

Regions between theory and reality: Agricultural policy and its impacts in Australia

Ben Rees and Mark McGovern
School of International Business, Queensland University of Technology
m.mcgovern@qut.edu.au

Paper presented to the twenty-eighth annual conference of the Regional Science Association International, Australia and New Zealand Section
Woolongong, 29th September to 1st October 2004

Abstract

This paper seeks to explain why rural policy based upon market economics cannot deliver appropriate rural policies to Australia in the 21st century. It also discusses why environmental policy and rural policy are on a collision course. Regions lie unappreciated in the middle.

Three key themes are developed:

- *Rural policy is still entrenched in the policy debate of the third quarter of last century and cannot meet the policy needs of a rural sector in the twenty first century.*
- *Environmental, conservation and resource depletion impacts of the production process are excluded from input pricing constructs of CGE modelling and of policy so informed.*
- *In 1995 ratification by member countries of the WTO Agreement on Agriculture moved international trade in agriculture to a rules based system. Australia remains clinging to the Cairns Group agenda from the 1980s.*

For Australian regions the impacts have been varied but are often manifestly severe as can be seen from available statistics. If Australian regions are to develop to their due potential the roles of agriculture in regional development needs to be comprehensively and critically understood. Historically many Australian regions have advanced using agriculture and, we are told, this may occur again. Turning what are presently little more than pious hopes into successful regional realities requires considered, consistent policy and appropriately coordinated actions.

1. Agriculture and policy in context

As Australian agriculture enters the twenty first century, most major export orientated rural industries have experienced dislocation in one form or another. A complex mixture of events has led Australian agriculture to where it is today. Internationally, there was an international commodity price collapse over the late 1980's and into the 1990's. Rigid Soviet and Sino Communism disintegrated, with markedly varied results and implications for Australian exports. Domestically compounding the protracted drought across a large part of eastern Australia were a series of policy repositionings. These followed on from events of the early 1970s.

Changed emphasis in Australia saw new philosophy, policies, priorities and preferences. These included:

- Change in the underlying economic philosophy and direction of agricultural policy from a Keynesian interventionist approach to a market determined philosophy based upon general equilibrium theory. This is commonly termed economic rationalism.
- Introduction of National Competition Policy (NCP) in 1995 extended the Competitive Conduct Rules of Part IV of the Trade Practices Act to orderly marketing of agricultural production (Australia. Productivity Commission. 1999, p72). All State Governments undertook to review all legislation that restricted competition by the year 2000. Deregulation of regulated industries followed with marked and sometimes disastrous effects upon industries and communities
- The 1995 ratification of the WTO Agreement on Agriculture established a system of managed international trade for agriculture rendering irrelevant Australia's domestic policy direction based upon a free trade agenda.
- An increasing awareness of issues associated with urban lifestyle concerns over conservation and environmental issues such as sustainable agriculture have brought free market rural policy and environmental policy into open conflict.

Those in Agriculture were caught largely unaware by the changed philosophy as well as the new national and international policies. While policy advocated competition and deregulated markets, actual practice was affected by all manner of contrary influences. Reform advocates sought to refashion practice, often without appreciations of practice itself or of the full implications of change. As Brown (2003) writes in another setting (considering ecology),

For every action on a complex, interactive, dynamic system, there are unintended consequences. In general, the unintended consequences are recognised later than those that are intended.

The consequences from Reform actions on the Australian agricultural system and its host regions remain little appreciated or acted upon.

The Road to Reform (see Gruen and Academy of the Social Sciences in Australia 1978, Chapters 4,5) can be traced back some time. The decade from the mid 1960's to mid 1970's was a watershed in Australian agricultural policy direction. Post World War II, agricultural policy had been concerned primarily with balance of payments stability under a fixed exchange rate system. A complex mix of policy instruments was in place to support the contribution of agricultural production to balance of payments stability and economic growth. From the mid 1960's, mining began to usurp the importance of agriculture in external balance. The managed exchange rate system became subject to more frequent adjustments. In December 1983, the exchange rate system became market determined.

