Agriculture in an open market economy
An Australian perspective

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In line with the experience of other developed countries, the importance of agriculture in the Australian economy has declined in some respects as the economy has matured. Nevertheless, the agricultural sector still accounts for about a quarter of total Australian exports and fluctuations in agricultural production and prices still have the potential to impact significantly on economic activity in the broader economy in the short term. Accordingly, developments in world agricultural markets have important implications both for the farm sector and the Australian economy in general. Key factors which will influence world agricultural markets over the next decade include world economic growth and the associated changes in dietary patterns in some regions, the recently concluded GATT round, developments in Eastern Europe and the former Soviet Union, and the move toward the formation of regional trading blocs.

The extent to which changes in world prices for rural commodities flow into Australian dollar prices will be influenced by movements in the Australian exchange rate. A wide range of factors affecting the exchange rate over the remainder of the 1990s are discussed, and it is concluded that the net effect will be some modest increase in the real exchange rate from 1993-94 levels.

Taking all of these factors into account, the real net value of farm production is projected to recover over the remainder of the 1990s from the lows of the past few years, but to remain somewhat below the level recorded in the late 1980s when world commodity prices last peaked. An important factor underpinning the projected recovery in farm incomes is the expectation that Australian interest rates will remain around their current levels.

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Introduction

From the beginning of European settlement the agricultural sector has featured prominently in Australian production and exports. Although this is still the case, the economic contribution of agriculture to the Australian economy has been declining in importance as the economy has developed. For example, while the real value of output from the agricultural sector has more than doubled since the early 1950s, the contribution of agriculture to gross domestic product and employment has fallen from close to 20 per cent in 1950 to around 4 per cent in the early 1990s. Over the same period agriculture's contribution to Australian exports declined from over 80 per cent to around 25 per cent.

However, the Australian agricultural sector still has the potential to cause or contribute to short term fluctuations in economic activity in the broader economy because of the variability of rural commodity prices and rural production. Short term changes in rural commodity prices and production flow through to the broader economy through their impact on the demand for inputs in the farm sector, including farm investment, as well as consumption spending by farm households. It has been estimated that a change in the gross value of farm production of $1 billion would cause a change in gross domestic product of between $1.5 billion and $2 billion in the same direction in the short term — that is, over a period of around one year (Crofts, Harris and O'Mara 1988).

The onset and subsequent breaking of the drought in the early 1980s illustrates the impact that the farm sector can have on the broader economy. The onset of the drought is estimated to have reduced Australian gross domestic product by around 1.7 percentage points in 1982-83 and contributed 3.1 percentage points to the recovery in the following year (Crofts, Harris and O'Mara 1988). More recently, the period of below trend growth in Australia's trading partners since 1990 is estimated to have reduced Australian gross domestic product by around 3 percentage points (Treasury 1993). A considerable part of the impact on the Australian economy would have stemmed from lower rural commodity prices on world markets.

As with most other developed countries, it is likely that the relative contribution of the Australian agricultural sector to gross domestic product will continue to decline. This implies that economic policy is less likely to be influenced by changes in the fortunes of the agricultural sector. Indeed, as has happened over the past few decades, the prospects facing the broader economy will increasingly affect those in the rural sector.

The main channels through which developments in the rest of the economy affect the prospects for the agricultural sector are interest rates and the exchange rate. While Australian economic growth has a significant influence on the demand for some agricultural commodities, such as meat, sugar and horticultural and forestry products, of more significance are the indirect implications of Australia's growth performance for inflation and the current account deficit and hence interest rates and the exchange rate. Developments in other exporting sectors also affect the rural sector through the exchange rate. For example, in the 1970s an expanding minerals sector led to an increase in the real exchange rate, which had an adverse impact on the agricultural sector. The continued expansion of Australia's mineral, manufacturing and service sectors could place similar pressure on the agricultural sector over the balance of the 1990s.

The remainder of this paper is divided into three sections. In the next section, prospective developments in the world economy likely to influence agricultural markets over the next decade or so are examined. This is followed by a discussion of the effects of changes in the exchange rate and interest rates on the farm sector, together with an ABARE assessment of the prospects for these variables over the remainder of the 1990s. The final section of this paper draws together the issues raised in the first two sections and presents ABARE forecasts for the agricultural sector over the remainder of the 1990s.

World markets for agricultural products

Over the next decade, a wide range of factors can be expected to exert a major influence on world agricultural commodity markets. Of these, the most pressing in the short term is the timing and extent of world economic recovery. Over the medium term, economic growth will be associated with changes in incomes and dietary patterns, especially in the developing world. It is these factors which will determine the basic trends in world demand for agricultural products.

A range of other key factors have the potential to influence or modify these underlying trends. These include the effects of the recently concluded GATT Uruguay Round of multilateral trade negotiations; developments in the European Union, especially in its Common Agricultural Policy; the growing trend toward the regionalisation of trade and the formation of trading blocs; economic and trade developments in the Asia Pacific region; the changing political and economic situation in Eastern Europe and the former

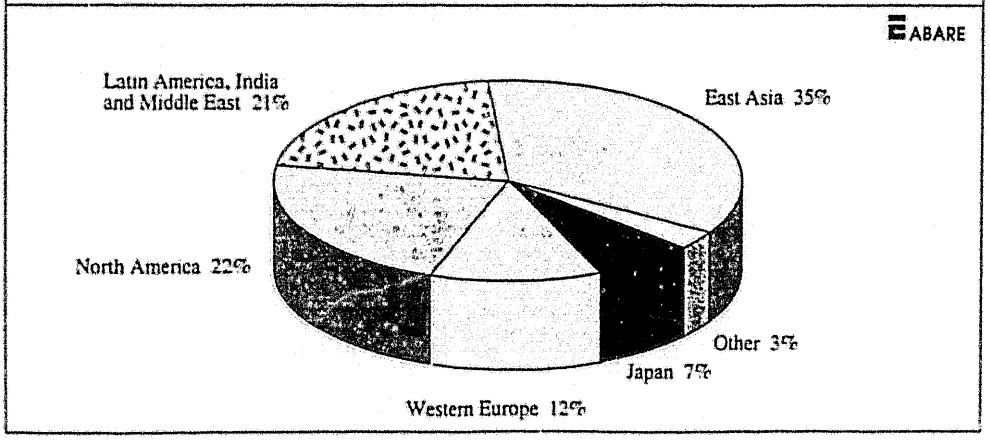
Soviet Union; and policy responses to global environmental issues. Each of these are considered briefly below.

World economic growth

The marked weakening in world economic growth, from an average of almost 3.5 per cent a year between 1986 and 1989 to an average of only 1.6 per cent a year between 1990 and 1993, has been a significant factor contributing to the 50 per cent decline in the real level of world rural commodity prices that has occurred since 1988-89. The decline in economic growth over this period has occurred mainly within the OECD countries and in the former centrally planned economies of the former Soviet Union and Eastern Europe. In contrast, the South East Asian economies, together with a number of other developing economies, have continued to grow solidly in response to high levels of domestic demand and intraregional export growth. The fact that the developing economies have managed to sustain relatively high rates of growth despite the slowdown in the OECD has been an important factor in preventing an even greater decline in rural commodity prices.

Growth in the world economy, excluding the former Soviet Union and Eastern Europe, is assumed to remain around 3 per cent in 1994 before strengthening to average around 4 per cent a year over the remainder of the 1990s. Between 1994 and 1999, OECD countries are expected to account for only about 45 per cent of the projected increase in world income (figure 1), compared with close to 60 per cent during the 1980s. East Asian countries are projected to account for around 35 per cent of the increase, while Latin America, India and the Middle East are expected to account for around 20 per cent. The economies of the former Soviet Union and Eastern Europe are not expected to make a significant contribution to world economic growth over the 1990s.

Figure 1. **Contribution to world growth, 1994 – 1999**



Average growth rates in the OECD are assumed to be below those achieved in the 1980s, continuing the downward trend experienced over the past few decades. Several factors are assumed to contribute to the continuation of this trend, including lower rates of labour force and productivity growth in some countries. The trend toward declining industrial production in the OECD as a share of gross domestic product is also expected to continue. In particular, labour intensive manufacturing is likely to continue to be relocated to low wage economies in Asia and Latin America.

This process is likely to be facilitated in the 1990s by the adoption of policies promoting macroeconomic stability, foreign investment and market based allocation of resources in a number of developing economies, particularly Mexico, Argentina, Chile, China and India. These policies, if implemented successfully, could improve investor confidence leading to increased domestic and foreign investment and an associated relocation of labour intensive manufacturing industries to these economies. Increased foreign investment may be supported by the consolidation of fiscal balances in some developed economies, especially in the United States, which could increase the supply of savings available to developing economies and hold world interest rates at lower levels than would otherwise be the case. As a result, average rates of growth in developing economies could continue to increase during the latter half of the 1990s.

As a result of these developments, economic growth in developing economies is expected to be at least as important as growth in the developed economies in determining the rate of growth in demand for, and prices of, primary commodities over the remainder of the 1990s. This is especially so considering the higher responsiveness of demand for agricultural commodities to changes in income in developing economies and the expectation that the relocation of some industrial production from developed to developing economies will continue. However, economic growth in existing major Australian commodity export markets, namely the OECD and Asian economies, will continue to be of critical importance in determining the volume of Australian commodity exports to those markets.

