4.8	30.3	6.9	10	3
Paraguay	1.8	7	1.5	4.8	2.1	2	19
Brazil	3.5	369	1.6	263.8	2.3	56	14

a Live weight.

Source: GMI model.

Effects of eliminating EU export subsidies

In the base case, it is assumed that the European Union applies export subsidies at their current *ad valorem* rate until 2008. It is only then that WTO limits on export subsidies begin to apply and constrain EU exports. Thereafter, subsidy rates are adjusted so that the European Union complies with its WTO obligations.

Eliminating EU export subsidies causes a substantial fall in EU exports, with product being diverted onto the domestic market causing internal EU market prices to fall. This raises domestic consumption, but lowers production (table 18). It is assumed that producers are not compensated for any loss in market prices.

18 **Effects on the EU beef market of eliminating EU export subsidies (Simulation 2) —** deviation from base case

Change in	Unit	Response level	%
Consumption	kt cwe	170	2.3
Beef production	kt cwe	-150	-1.9
Producer surplus (farm level)	US$m	-780	-9.5
Gross value of production	US$m	-1 093	-6.6
Exports	kt cwe	-340	-52.2
EU farm price	US¢/kg lw[a]	-10.4	-4.8

[a] Live weight.

Source: GMI model.

Table 19 shows a similar pattern of response by other countries to that for *Simulation 1*. Overall, the effects are relatively small for the Five Nations countries. Of these, Australia benefits the most, with producer profits increasing by about 3 per cent. This reflects Australia's relatively greater involvement in Middle East and North African beef markets than the other Five Nation countries.

19 **Effects on other countries of eliminating EU export subsidies (Simulation 2)** — deviations from base case

Country	Farm price	Gross value of production		Producer profits		Exports	
	US¢/kg lw[a]	US$m	%	US$m	%	kt cwe	%
Australia	2.1	93	2.0	58	3.1	25	1.4
Canada	0.2	5	0.1	3	0.2	1	0.1
Mexico	0.2	5	0.1	4	0.2	1	1.6
New Zealand	0.9	8	0.7	6	1.0	2	0.3
United States	0.3	48	0.1	34	0.1	1	0.1
Argentina	4.8	196	3.9	140	5.6	59	16.5
Uruguay	7.8	53	6.0	38	8.5	12	4.3
Paraguay	0.6	2	0.5	2	0.7	1	6.0
Brazil	4.2	450	2.0	321	2.8	72	4.3

a Live weight.

Source: GMI model.

However, significant percentage gains in producer profits are made by the main South American beef exporters, Argentina and Uruguay. Here, producer profits increase by nearly 6 per cent and 9 per cent respectively. The explanation is similar to that for Simulation 1. Again, Brazil gains substantially in absolute terms because of the greater size of its beef industry.

In summary, the main winners from removal of EU production and export subsidies are beef producers in the South American countries, principally Argentina and Uruguay, with Brazilian beef producers being big winners in absolute terms. Eliminating export subsidies has a slightly larger impact than eliminating production subsidies.
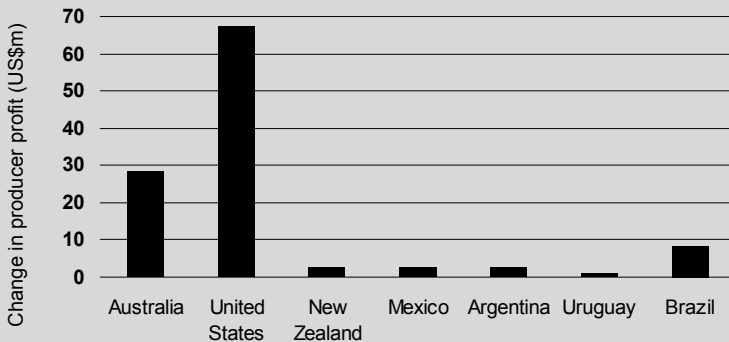
Effects of removing domestic subsidies in Japan and South Korea

20 **Effects of removing domestic subsidies in South Korea and Japan (Simulation 3)** — deviation from base case

Change in	Unit	South Korea	Japan
Consumption	kt cwe	-2	-5
Production	kt cwe	-3	-32
Imports	kt cwe	1	26
Producer profits	US$m	-78	-1 065

Source: GMI model.

21 **Impacts on selected other countries of removal of domestic supports in Japan and South Korea (Simulation 3)** — deviation from base case

Source: GMI model.

Removing production subsidies in Japan and South Korea has the effect of lowering domestic production. The impact of removing domestic subsidies in South Korea, however, is relatively small, because the majority of support provided to producers is through tariff support. In Japan, there is relatively little impact on consumption — imports increase

to fill the gap in demand created by lower domestic production (table 20). The increased import demand is met mainly by the United States and Australia. This increases farm prices and producer profits in these countries (chart 21).

Removal of South Korean and Japanese domestic subsidies on beef has a relatively small effect on countries other than the United States and Australia, the main beef suppliers to South Korea and Japan.

Comparisons with removal of market access barriers

Considerable caution should be exercised when comparing gains by exporters from removal of market access barriers by major importers, with removal of export subsidies or even production subsidies. This is because the three pillars of support — market access barriers, domestic support and export subsidies — are very closely inter-linked. For example, removal of tariffs and tariff quotas can eliminate the need for export subsidies. Also, when export subsidies are eliminated, it has the effect of diverting product from export onto the domestic market and lowering domestic prices and, therefore, market price support levels. The overall effect on prices and production depends on whether compensatory direct production subsidies are paid to producers.