Over the mid 1960's and early 1970's agricultural economics began to change focus and question resource misallocation of former industry-by-industry support programs. Agricultural economists, aware of low farm income problems overseas, were beginning to be taken seriously with their warnings of an emerging problem in Australia. This led to the publication of the Green Paper *Rural Policy in Australia* (Harris, 1974) as well as the establishment of the Industries Assistance Commission

(IAC) following the Crawford Report (1973). The Green Paper, the IAC, the emerging influence of agricultural economics and some technical advances were pivotal in changing the direction of agricultural policy.

The Green Paper recommended that economic efficiency could be improved by a gradual lowering of both the tariff rate and the exchange rate. This was implicitly a recommendation to move towards a free trade economy. Two exceptions were recognized that could require intervention through subsidization of industries: infant industries and terms of trade problems.

General equilibrium modelling of the Australian economy became possible by the early work of Evans. His work is accredited with the establishment of the IMPACT Project. Evan's described his model building work as Ricardian¹ because one stream of theory behind the model was based upon Ricardian trade theory of comparative advantage.

The IAC (later the IC) was established under legislation in December 1973 as an advisory body to Government. Operational guidelines for the institution encompassed: resource allocation, adjustment to change, integration of assistance measures with government policy. In 1975, the IAC, along with other major Commonwealth Departments, initiated establishment of the IMPACT Project. The Project included two general equilibrium economic models (ORANI and BUCHUROO) to evaluate a wide range of government policies. By the late 1970's, Impact Project modelling displayed considerable promise for policy evaluation and development in the Australian economy.

Agricultural economists had expressed concern over the overseas problem of low farm incomes and implications for Australian rural policy. The established closer settlement policy direction in Australia was of particular concern. In the early 1970's, policy direction changed from closer settlement to one of rural reconstruction in response to structural adjustment problems emerging following changes to overseas markets for wool, beef, dairy, wheat and fruit (Senate Rural and Regional Affairs and Transport References Committee 1994, p 1). In 1977, rural reconstruction was replaced with the concept of rural adjustment to address the environment of constant change that pervaded agriculture.

Such were the foundations upon which policy was set. However the wider world changed. The ratification in 1995 by member countries of the World Trade Organization's Agreement on Agriculture (WTO AoA) introduced, in effect, a system of rules based or managed international trade in agriculture. AoA Rules addressed five broad policy areas: market access, food security, and domestic support, export subsidies and notification of technical support (Muker 2000). The rules based system in effect thumbs its nose at the concept of agricultural trade based on theoretical free trade. Since 1995 a significant mismatch has existed between external environment and domestic position for Australia and its agriculture.

¹ David Ricardo , (1782-1823) is most remembered for his comparative advantage theory of international trade. Comparative advantage underwrites much of the debate on international trade right through to the WTO. The significance of a general equilibrium model based on Ricardian principles in the 1970's for Australian economic analysis of policy clearly dates the economic policy of today.

Compounding this was the introduction of national Competition Policy Reform Act in 1995 (Productivity Commission 1999, Chapter 4). This institutionalised the prevailing microeconomic reform agenda into Australian economic policy. Three intergovernmental agreements underwrite NCP

- Competition Principles Agreement, CPA,
- Conduct Code Agreement, CCA, and
- Agreement to Implement the NCP and Related Reforms.

Under the CCA, all governments agreed to extend competitive conduct rules from Part IVA of the Trade Practices Act to all businesses. The CCA has proved disastrous for many in rural Australia as conduct was judged not against actual market conditions but against the posits of perfect competition.

Further, under the CPA all signatories agreed to review and reform any uncompetitive legislation by the year 2000. Orderly marketing arrangements operating in the rural sector were then in serious jeopardy. Few statutory marketing authorities remain in Australia today and those that do are under continual threat.