Changes in consumer demand and consumption patterns

Steadily rising incomes, combined with a high rate of population growth, indicates that much of the growth in global food demand over the next decade will be generated by the developing countries. Consumers in developing countries spend a higher proportion of their incomes (and also a larger proportion of any increase in income) on food than in the developed countries. Demand in developing countries also tends to be more responsive to price changes.

Over the past three decades, average food consumption per person has risen steadily in both the developed and developing countries. Not surprisingly, however, the average annual rate of growth in the developing countries (0.9 per cent) has been much greater than in the developed countries (0.4 per cent). As a result, average daily per person food consumption in the developing countries in the three year period 1986—88 totalled some 2400 calories, or about three-quarters of the average in the developed countries. This compares with a figure of 63 per cent in the period 1961—63 (FAO 1992).

In line with rising incomes, dietary patterns in the developing countries as a group are expected to continue the existing trend away from the consumption of starchy staple foods toward higher protein foods such as meat and dairy products. At the same time, beef and sheep meat could experience increasing competition from pig meat and poultry meat. This is especially likely to be the case in the developed countries where the trend toward a healthier lifestyle could result in some substitution of red meats by the 'white meats', with grainfed products attracting a premium price (Tie, Kottegé and Fisher 1993).

Estimates of the growth in demand for a number of livestock products in selected low, middle and high income developing countries over the period 1993–2000 are shown in table 1. The estimates were derived by combining forecasts of population and income growth in these countries with estimates of price and income elasticities. The estimates indicate that the highest rate of growth in demand for livestock products during the remainder of the decade is likely to occur in the middle and high income countries, especially the former. For example, demand for beef in the middle income developing countries is projected to grow by around 5.3 per cent a year, compared with 4.5 per cent in the high income group and 3.6 per cent in the low income group. In two of the middle income countries, Malaysia and Thailand, the estimated growth in demand for beef, at 5.9 per cent and 5.7 per cent a year respectively, is expected not only to be higher than the average growth rate for the group as a whole but also well above that in the high income developing countries of Taiwan (3.7 per cent) and South Korea (4.1 per cent). A similar pattern to that for beef can also be discerned in the case of the other livestock products (table 1) (Tie et al. 1993).

Table 1: Annual growth in demand for livestock products in developing countries, 1993–2000 a

			Beef			Sheep meat			Butter		
	Population growth	Per person income growth	Income elasticity of demand	Own price elasticity of demand	Growth in demand	Income elasticity of demand	Own price elasticity of demand	Growth in demand	Income elasticity of demand	Own price elasticity of demand	Growth in demand
	%	%			%			%			%
Low income countries	3.0	0.3	0.59	–0.4	3.6	0.62	–0.60	3.8	0.63	–0.3	3.5
Middle income countries	1.8	4.8	0.63	–0.49	5.3	0.78	–0.50	6.0	0.68	–0.6	5.7
– Malaysia	2.3	5.0	0.63	–0.49	5.9	0.78	–0.50	6.7	0.68	–0.6	6.3
– Thailand	1.4	6.0	0.63	–0.49	5.7	0.78	–0.50	6.6	0.68	–0.6	6.1
High income countries	1.4	5.7	0.42	–0.72	4.5	0.47	–0.41	4.5	0.59	–0.6	5.4
– Taiwan	0.9	5.0	0.42	–0.72	3.7	0.47	–0.41	3.6	0.59	–0.6	4.4
– South Korea	0.9	6.0	0.42	–0.72	4.1	0.47	–0.41	4.1	0.59	–0.6	5.0

a Estimates based on assumed 1 per cent a year decrease in agricultural prices.
Sources: Gardiner et al. (1989), Urban and Trueblood (1990), World Bank (1992).

The GATT Uruguay Round

After seven years of complex negotiations the main elements of the GATT Uruguay Round have now been agreed. In the case of agriculture, the final agreement contains broad commitments to increase market access for agricultural imports and to reduce domestic support levels and export subsidies. The reforms will be implemented over a period of six years commencing in 1995.

The central elements of the agreement on agriculture are outlined below (for a more detailed discussion see Andrews, Roberts and Hester 1994).

Market access

- Non-tariff barriers will be converted to tariffs. Those tariffs will be reduced from the levels estimated to apply in the base period (1986—1988) by an average of 36 per cent for agricultural products as a whole. The minimum reduction for an individual tariff item will be 15 per cent.

- Minimum access opportunities will be established in cases where imports by an individual country are not significant. Initially, minimum access will be equivalent to 3 per cent of the level of domestic consumption in the importing country in the 1986—88 base period and will be expanded to reach 5 per cent by the end of the implementation period. The measures to assure such access will vary between countries and commodities.

- Special measures are to apply for the conversion of Japan's support system for rice to one based on tariffs (tariffication). Japan will be permitted to delay tariffication for six years but will be required to provide minimum access for imports rising from 4 per cent of the 1986—88 average level of rice consumption to 8 per cent after six years.

Domestic support

- The value of domestic support for agriculture as a whole will be reduced by 20 per cent from the 1986—88 base level. For this purpose, domestic support is to be calculated as the difference between internal support prices and fixed external reference prices set at their 1986—88 level, multiplied by production, plus government payments other than those which are specifically excluded.

- Certain forms of direct payments, such as EC compensation payments and US deficiency payments, are excluded from reduction commitments for domestic support.

Export subsidies

- Volumes of subsidised exports will be reduced by 21 per cent and budget outlays on export subsidies by 36 per cent, from their 1986—90 averages.

- The Andriessen Assurance has been reaffirmed by the European Union, but has not been bound as part of the GATT agreement.

The improved market access, reduced domestic support and curtailment of subsidised exports expected to result from these reforms will increase world prices of agricultural commodities relative to what would otherwise be the case. ABARE has estimated the impact of the Uruguay Round agreement on world prices of agricultural products (table 2), (for a more detailed discussion see Andrews, Roberts and Hester 1994).

Table 2: World price changes resulting from the implementation of the Uruguay Round agreement

	%
Beef (FMD free)	6
Beef (FMD affected)	1
Pork	7
Sheep meat	3
Poultry meat	2
Butter	4
Cheese	20
Milk powders	16
Wheat	8
Corn	6
Other coarse grains	5
Rice	8
Soybeans	1
Other oilseeds	6
Cotton	2
Sugar	1

FMD: foot and mouth disease.
Source: Andrews, Roberts and Hester (1994).

It is evident from table 2 that, except for dairy products, the potential increases in world prices for most agricultural commodities as a result of the agreement are likely to be relatively modest — generally less than 8 per cent. In the case of grains, world prices would rise by about 5—8 per cent, while the price of beef produced in areas free of foot and mouth disease would rise by some 6 per cent. As implementation of the agreement is to be phased in over six years commencing in 1995 and it will take a further period

for a full adjustment of production, consumption and trade to occur, it is clear that the full effects of the agreement will not become evident until well into the next decade.

Overall, the gains to the value of Australian agricultural production as a result of the Uruguay Round are estimated to be moderate over the longer term. However, those gains are likely to have a substantial impact on net farm incomes. For major crops and livestock products used for food, the respective increases in the values of production and exports would be equivalent to 11 per cent and 13 per cent of the average values from 1988-89 to 1992-93 (table 3). It should be emphasised that the gains in prices and returns to producers reported in tables 2 and 3 are in comparison with levels which would have applied had there been no agreement which, in turn, would probably have continued to trend downward in real terms, as has been the case over recent decades.

Table 3: Changes in Australian production and exports a

	Change in volume %	Change in value $m
Production		
Beef	3	340
Sheep meat		10
Dairy products	1	320
Wheat	5	340
Coarse grains	1	70
Rice	3	15
Sugar	–	5
Total		1100
Exports		
Beef	7	330
Sheep meat	–	–
Dairy products	10	210
Wheat	7	320
Coarse grains	3	50
Rice	5	30
Sugar	–	10
Total		950

a The change in the value of Australian production and exports was estimated by applying the percentage change in world prices as a result of the reforms and the percentage change in the volume of production and exports as estimated from the model to the actual average value of Australian production and exports over the period 1988-89 to 1992-93. — Less than 0.5 per cent in absolute value.
Source: Andrews, Roberts and Hester (1994).

Reforms to the Common Agricultural Policy

In mid-1992, the European Union reformed its Common Agricultural Policy. The principal feature of the reforms is that internal support prices are to be reduced for some major temperate zone agricultural products, notably cereals and beef. These reductions are to be counterbalanced by compensatory direct payments to cereal and beef producers, with the payments being linked, in part at least, to actual areas planted to

crops and to cattle numbers. Changes for other commodities such as dairy products and sheep meat are only minor.