Simulation results in the Magellan Project so far point to the gains to beef producers in exporting countries from removing market access barriers as being relatively more important than gains from eliminating production-distorting subsidies or export subsidies individually. This applies particularly to exporters in the Pacific Basin. The simulations involving market access barriers are also

picking up the effects of removing the need for export subsidies.

Assessment of the Cairns Group proposal on export subsidies and domestic support

Export subsidies

The proposal to eliminate export subsidies in the beef market applies to only one exporter — the European Union — although a number of exporters would be affected should there be a requirement to discipline other measures that are comparable with export subsidies in kind, but not in impact, which affect export competition. Elimination of export subsidies by the European Union, as noted, would benefit South American beef producers the most. Of the other exporting countries, Australian beef producers would gain the most, with producer profits increasing by about 3 per cent.

EU producers would face lower returns because of reduced internal EU market prices. At issue, therefore, is the extent to which the European Union would wish to push for compensatory production subsidies to producers and how these might be delivered. If they were delivered as production-distorting measures — even though technically classed as exempt from reduction commitments (for example, in the 'blue box') — EU production levels would be maintained, and benefits to other countries from export subsidy elimination would be reduced. These benefits would not be completely compromised because there would still be a 'consumption effect' in the European Union, with increased consumption and lower exports.

Domestic support

The Cairns Group proposal is a push for more effective rules for reducing production-distorting subsidies, including tightening disciplines on the way supports are delivered and notified, to avoid production-distorting programs being classified as 'green box'. The dividing line between what measures are non-production-distorting and those which are is blurred in economic terms. In the long run, nearly all support measures would have a production-enhancing effect to some degree. But attempts to get effective reductions in subsidies that are definitely trade-distorting — such as the slaughter premium — is a step in the right direction.

Getting effective disciplines on domestic production subsidies will undoubtedly be one of the most difficult areas of negotiation. Removing production subsidies without allowing greater market access substantially impacts on domestic producers in the importing country, but also, the lower production means higher internal prices and lower consumption. The main gainers are taxpayers in general, who no longer need to fund inefficient production subsidies and who would have more money to spend on other goods and services. The results emphasise the importance of a balanced approach to reforms across the three pillars of support and, in particular, the importance of reducing market access barriers as a top priority.

6 CONCLUSIONS

Some important conclusions arise from the preceding analysis and that presented in the previous Magellan Project paper on market access (Five Nations 2001).

The European Union accounts for nearly three quarters of the support to beef farmers in OECD countries taken as a whole. South Korea and Japan also heavily subsidise their beef sectors, predominantly through market price support.

- Removal of production-distorting subsidies provides important gains to exporting countries. Removing EU production subsidies mostly benefits South American countries, while removal of domestic production subsidies in South Korea and Japan primarily benefits exporters in the Pacific Basin (predominantly Australia and the United States).

- The European Union is the only major beef-trading bloc which uses export subsidies. Removing these subsidies benefits mainly beef producers in South American countries. They are able to benefit from increased trade to the Middle East and North Africa, previously supplied by the European Union.

- The analysis has highlighted the close linkages between the three pillars of support — market access, domestic support and export subsidies. Reducing tariffs and tariff quotas forces prices towards world levels, eliminating the need for export subsidies and reducing the attractiveness of price-distorting domestic support measures. Removal of market access barriers provides

big gains to exporting countries, particularly the United States, Australia and, to a lesser extent, South American countries (Five Nations 2001).

- Our analysis of domestic support and the effects of its removal has also highlighted the issue of how the many forms of domestic support have varying degrees of production- and trade-distorting effects. Notifications within the WTO context give little guide as to how production-distorting a particular measure might be. This underlies the emphasis in the Cairns Group proposal on eliminating the 'blue box' and strengthening the disciplines on eligibility criteria for inclusion in the 'green box' category.

- While reductions in domestic support are important, analysis in this Magellan Project to date emphasises the larger gain to producers in the Five Nations and South America of removal of market access barriers. This is because market access barriers underpin most of the support to producers — market price support — and because reducing market access barriers simultaneously reduces the need for export subsidies.

REFERENCES

Commission of the European Communities 2002, *Communication from the Commission to the Council and the European Parliament: Mid Term Review of the Common Agricultural Policy,* COM (2002) 394, Brussels.

Committee on Agriculture 2002, *Domestic Support — Specific Input: Cairns Group Negotiating Proposal*, Report of Special Session 7623, 27 September 2002, Geneva.

European Commission Directorate-General for Agriculture 2000, *Cap Reform: the Beef and Veal Sector*, Fact Sheet, Brussels.

European Union 2002, *Official Journal*, L29, 31 January 2002, Brussels.

Five Nations 2001, *Global Beef Liberalisation, Magellan Project Phase 1: State of play and who gains*, Report supported by the Five Nations, funded by Meat and Livestock Australia, and prepared by the Centre for International Economics, Canberra.

Meat and Livestock Commission 2002, *European Handbook: The Common Agricultural Policy*, Vol. 1, Milton Keynes.

OECD (Organisation for Economic Cooperation and Development) 2002, *Agricultural Policies in OECD Countries: Monitoring and Evaluation*, 15th Edition, Paris.

USDA (United States Department of Agriculture) 2002, *Republic of Korea: Livestock and Products Annual 2002*, Global Agriculture Information Network Report KS 2044, Foreign Agricultural Service, Seoul.

Wilson, L. 2002, *Japan: Impact of BSE*, Market Information Service Market Brief June 2002, Meat and Livestock Australia, Sydney.

WTO (World Trade Organization) 2001, *Doha Ministerial Declaration*, WTO Secretariat WT/MIN(01)/DEC/ W/1, Geneva.