2. Orthodox Economics and Agriculture

“criticism of accepted classical theory of economics has consisted not so much in finding logical flaws in its analysis as in pointing out that its tacit assumptions are seldom or never satisfied, with the result that it cannot solve the problems of the real world” Keynes, 1936

Contemporary Australian economic policy has become completely dependent upon an orthodox economics and some underlying general equilibrium modelling. Agricultural policy in particular is a classic example of a policy dependence upon theoretical modelling for solutions to dislocations from oversupply in international commodity markets. Recent examples of such policy dependence upon economic modelling include the structural adjustment solutions for dairy and sugar industry deregulation as well as the analysis of effects flowing from Free Trade Agreements with the USA and Thailand.

Unfortunately such modelling consistently makes assumptions of market clearance or full employment in order to find a solution. Thus Say’s Law, that supply creates demand, returns (Rees and McGovern 1992; Rees 1995). The emphasis is on supply-side market economics. There is heavy reliance upon the particular assumptions made. Fuller discussion of such things must be left to another place. However, the lineage of the thinking can be seen in the short list of comments provided in Table 1.

Table 1: A line of shared thoughts

“That there is no harm in prices falling as productivity increases has been pointed out again and again e.g. by A. Marshall, N.G.Pierson, W.Lewis, F.Y. Edgeworth, F.W. Taussig, L. Mises, A.C. Pigou, D.H. Robertson and G. Habler, (For more detailed references see my article on “The Paradox of Saving” , Economica, May, 1931,p.161)” (Hayek 1935, p106)

“Deteriorating terms of trade do not necessarily mean that farmer’s average incomes will also fall. ----- Over the longer term, productivity gains, whether achieved through improving technical efficiency at the farm level or by taking advantage of scale economies are likely to result in average incomes being, at least, maintained” (Buckland and Campbell 1980)

“The downward trend in real commodity prices need not of itself produce a loss of national income nor a decline in the profitability of commodity producers if the decline in real commodity or manufactures price is a result of higher productivity” (National Farmers Federation 1995, p 7)

“Productivity growth continues to be a key determinant of the international competitiveness of Australian agriculture and the profitability of particular farm industries” (ABARE , p 53)

On the sugar industry:

“ Looking at the worst case scenario, the only way to restore the industry to its 1996-97 levels of profitability would be for ‘productivity growth in growing (excluding CCS), harvesting, transport and milling to increase by 37% or world price to increase by 33%” (CIE 2002, p x)

The Report went on to use an underlying assumption in their modelling that would deliver on farm productivity gains leading to a 20% increase in cane yields and a 0.75% increase in CCS . (CIE 2002, p.xi)

The Federal Government commissioned the Hilderbrand Report that had this to say:
“ These prices will create an urgent need for productivity and cost improvements over the medium –longer term in order for the industry to remain internationally competitive” (Hilderbrand 2002, p 11)

The necessary structural adjustment solution based upon efficiency and productivity improvements is an intellectual legacy from the classical era of economics. This of course is entirely consistent with Say’s Law used as the underlying theory of supply and demand in current CGE modelling. This legacy from the past has become virtually institutionalised in the mindset of Australian agricultural policy.

Under supply side economics, market dislocation through demand failure cannot occur. Demand problems simply do not exist because increased supply creates increased demand at an appropriate market-clearing price. A finesse on this is to argue that even if such problems did exist, Australia is a “small nation” and a “price taker” and so is unable to influence such things.

If an industry is in trouble, then, it must be supply side structural imperfections that are impeding industry efficiency and productivity. So the solution lies in supply side structural reform to lift efficiency and productivity. These are expected to lift to a level where industry output clears the market at the prevailing market price. Consequent collateral dislocations of industries, farmers, communities and regions simply become necessary adjustment costs of restructuring an “inefficient” industry.

Supply side economics is the philosophy underwriting current industry structural adjustment policy. There is no recognition of any necessity to constrain supply when oversupply dislocates international markets. Policy simply supports the necessary level of structural adjustment necessary for markets to clear at the necessary market clearing price.