In the case of cereals, unit levels of support to producers are being maintained. However, the support is now being provided more through direct compensatory payments and less through internal price support than was previously the case. Reliance is also being placed on the partial decoupling of support and on area reduction programs to restrain surplus production, while lower internal prices are also expected to increase domestic cereals consumption. Distortions to world trade and prices should be reduced significantly by the stimulus to EC consumption of cereals as a result of the reduction in internal price support relative to what was previously the case. However, the extent to which any reduction in distortions is reflected in higher world prices will depend on the reactions of other producing countries, such as the United States, to the reforms (Roberts, Andrews and Rees 1992).

The reforms appear likely to have relatively little impact on beef production in the European Union for two reasons. First, the direct compensation payments which will be made to beef producers in the European Union will largely compensate for the decline in support prices, and are only weakly decoupled from production decisions. Second, beef producers will benefit from lower feed grain prices. On the other hand, the reforms may result in some increase in domestic consumption. On balance, beef surpluses in the European Union are likely to remain substantial and beef exports from the region will still need to remain highly subsidised in order to be competitive internationally.

The 1992 reforms to the Common Agricultural Policy appear likely to exert an important influence on world agricultural trade and prices throughout the 1990s. Essentially, the approach adopted has been to introduce regulatory measures to limit the extent of the market distortions and environmental costs associated with the system of price and income support. Some uncertainty remains, however, as to the extent of the effects on production, consumption and trade that are likely to flow from the reforms. In particular, important questions remain about whether the reforms will result in a significant reduction in export subsidies or merely a shift in the way in which such subsidies are paid (Andrews, Roberts and Love 1992).

It is evident that some key elements of the final GATT Uruguay Round agreement have been designed to validate aspects of the mid-1992 CAP reforms such as, for example, the exclusion of the direct compensation payments from GATT disciplines. Nevertheless, while the CAP reforms will go some way toward enabling the European Union to meet the requirements of the final GATT agreement, they will probably not be

sufficient in themselves to meet the full obligation of the Union, particularly with regard to cereals and beef.

The trend toward the formation of trade blocs

Over the past three decades, an increasing number of regional trading relationships have sprung up on the basis of economic, geopolitical, strategic and other considerations. The European Union is probably the economically strongest and best known of these regional groupings but other examples are the European Free Trade Association (EFTA), the Caribbean Common Market, the Closer Economic Relations (CER) agreement between Australia and New Zealand and the recently signed North American Free Trade Agreement (NAFTA) between Canada, the United States and Mexico. Under the provisions of NAFTA, it is proposed that trade barriers between the three signatory countries be phased out over a period of 15 years. The phasing out period commenced at the beginning of 1994.

In a 1992 ABARE study (Vanzetti, Hester and Andrews 1992), it was found that, if eventually implemented in full, NAFTA would have significant effects on the Mexican economy, especially the agricultural sector. The US economy will also be affected by the operation of the agreement but to a lesser extent. The removal of trade barriers between Mexico and the United States would be likely to result in an increased southward flow of grains and oilseeds, and an increased northward flow of live cattle, horticultural products and possibly sugar.

Australia does not compete with the United States in the Mexican market for farm products to any significant extent. Australia does, however, supply beef and sugar to the US market, as does Mexico, but the relatively small quantity of Mexican exports to that market compared with total US imports of these products suggests that the impact of NAFTA on Australian agricultural exports are likely to be relatively small. This is supported by the findings of the ABARE study which concluded that the impact of the removal of trade barriers under the provisions of NAFTA on world prices of, and trade in, key farm products is likely to be small, even after the agreement has been implemented in full during the next decade. Thus, in the medium term at least, Australia and other agricultural exporters are unlikely to be affected significantly by the trade creation and diversion effects on world markets of NAFTA (Vanzetti, Hester and Andrews 1992).

Nevertheless, from an Australian perspective, the movement toward the regionalisation of trade, as exemplified by NAFTA, is very much a second best option compared with multilateral trade liberalisation. Thus, while the formation of free trade areas, as

distinct from customs unions, such as the European Union, does represent a movement toward freer trade, some potential gains from trade with third countries are forgone because of the maintenance of external trade barriers and the consequent trade diversion effects (Vanzetti et al. 1992).

The adverse outcome for world trade associated with the increasing proliferation of trading blocs is a major reason why Australia should continue to promote multilateral trade reform under the auspices of the GATT. It should also continue to press for greater international acceptance of regional trade forums such as the Asia Pacific Economic Cooperation (APEC) grouping, together with its concept of open regionalism, which differs radically from the discriminatory nature of groups such as the European Union.

The role of APEC

Perhaps the most important principle on which APEC was founded was that it should not operate as an Asian Pacific trading bloc. Thus, for the first time, a regional group of countries (Australia, Brunei, Canada, China, Hong Kong, Indonesia, Japan, South Korea, Malaysia, New Zealand, the Philippines, Singapore, Taiwan, Thailand and the United States and, more recently, Mexico and Papua New Guinea) have combined to promote regional and global economic interests rather than to defend their own markets by forming a trading bloc (Phillips, Winton and Gunasekera 1993).

Nevertheless, there are still a wide range of tariff and non-tariff barriers to trade in agricultural commodities in the APEC region. These tend to be highest in countries where the domestic agricultural sector has become increasingly inefficient and reliant on assistance. Given the high income growth rates which have been experienced, especially in the North and South East Asian economies, and the expectation that this is likely to continue over the medium term, the removal of these trade barriers would help to enhance trade within the region.

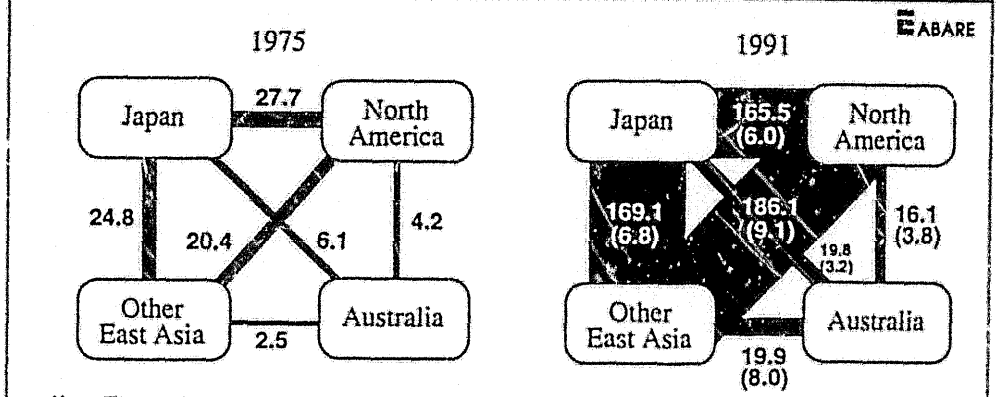
There is currently both the scope and opportunity for APEC member countries to extend the existing role of APEC to include negotiations on further trade liberalisation within the region. Such negotiations could take, as a starting point, the outcome of the Uruguay Round and then seek to extend the trade liberalisation in a non-discriminatory manner on a multilateral basi . However, given the existence of competitive suppliers of commodiues within the APEC region and their proximity to regional markets, it is likely that the bulk of the benefits from such trade liberalisation would accrue to economies within the region.

Australian trade with the Asia Pacific region

Over the past two decades, the economies of the Asia Pacific region have become more important both in relation to other regions and to the global economy. In 1980, for example, the economies of the APEC region accounted for about 49 per cent of world output. By 1990, that proportion had risen to 55 per cent and, by the year 2000, it is estimated to rise to some 57 per cent of world output (Drysdale and Garnaut 1992).

Trade in the Asia Pacific region has also grown at a faster rate than world trade in general reflecting, among other things, substantial growth in the volume of intraregional trade. In the period 1975—91, for example, trade between Japan and other East Asian economies (the newly industrialising countries, China and the members of the Association of South East Asian Nations) rose almost sevenfold, while trade between the East Asian nations and North America was nine times higher. Over the same period, trade between Australia and other East Asia countries rose eightfold, while trade between Australia and Japan and Australia and North America trebled and quadrupled respectively (figure 2). Overall, close to 65 per cent of APEC trade occurs within the region, a higher proportion than in the European Union (Elek 1992).

Figure 2. **Pacific trade flows, 1975 and 1991 (US$billion)**



Notes: Figures in brackets show 1991 levels as multiples of 1975 levels

Reflecting these trends, the direction of Australian trade has undergone a marked shift over the past two decades away from Western Europe to the Asia Pacific region (figures 3 and 4). As a result, the proportion of Australian exports going to APEC countries increased from 60 per cent in 1971-72 to 73 per cent in 1991-92. A similar pattern is evident with respect to imports. In 1971-72, APEC countries supplied about 51 per cent of Australian imports but, by 1991-92, the proportion had risen to 67 per cent (Phillips et al. 1993).

Figure 3. Australian exports - percentage share

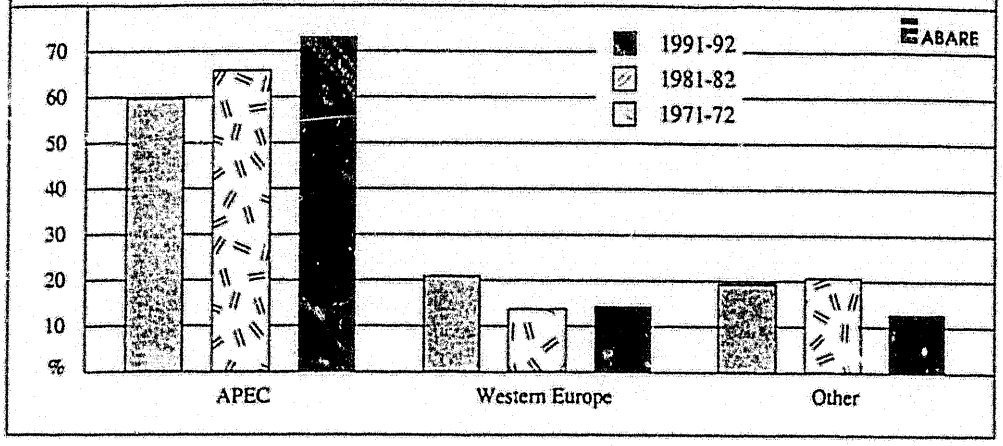
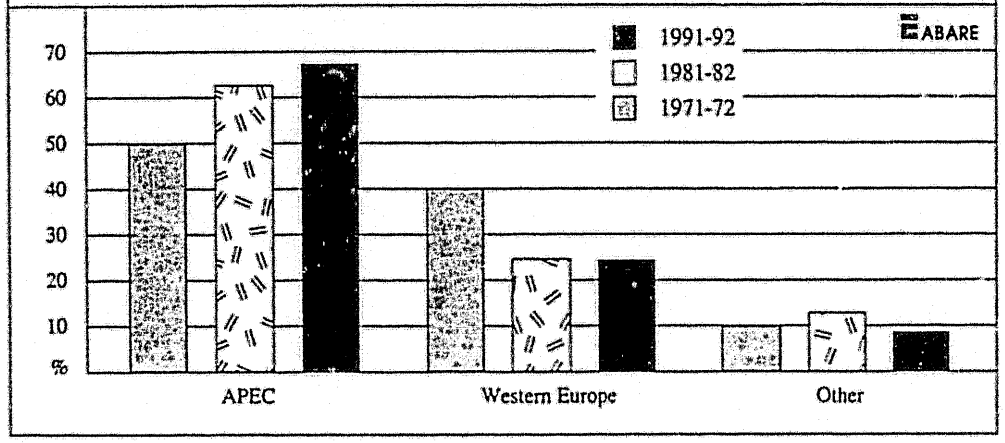


Figure 4. Australian imports - percentage share



From an Australian perspective, the liberalisation of trade among APEC countries on products such as beef, dairy, wheat and sugar products would be likely to benefit significantly Australian producers of those commodities. Consumers in importing countries, particularly the rapidly growing East Asian economies, would also benefit from the greater availability and lower consumer prices of many agricultural products, especially livestock products which are likely to become increasingly important as incomes rise and dietary patterns change.

Free and open trade, based on comparative advantage within the APEC region, would also lead to a more efficient allocation of resources among member countries. For example, some of the resources currently employed in uncompetitive agricultural

enterprises in the East Asian economies could be more efficiently employed in areas of comparative advantage such as manufactures (Phillips et al. 1993).

Developments in the former Soviet Union and Eastern Europe

The major political and economic changes which have occurred in the countries of Eastern Europe and the former Soviet Union since 1989 have important implications for world commodity markets and prices and hence for Australian agricultural producers and exporters.

The demise of the old planned economic system in the former Soviet Union and the serious difficulties encountered in making the transition to a more market oriented system, have led to major political and economic disruption which is expected to result in a decline in economic activity for some considerable time (Roberts, Kottegé and Tie 1993). The downturn in economic activity and a marked decline in export earnings (which are now insufficient to sustain imports at anything like previous levels) is likely to reduce effective demand on world markets. However, a contraction in domestic food production has necessitated the maintenance of food imports, especially of grain. At the same time, priority in the allocation of shrinking foreign exchange earnings has had to be given to debt servicing with the result that much of the food and grain imports have been obtained either on credit or in the form of food aid (Tie and Fisher 1993).

The decline in foreign exchange earnings stems largely from a heavy reliance on energy exports (mainly oil and gas), which accounted for some two-thirds of the former Soviet Union's hard currency earnings, together with severe technical problems which have led to a sharp fall in oil production and export availability. The Russian Republic, the major oil producer and exporter, has been particularly affected by the marked contraction in oil production and foreign exchange earnings. Given these problems and the likelihood that other countries of the former Soviet Union will seek to earn as much hard currency as possible, it can be expected that much of the agricultural surpluses produced by this latter group will be directed to markets other than Russia. As a result, the Russian Republic is likely to become even more dependent on external credit and aid to bridge the shortfall in its food and fibre requirements (Tie and Fisher 1993). On the other hand, if the economic reform program succeeds in improving efficiency in the agricultural sector, including a reduction in the massive post-harvest losses which have been estimated at some 15–25 per cent of total grain production, the Russian requirement for large food imports could contract markedly.

In either case, it would seem that developments in the Russian Republic, and in the region as a whole, are likely to have adverse implications for world agricultural import demand in both the short and longer terms.

In Eastern Europe, agricultural production has fallen in all countries in response to a contraction in domestic demand as a result of the removal or reduction in consumer subsidies, reduced real incomes and the loss of export markets in the former Soviet Union. All these countries possess considerable agricultural resources and the potential for substantially increased agricultural production. They are also actively seeking to offset the contraction in trade with the former Soviet Union by increasing exports to other markets, especially in Western Europe.

A number of countries (Poland, Hungary, the Czech Republic and the Slovak Republic) have evinced a desire to eventually enter the European Union. Given the high levels of support for agriculture which still prevail in the Union despite the mid-1992 reforms and the disciplines implied by the recent GATT agreement, such membership would stimulate agricultural production in those countries, especially Poland and Hungary. This is likely to increase the already substantial agricultural surpluses in the European Union which would then be subsidised on to world commodity markets, depressing world prices. This would have adverse implications for Australian agricultural producers and exporters. In a recent ABARE study (Roberts, Kottegé and Tie 1993), it was estimated that the lower world prices resulting from the entry of these four countries to the European Union and the production response to those prices by Australian producers, would reduce the value of Australian production and exports of major temperate zone food commodities by between $A300 and $A700 million a year. The actual outcome would, of course, hinge importantly on the way that the recent GATT agreement with respect to export subsidies is interpreted in the context of an expanded EU.

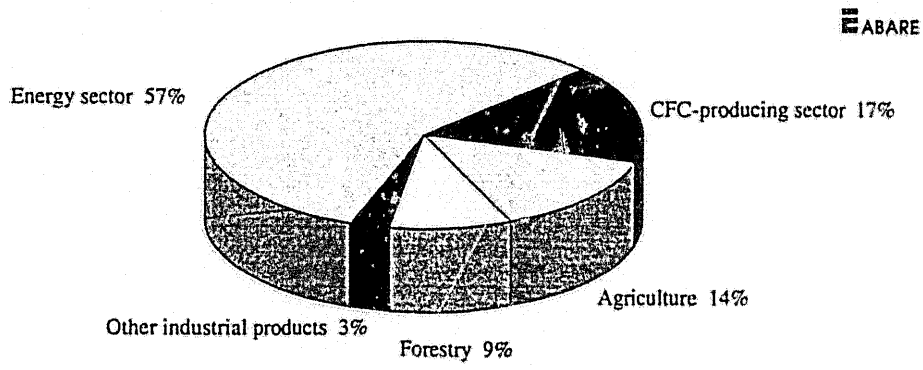
On a more positive note, it is possible that the budgetary and economic costs that such membership would entail could exert pressure for further reform of the Common Agricultural Policy which, in turn, could lead to a reduction in the distortions arising from that policy. Moreover, the adoption of the Common Agricultural Policy would impose considerable burdens on consumers in the new member countries where the proportion of income expended on food (40–50 per cent) is high relative to that in most industrialised Western countries (20 per cent). This could also militate in favour of some adjustment to the Common Agricultural Policy (Roberts et al. 1993).

Environmental issues

In the mid to late 1980s, growing concern about the consequences for the natural and physical environment of rapidly increasing resource use focused international attention on environmental issues. A growing range of environmental problems, such as acid rain, depletion of rainforests and the thinning of the ozone layer, brought environmental concerns into international forums. The increasing awareness of the possibility of future climate change as a result of human activities augmenting the natural greenhouse effect added a new dimension to these environmental concerns. These and other issues are expected to present policy makers with many difficult choices and decisions in the coming decade.

Emissions from the burning of fossil fuels, for example, contributes significantly to the phenomenon of acid rain and have been identified as a major factor contributing to the increasing concentration of acid rain in the atmosphere (Labson, Jones, Gooday and Neck 1992). Concern has also been growing about the environmental impact of agricultural production. As shown in figure 5, agriculture makes a significant contribution to global emissions of greenhouse gases such as methane as a result of enteric fermentation in ruminant animals and biomass burning (Kane, Reilly and Tobey 1991). The spread of high intensity livestock operations, especially in Europe, Japan and North America, has now reached a stage where the disposal of animal wastes is creating major environmental problems. For example, nitrates, which are one of the major pollutants associated with animal waste, readily convert to gaseous form and escape into the atmosphere, contributing to the formation of acid rain. Nitrates also leak into groundwater leading to pollution of public water supplies.