“under certain circumstances, a purely competitive economy will achieve a general equilibrium of prices and quantities such that we cannot improve the position of any participant in the economy without diminishing someone else’s satisfaction. Under these circumstances, we say that the purely competitive economy has achieved an efficient allocation of resources”
(Gill 1973, p 507)

It is the “certain circumstances” that are of interest. Market structure under CGE modelling is assumed to be one of pure competition. In textbooks, the term pure is often substituted for perfect competition (Davidson and Stewardson 1978, p 270-1). Market characteristics that must exist for a market to be purely or perfectly competitive include (Koutsoyiannis 1975, pp 154-5):

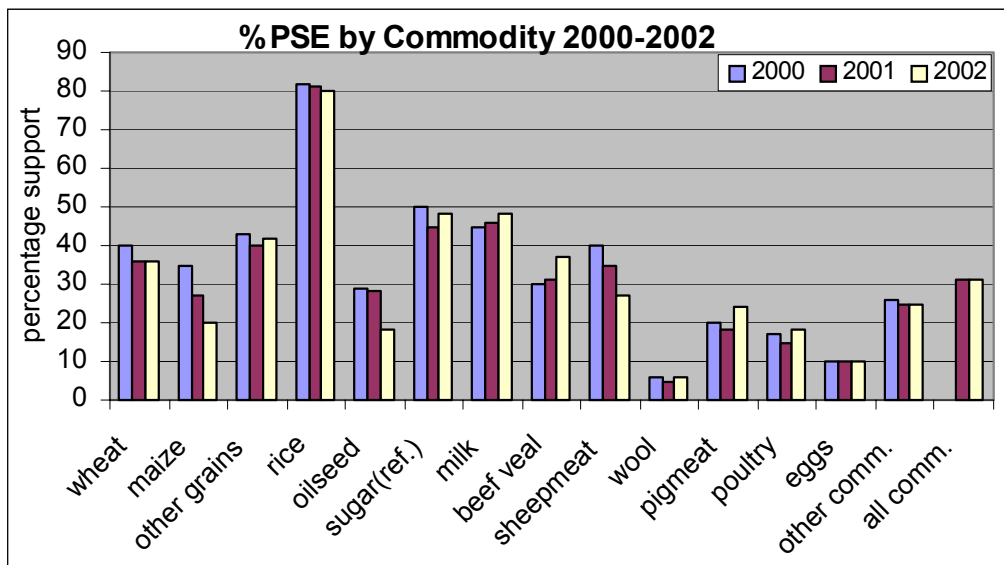
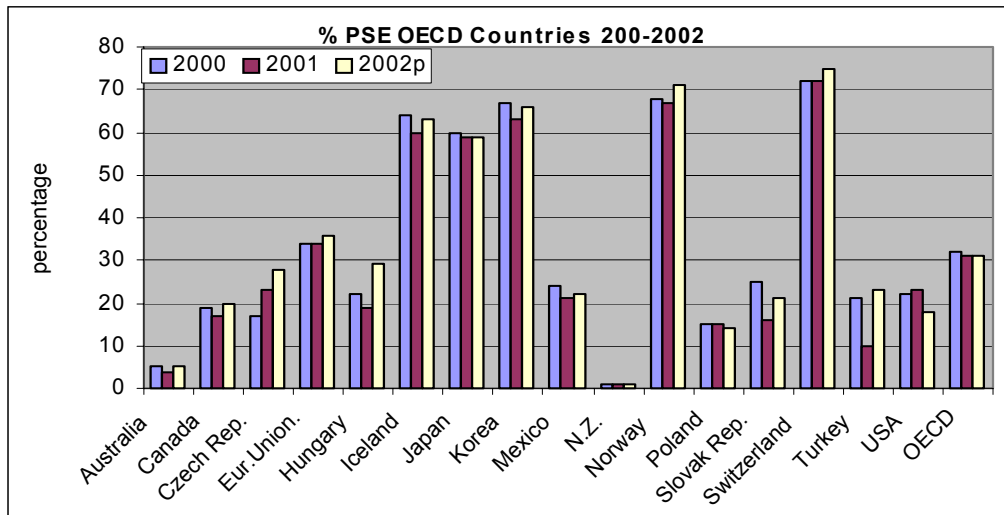
- There must be a large number of buyers and sellers so that no market participant can influence price or quantity
- A homogeneous product is produced
- No barrier to entry or exit either to or from the industry
- Profit maximization is the goal of all market participants
- No government involvement in the industry
- Perfect mobility of factors of production
- Perfect knowledge so that all sellers and buyers have complete knowledge of market conditions

It is only under such a market structure that competitive efficiency can be achieved (Gill 1973, pp 510-511). A key question to be addressed is: “To what extent does real world agriculture comply with the structural requirements of pure competition?”