Figure 5. **Sources of greenhouse gas emissions**



Source: US Environmental Protection Agency and Kane, Reilly and Tobey (1991)

While the nature and extent of these problems vary from country to country, the major concerns tend to relate to the effects of pesticide and fertiliser residues, heavy metals, food supplements and animal wastes which contaminate soil and water; and soil degradation and deforestation which can lead to increased floodings, deaths and disease as well as a loss of biodiversity (OECD 1989; World Bank 1992).

To date, most of the developed countries have tended to adopt a regulatory and interventionist approach to the problem, involving legislation and proposals for the taxation of agricultural inputs to fund the costs of pollution abatement. A more effective approach to reducing environmental problems arising from agricultural production would be to reduce the level of agricultural support in the developed countries, especially in Europe, North America and Japan. It is the agricultural support policies adopted by these countries which have encouraged surplus farm production and the intensive use of inputs that has been responsible in large measure for the environmental damage caused by agricultural production. A reduction in agricultural support in the major developed countries would not only help to improve environmental conditions in those countries but would also assist in meeting world trade liberalisation objectives (Hester, Gunasekera and Andrews 1993; Parris and Melanie 1993).

In the longer term, perhaps the most important question facing producers of primary commodities is whether the concepts of sustainable development and environmental protection prove to be compatible with expanding food and resource production and usage and a rising standard of living for the world as a whole.

The exchange rate, interest rates and Australian agriculture

Movements in exchange rates and interest rates are important determinants of the financial performance of Australian broadacre farms. Exchange rate changes have a significant impact on Australian farm incomes because the majority of farm outputs and around 30 per cent of farm inputs are internationally tradable. Changes in the exchange rate can have a critical influence on the extent to which changes in world commodity prices, resulting from influences such as those described above, flow through into prices received by Australian farmers. Interest rates are also important determinants of farm financial performance, with interest payments accounting for around 12 per cent of total cash costs on Australian broadacre farms in 1992-93.

The effects of exchange rate and interest rate changes on the farm sector

The effects of interest rate and exchange rate movements on the farm cash income of different types of farm were estimated by Sterland, Foo and Dlugosz (1993) using ABARE farm survey data. The estimates presented in table 4 represent the income effects in the first year following a change in the exchange rate or in interest rates.

Table 4: Effects of changes in exchange and interest rates on farm cash incomes, 1991-92

	1 per cent fall in the exchange rate	1 percentage point fall in interest rates
	$	$
All broadacre	562	1 141
Wheat and other crops	1 157	1 723
Mixed crops and livestock	757	1 280
Sheep	142	1 058
Beef	612	867
Sheep–beef	370	1 127

Source: Sterland, Foo and Dlugosz (1993).

Sterland et al. (1993) estimated that, on average, the farm cash income of broadacre farms rises by around $560 for each 1 per cent fall in the value of the Australian dollar (table 4). However, there is considerable variation in the impact between the different types of farms. For example, farm incomes in the wheat and other crops industry change by around eight times as much as those in the sheep industry. The different response to exchange rate changes across industries reflects the different price responsiveness of outputs to changes in the exchange rate. For example, the estimated price response from a change in the exchange rate is close to proportional for grains but relatively low for wool (table 5).

Table 5: Short term increases in farm prices in response to a 1 per cent depreciation

	%
Wheat	1.0
Barley	1.0
Sorghum	0.8
Wool	0.3
Sheep meat	0.9
Lamb	0.6
Mutton	1.2
Live sheep	1.0
Beef a	1.0 (0.6)

a The number in parentheses applies if access to the US beef market is restricted.

Sources: ABARE; Martin and Shaw (1986).

On average, the farm cash income of broadacre farms was estimated to rise by around $1140 for each one percentage point fall in interest rates. However, this figure excludes the estimated fall in revenue (for all broadacre farms) of $200 which would arise from the impact of a fall in interest rates on farm income from liquid assets. There is considerable variation in the impact of a change in interest rates on farm income between farms due to different levels of farm debt. For example, 25 per cent of all broadacre farms had debts of more than $140 000 in 1992-93, and 12.5 per cent carried debts of more than $275 000. On the other hand, more than 25 per cent carried no debt in 1992-93. For beef farms, average debt in 1992-93 was around $87 000, while the average for specialist cropping farms was around $153 000 (table 6). Farms with cropping enterprises tend to have higher debt because such enterprises are relatively capital intensive, in terms of both fixed and working capital.

Table 6: Average debt per farm, by broadacre industry, 1992-93
Preliminary estimates

	$
All broadacre	114 800
Wheat and other crops	153 200
Mixed crops and livestock	131 000
Sheep	108 400
Beef	8 200
Sheep–beef	117 200

Source: ABARE (1993).

Because of varying responsiveness of farm commodities to changes in the exchange rate and different debt exposures, changes in the exchange rate and interest rates can have significant regional implications. Farm incomes are particularly affected by changes in the exchange rate and interest rates in intensive cropping regions, such as the wheat–sheep regions of Western Australia, northern New South Wales and southern Queensland. The large beef farms in the Northern Territory and the central coastal and central highland areas of Queensland are also among those most affected in absolute terms, but this is because of their relatively large size. In contrast, in the sheep pastoral areas of western New South Wales and south western Queensland, farm incomes are less affected by exchange rate changes, due to the importance of wool in these regions. However, the recent buildup of debt to relatively high levels because of the fall in the price of wool and poor seasonal conditions makes farms in many of these areas sensitive to interest rate changes. Farm incomes in the high rainfall zone in south eastern Australia are far less affected by exchange rate and interest rate changes, due both to the high proportions of receipts arising from the sale of wool and the smaller size of farms in these regions.

Implications for farm incomes in 1992-93 and 1993-94

Despite falling world prices for rural commodities, ABARE farm survey data indicate that farm incomes recovered somewhat in 1992-93 from the low levels in 1991-92. The decline in the exchange rate from TWI 58 and US77c in 1991-92 to TWI 52 and US70c in 1992-93 and the fall in prime lending rates from 12.6 per cent in 1991-92 to 10.0 per cent in 1992-93 would have been a major influence contributing to the improvement in farm incomes in 1992-93. Sterland et al. (1993) estimated that farm incomes, on average, could have been around $8500 lower in 1992-93 if the exchange and interest rates had remained at 1991-92 levels (table 7).

Table 7 : **Farm cash income in 1992-93 adjusted for changes in the exchange rate and interest rates from 1991-92**

	1991-92 ABARE estimates	1992-93 ABARE provisional estimates a	Estimated interest and exchange rate effects	Estimated level in 1992-93, if interest and exchange rates had remained at 1991-92 levels
	$	$	$	$
All broadacre	23 600	29 600	8 500	21 100
Wheat and other crops	61 600	90 500	15 900	74 600
Mixed crops and livestock	36 900	43 500	10 800	32 700
Sheep	5 300	7 700	4 100	3 600
Beef	19 200	24 300	8 300	16 000
Sheep–beef	12 100	11 700	6 500	5 200

a As at 18 January 1994

Sources: Sterland, Foo and Dlugosz (1993); Martin, Tucker and Peterson (1993).

The expected further decline in both the exchange rate and interest rates in 1993-94 will provide a further cushion to farm incomes. ABARE's current assessment is that the Australian dollar could average around TWI 51 and US67c in 1993-94, while prime lending rates could, on average, be about 1 percentage point below 1992-93 levels. Using the same approach adopted by Sterland et al. (1993), these changes in the exchange rate and interest rates from their 1992-93 levels could account for around $3000, or 45 per cent, of the expected increase in average broadacre farm income in 1993-94 (table 8).

Table 8: Farm cash income in 1993-94 adjusted for changes in the exchange rate and interest rates from 1992-93

	1993-94 ABARE provisional estimates a	Estimated interest and exchange rate effects	Estimated level in 1993-94, if interest and exchange rates had remained at 1992-93 levels
	$	$	$
All broadacre	36 500	3 000	33 500
Wheat and other crops	92 700	5 400	87 300
Mixed crops and livestock	50 000	3 700	46 300
Sheep	13 800	1 500	12 300
Beef	30 300	2 900	27 400
Sheep–beef	24 900	2 300	22 600

a As at 18 January 1994
Source: ABARE

Other exchange and interest rate effects

Changes in interest and exchange rates would have a number of other important effects on the farm sector beyond the direct impact on farm incomes. For example, farm cash incomes are an important determinant of farm investment and consumption spending (Powell 1982; O'Mara 1985; Mullen, O'Mara, Powell and Reece 1988; Gleeson, Topp and Tucker 1992). Hence, movements in interest rates and the exchange rate are likely to have a direct effect on spending by farm households and businesses by influencing the level of farm cash incomes.

Interest rate changes can also indirectly affect farm investment spending by altering the cost of capital, especially if farmers perceive such changes as being permanent. Movements in the exchange rate can also affect farm investment in the short term through changes in the cost of machinery and other investment goods that are internationally tradable. Finally, changes in the exchange rate can affect production patterns by changing the returns to the production of different commodities, although such changes are likely only if the variation in the exchange rate is sustained for an extended period (Martin and Shaw 1986).

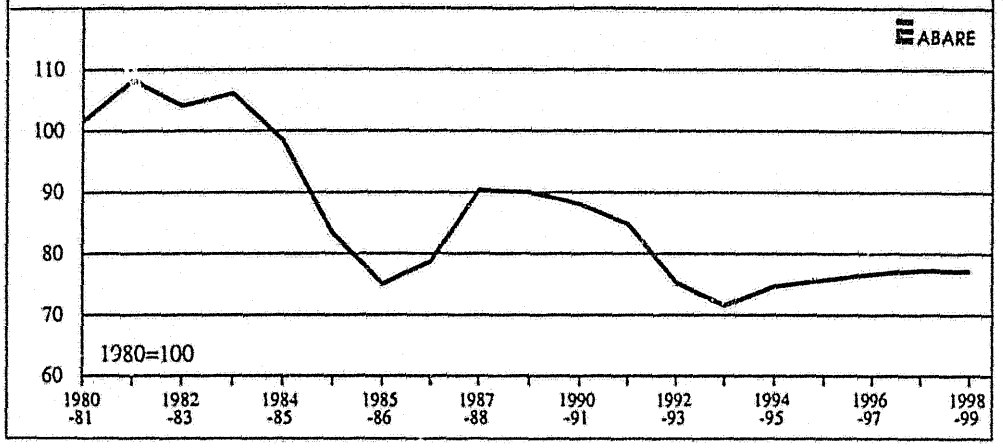
Prospects for the exchange rate and interest rates

Given the importance of movements in the exchange rate and interest rates for the farm sector, it is instructive to examine the prospects for these macroeconomic variables over the remainder of the 1990s.

Prospects for the exchange rate

The Australian dollar fell to a record low level on a trade weighted basis in September 1993. Although it has since appreciated, it remains nearly 20 per cent below its level in the late 1980s, when commodity prices last peaked and the economy was operating close to capacity. Australia's real exchange rate (that is, the nominal exchange rate adjusted for inflation differentials between Australia and its major trading partners) is currently estimated to be close to the previous low recorded in mid-1986 (figure 6).

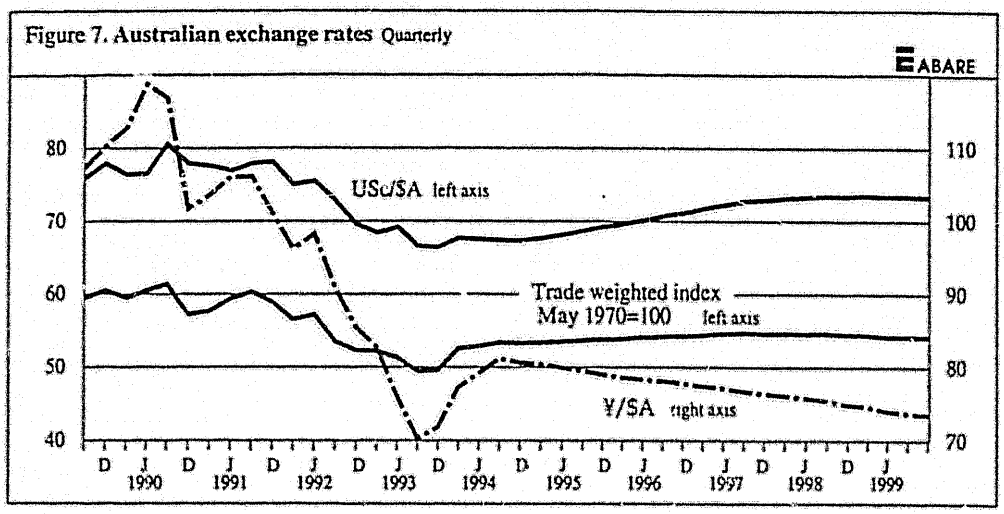
Figure 6. **Australia's real exchange rate**



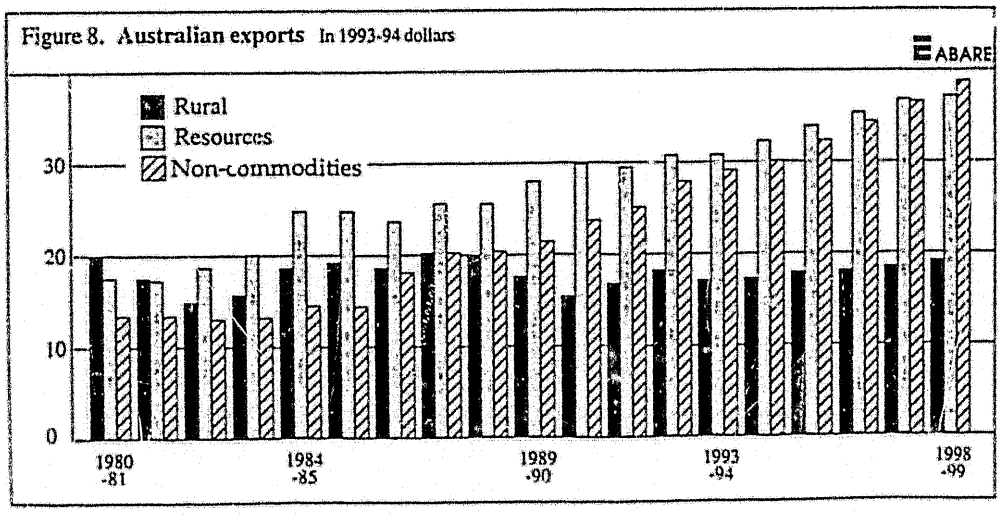
Recent ABARE research (Bell, Bartley and Sterland 1993) suggests that the sharp fall in the exchange rate since the late 1980s is broadly consistent with the economic fundamentals influencing the economy. The decline in the Australian dollar since the late 1980s largely reflects an ongoing adjustment of the exchange rate to the sharp fall in commodity prices, and Australia's terms of trade, that has occurred over the past few years. Lower domestic demand relative to GDP and, to a lesser extent, tariff cuts over this period have been contributing factors in allowing this much lower exchange rate to be accommodated without the emergence of major inflationary pressures.

Given the outlook for weak growth in the world economy and continued low commodity prices in the short term, the Australian dollar is expected to increase only gradually over the remainder of 1993-94 and in 1994-95. In preparing its commodity forecasts for the 1994 National Agricultural Resources Outlook Conference, ABARE assumed that the Australian dollar would average around TWI 51, US67c, and ¥75 in 1993-94 and TWI 53, US68c, and ¥81 in 1994-95 (figure 7). This compares with TWI 52, US70c and ¥84 in 1992-93 and TWI 60, US77c and ¥112 in 1989-90. Because of the high level of unemployment and the relatively low rate of capacity utilisation in the Australian economy, a low real exchange rate could be accommodated for some time

without placing significant upward pressure on inflation. A low real exchange rate would help to move resources into the traded goods sector, thereby speeding up recovery.



However, it is unlikely that a real exchange rate around the present level could be sustained indefinitely. Beyond 1994-95, a gradual rise in commodity and non-commodity export prices and volumes and an assumed stronger rate of growth in the Australian economy is expected to lead to a further increase in the Australian dollar. The extent to which exports from the minerals and non-commodity sectors are projected to expand over the 1990s relative to exports from the agricultural sector is illustrated in figure 8. ABARE has assumed that, on balance, the real exchange rate will be around 8 per cent higher by the end of the 1990s than in 1993-94 (figure 6). Based on this assessment, and assuming an average rate of inflation in Australia only slightly above that in its trading partners, the Australian dollar could average around TWI 54, US73c and ¥75 by the end of the 1990s (figure 7).



At that level, the real exchange rate would still be about 15 per cent below its level of the late 1980s, the last time that the economy was operating close to capacity. Several key factors are expected to contribute to a lower real exchange rate in the late 1990s than in the late 1980s. Using ABARE forecasts for commodity prices and plausible assumptions on movements in non-commodity export prices and import prices, Australia's terms of trade could be about 3 per cent lower toward the end of the 1990s than at the end of the 1980s. The lower terms of trade is estimated to reduce the level of the real exchange rate consistent with full employment and full capacity utilisation by around 3 per cent relative to the late 1980s. Planned reductions in tariffs and the implementation of other microeconomic reform programs were estimated by Bell et al. (1993) to lower the full employment real exchange rate by a further 4.5 per cent between the base period, 1989-90, and 1998-99.

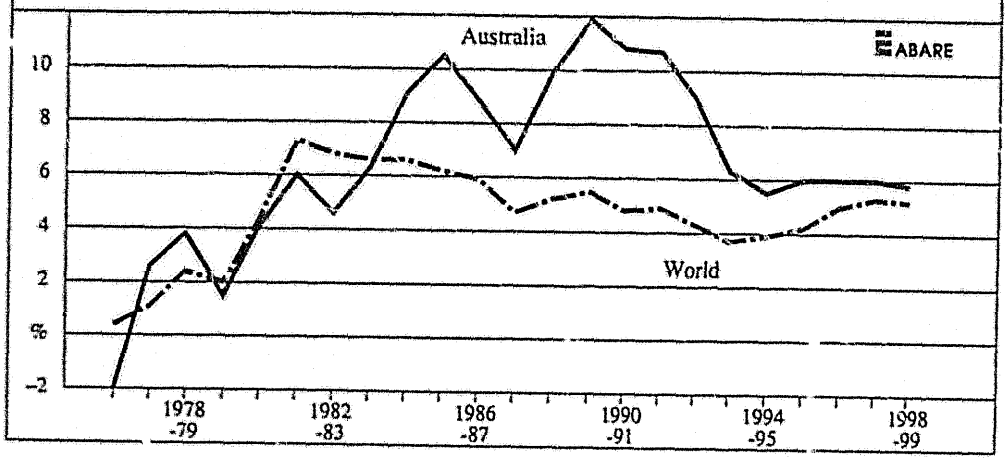
Two other major factors taken into account in assessing the likely level of the real exchange rate at the end of the 1990s relative to the end of the 1980s are the rate of productivity growth in Australia's traded good sector, and the likely decline in the size of Australia's current account deficit relative to GDP. If productivity growth in Australia's traded goods sector continues to lag that of its trading partners by around the same amount as in the 1980s, then the full employment real exchange rate estimated to be consistent with such a productivity performance could be about 11 per cent lower than if productivity growth in Australia's traded good sector matched that of its trading partners (Bell et al. 1993). Under plausible projections for economic growth over the 1990s and assuming the Commonwealth government achieves its stated budget deficit target of 1 per cent of gross domestic product by 1996-97, FitzGerald (1993) concluded that Australia's current account deficit could average around 3 per cent of gross domestic product over the latter part of the 1990s. Achieving an overall improvement in the balance of trade sufficient to lower the current account deficit from 6 per cent of gross domestic product in 1989-90 to 3 per cent of GDP in 1998-99 is estimated to lower the full employment equilibrium exchange rate by around 5–6 per cent relative to its 1989-90 level.

On balance, ABARE has assumed that Australia's productivity growth in the traded goods sector will continue to lag that of its trading partners over the 1990s, although not to the same extent as in the second half of the 1980s, and that the current account deficit will be slightly higher than the 3 per cent of GDP suggested by FitzGerald (1993). Together, these two factors were estimated to lower the full employment real exchange rate by 7.5 per cent from its 1989-90 level. When added to the impact of the lower terms of trade and microeconomic reforms discussed above, the overall impact is a decline of 15 per cent in the real exchange rate from its 1989-90 level by 1998-99.

Prospects for world and Australian interest rates

The onset of the current period of slow growth in the OECD economies has brought with it a sharp decline in world interest rates. In real terms (that is, after being adjusted for inflation), average prime business lending rates in the OECD are now at their lowest level since the early 1980s (figure 9). Real prime lending rates among the four major OECD economies are estimated to have averaged 4.3 per cent in 1993 compared with 5 per cent in 1989 and a peak of almost 8 per cent in 1983. However, considerable disparity exists in the level of real interest rates in key OECD economies. For example, real prime lending rates in the United States and Japan are currently only around 3 per cent, while those in Germany and the United Kingdom are over 8 per cent and 5 per cent respectively. In the short term, average real prime lending rates among major OECD economies could decline slightly further in response to continued weak economic activity in Japan and Europe and only modest growth in the United States.

Figure 9. Australian and world real interest rates



The decline in world real interest rates that has occurred over the past few years reflects, in part, the significant decline in the level of investment relative to savings in the OECD economies and the weakness of overall economic activity in those economies. An additional factor contributing to lower real interest rates has been the implementation of a package of measures designed to reduce the US budget deficit by around half over the next five years. For example, 10 year bond rates in the United States have fallen by around 1.5 percentage points since late 1992, which largely reflects market perceptions of the extent to which a smaller US budget deficit would reduce world interest rates. Rodriguez, Small and Penm (1993) estimated that the measures contained in the Clinton deficit reduction package, if implemented without other offsetting changes to revenue or spending, could reduce world real interest rates

by about 1.5 percentage points over the medium term relative to what would otherwise be the case.

However, despite the implementation of the deficit reduction program in the United States and plans to reduce budget deficits in a number of European countries, over the latter half of the 1990s world real interest rates are likely to be at similar levels to those experienced in the 1980s. That is, they are likely to remain well above the level of real interest rates that prevailed in the 1960s and 1970s. Over the 1990s a number of factors can be identified that could at least partially offset the influence of smaller fiscal deficits in OECD economies on the level of world real interest rates.

One factor that could begin to place some upward pressure on world interest rates over the latter part of the 1990s is the projected aging of the populations of developed economies, particularly Japan. As the proportion of the population engaged in dissaving increases, the aggregate level of household saving could decline. In addition, net savings rates in some of the newly industrialising Asian economies could also begin to decline over the 1990s as income growth slows and demand for public services and infrastructure increases (Gunasekera, O'Mara and Dlugosz 1990). Any decline in the supply of savings in these economies will coincide with rising demand for savings in both OECD and other developing economies. Over the second half of the 1990s the recovery in the OECD economies will increase their demand for savings to finance investment spending. During the same period, the demand for foreign capital in Eastern Europe, the former Soviet Union, the Middle East and a number of other developing economies is likely to increase markedly. The implementation of policies promoting market based allocation of resources, macroeconomic stability and increased foreign capital inflow in Mexico, Argentina, Chile, China, India and some other Asian economies is likely to enhance significantly the attractiveness of investing in those economies in the 1990s relative to the 1980s.

On balance, these factors are expected to place upward pressure on world real interest rates over the second half of the 1990s, although real prime lending rates may remain slightly below the levels reached in the early 1980s (figure 9). The rise in real interest rates will serve to allocate available savings among competing investment opportunities. In preparing its latest commodity forecasts, ABARE assumed that average real prime lending rates in major OECD economies will rise to around 5.0—5.5 per cent by the end of the 1990s. This level is similar to that experienced in the late 1980s, when a number of OECD economies were operating close to capacity and investment and consumption spending was growing strongly, but below the levels reached in the first half of the 1980s.

Interest rates in Australia, like those in the major OECD economies, have also fallen sharply in recent years. Interest rates on short term bills have fallen from a peak of over 18 per cent to less than 5 per cent in the second half of 1993. The decline in the prime lending rate has been similarly marked, although the margin between the two rates has widened from 2.5 percentage points in 1989 to around 4.5 percentage points in 1993. However, in real terms, the decline in Australian interest rates has been less spectacular. For example, real prime lending rates have fallen by only around 6 percentage points since late 1989, with a significant part of this decline occurring only relatively recently (figure 9). Real prime lending rates in Australia are estimated to be currently around 6.5 per cent, more than double those in the United States, which is operating much closer to capacity than is Australia and which is already experiencing a steady recovery in consumer and investment spending.

The decline in real interest rates in Australia since 1989 has significantly reduced the wedge between real interest rates in Australia and major overseas economies (figure 9). The wedge between real interest rates in Australia and major OECD economies was around 4 percentage points in 1993, compared with 6.5 percentage points in 1989-90 and an average of around 4.5 percentage points in the second half of the 1980s and early 1990s. The emergence of a large wedge between real lending rates in Australia and overseas in the mid-1980s, while not unprecedented, appears to have been, in part, a response to uncertainty created by the sudden collapse of Australia's terms of trade and the associated sharp fall in the Australian dollar in the mid-1980s and the rapid increase in Australia's foreign debt to gross domestic product ratio that occurred over the second half of the 1980s (O'Mara, Wallace and Meshios 1987). Also, during this period Australia's inflation rate was running at a rate about double that of its trading partners, which may have added to uncertainty regarding the prospects for the Australian economy and Australian economic policy.

The course of interest rate movements in Australia over the remainder of the 1990s will depend on the stance of fiscal policy as well as movements in international interest rates and perceptions about the prospects for the Australian economy. If fiscal policy is tightened significantly over the remainder of the 1990s, this may provide scope for real interest rates in Australia to remain around present levels despite some increase in interest rates overseas, as discussed above. This would particularly be the case if Australia can maintain an inflation rate close to that of its major trading partners and a lower current account deficit as a proportion of gross domestic product than experienced in the late 1980s. The presence of a high level of excess capacity in the economy should enable the Australian economy to grow relatively strongly without

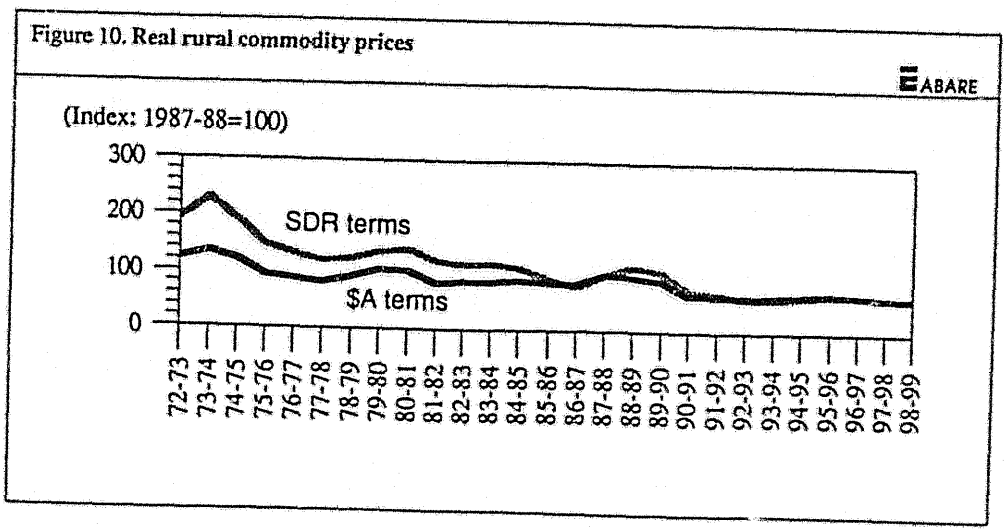
exerting significant upward pressure on the inflation rate. While the current account deficit is likely to increase over the next few years in response to increased domestic demand, particularly investment spending, rising export volumes and commodity prices could increase sufficiently to moderate the deficit in later years.

These factors, combined, could reduce the premium required by foreign investors to invest in Australian assets, allowing real interest rates to move much closer to those in other developed countries (figure 9). Under these conditions, real prime lending rates in Australia could average around 6 per cent by the end of the 1990s, only slightly above those assumed for major OECD economies at that time. This would imply only a slight rise in nominal prime lending rates from present levels. While official interest rates would be likely to rise at least modestly over this period, it is possible that at least part of that rise would be offset by some narrowing of the margin between official rates and bank lending rates as economic recovery proceeds and lending becomes less risky. The margin between official interest rates and prime lending rates is currently around 4 percentage points, compared with an average margin of around 2 percentage points for most of the 1980s.

Implications for Australian agriculture

This section draws together the material discussed in sections 1 and 2 in terms of the outlook for Australian agriculture over the remainder of the 1990s. The projections outlined in this section of the paper were presented at the 1994 National Agricultural and Resources Outlook Conference (Love, Warr, Hester, Tie, Dlugosz, O'Mara and Fisher 1994).

Figure 10. Real rural commodity prices



World prices for rural commodities, expressed in SDR terms, are forecast to stabilise in 1993-94 after having fallen by around 50 per cent in real terms from their level in 1988-89, the last time rural commodity prices peaked. Over the remainder of the 1990s, real SDR prices for rural commodities are projected to increase by around 5 per cent. This implies, of course, that rural commodity prices in real SDR terms would be much lower at the end of the 1990s than at the end of the 1980s, but broadly consistent with the long term downward trend evident in real prices for rural commodities (figure 10).

A major factor contributing to the projected rise in rural commodity prices beyond 1993-94 is the assumed higher levels of economic activity in the OECD as Japan and Western Europe recover from recession, and as economic recovery in the United States continues. This, combined with strong economic growth in the developing countries, is projected to increase world commodity demand in the medium term. This should reduce the currently high stocks of some commodities, notably wool, and allow the real prices of many commodities to rise in the medium term from their current low levels.

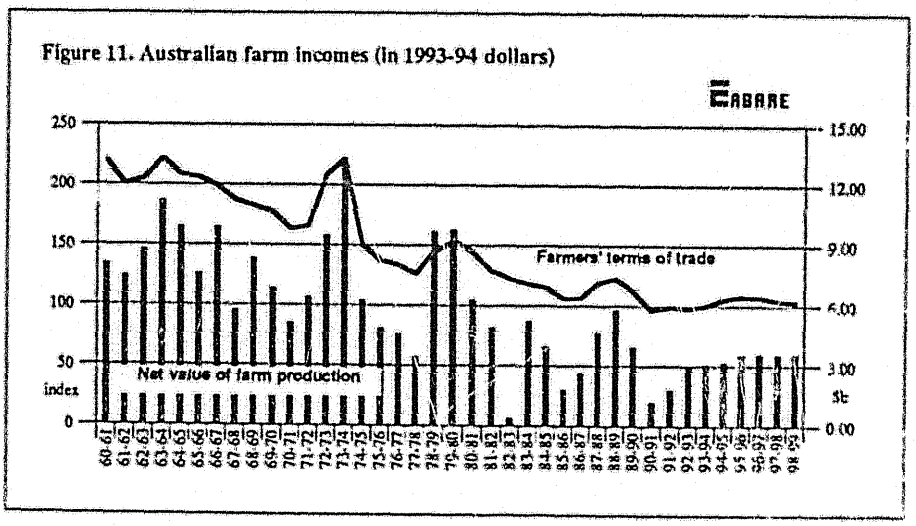
Strong growth in East Asian markets is expected to increase export demand for Australian beef and other livestock products. Real beef prices are projected to increase until 1995-96, after which rising Australian production should begin to outweigh the effect of higher demand. Wool prices are projected to rise by 23 per cent in real Australian dollar terms between 1993-94 and 1998-99 but to remain well below their levels of the late 1980s. Demand for wheat, Australia's largest export crop, is projected to grow strongly in the medium term as populations and per person incomes rise in wheat importing developing countries, especially in South and East Asia. At the same time, world wheat production is projected to increase only gradually over the next five years, and the volume of subsidised exports from the United States and the European Union to fall significantly. On balance, real wheat prices are projected to rise modestly in the medium term.

In contrast to the fall of nearly 50 per cent in world prices for rural commodities, real Australian dollar prices are estimated to have fallen by around 35 per cent between 1988-89 and 1993-94 (figure 10). The less marked decline in Australian dollar prices has been due to the offsetting influence of the decline in the Australian dollar. Over the same period, the Australian dollar is estimated to have fallen by around 20 per cent in real trade weighted terms. Based on the ABARE research discussed above, it is estimated that the decline in world prices for rural commodities over that period would, in itself, account for only around a quarter of the decline in the exchange rate that occurred during the same period, highlighting the influence that developments in the broader economy can have on the agricultural sector through the exchange rate. The

decline in world mineral commodity prices, weak domestic demand, and declining tariffs (particularly in manufacturing sector) would have contributed to the decline in the exchange rate over the period since the late 1980s.

By the end of the 1990s, real Australian dollar prices for rural commodities are projected to decline by around 2.5 per cent from their 1993-94 level after rising modestly during the mid-1990s (figure 10). The projected increase in the Australian dollar over that period, as discussed above, is estimated to more than offset the projected rise in world prices for rural commodities. The 5 per cent projected rise in the real level of rural commodity prices in SDR terms over this period would, in itself, have a negligible impact on the exchange rate. However, the net effect of the range of other influences identified above, including forecast increases in world prices for, and volumes of, mineral commodities and non-commodity exports over the remainder of the 1990s, are expected to place upward pressure on the Australian dollar, leading to an overall decline in real prices for rural commodities in Australian dollar terms.

Figure 11. Australian farm incomes (in 1993-94 dollars)



The real net value of farm production is forecast to rise from $3.1 billion in 1993-94 to $3.2 billion in 1994-95 and to $3.5 billion in 1995-96, largely reflecting projected increases in real beef and wool prices in these years (figure 11). This compares with a real net value of farm production of close to $5 billion during the latter part of the 1980s and the low of around $1.1 billion in 1990-91. The marked decline in interest rates and the exchange rate in recent years have been key factors contributing to the improvement in the net value of farm production from the low levels reached in 1990-91. For example, as indicated in tables 7 and 8, in the absence of the decline in interest rates and the exchange rate between 1991-92 and 1993-94 and with other factors

unchanged, broadacre farm incomes would have been largely unchanged at the 1991-92 level over this period, rather than increasing by around 50 per cent.

The real net value of farm production is projected to remain in the range of $3.5 to $3.6 billion from 1996-97 to 1998-99. Real beef prices are projected to fall after 1995-96, although the effect of this is expected to be cushioned by significant increases in wool and grains prices. The expectation that interest rates in Australia could remain around current levels is also an important influence underlying the projected real value of net farm production over the medium term.

It is noteworthy that these forecasts for the real net value of farm production in the latter part of the 1990s are somewhat higher than those presented by ABARE in the December 1993 issue of the *Agriculture and Resources Quarterly*. For example, in that earlier document, the real net value of farm production was forecast to be around $3.0 billion in 1997-98 and around $2.6 billion in 1998-99. The difference largely reflects the fact that the estimates published in December 1993 did not include an allowance for the impact of the GATT agreement, whereas the more recent estimates presented here include the impact of the GATT agreement.

The projected sustained recovery in the real net value of farm production from its lows of the early 1990s will contribute to the broader recovery in the Australian economy, although the most significant implications will be for regional communities. The projected recovery in farm incomes should lead to increased demand for inputs to production, increased investment spending and increased spending by farm households.

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