To consider just one condition, the fifth, there is considerable government intervention in agriculture in many OECD countries, as is evident from Figure 1. Support to agriculture varies widely from country to country with Australia the second lowest to New Zealand across the OECD. It is not difficult to conclude that the underlying assumptions required of a purely competitive market structure are not

reflected in the real world of agricultural international trade. Of particular interest are the imperfections of international markets faced by Australia's major export industries of sugar, dairy, wheat, beef/veal. Such market "imperfections" can be further compounded by the distribution of, and any controls on, market power by parties along the supply chain.

Figure 1. Producer support levels for various countries and commodities



Note. The % PSE is total support provided to farmers expressed as a percentage of gross farm receipts at farm gate value. It is the most widely accepted measure for comparisons of farmer support levels across countries industries and time (OECD 2000, p 39)

Sources: Compiled from Agricultural Policies in OECD Countries Monitoring and Evaluation 2003, Table Annex 2, PSE by Country pp. 44-45 and Annex Table 3 , PSE by Commodity, pp 46-47

There is a clear divergence between agricultural market structures and the underlying requirements of a purely competitive market. Policy based upon the strict assumptions underlying pure competition is inappropriate in the real world of agricultural trade. Policy responsibilities for Australian rural industries long term declining terms of trade are not insignificant.

Between 1960-61 and 2000-01, agricultural industry terms of trade for the farm sector fell from an index value of 222.9 to 99.6 (Australian Bureau of Agricultural and Resource Economics ABARE 2002, p 17). This represents an annualised average decline of around 2%. A break down the component parts of the terms of trade demonstrates the significance of terms of trade decline as an important factor influencing decision-making at farm level. Over the forty-year period, the prices received index increased at the annual rate of 3.6 % whilst prices paid rose by 5.8%. Meanwhile, inflation in the wider economy, measured by the CPI, rose on an annual basis by 5.8%.

Real output rose by 2.7% pa over the period 1960-61 to 2000-01 (as calculated from GVFP data and Prices Received Index). However, despite rising real output, the index of value of real net farm production fell from 199 to 139 representing an annual average rate decline of 0.9% in real NVFP. It can be inferred from analysis of real NVFP decline that real farm incomes also declined.

Such analysis as well as of correlations suggests that costs drive production. Thus farmers, who essentially produce in the short run, seek to continually cover costs. As standard short run analysis suggests, they will continue to do this as long as returns are expected to cover variable costs. They may then allocate any remainder towards meeting fixed costs (such as repayments on capital, be it financial, human or natural).

How might such variations in returns and costs be explained? A mal-distribution of market power provides one theoretical explanation of price movement differentials between farm input markets and output markets. Market power of input suppliers across the wider economy has been adequate for them to maintain their output price movements consistent with CPI changes. Conversely, the fact that the farm sector could not hold input prices equal to agricultural output price movements confirms they have minimal market power in the commodity production process.

However, an absence of market power does not in itself adequately explain the inability of farmers to maintain commodity real prices. Standard textbook theory of supply and demand would explain the problem as one of persistent oversupply of commodities relative to demand. Persistent oversupply is in itself evidence of an inefficient allocation of resources somewhere. Clearly, supply has not been creating demand as might have been assumed by some considering agricultural markets.

The long-term decline in real net value of production carries implications for farm sector growth and stability. It suggests that expanding production has not been adequate to fund sectoral growth. Credit had to fill the gap. Over the long term, increasing farm sector fragility would be expected to become a feature of particular rural industries heavily dependent upon credit financed expansion to supply volatile international commodity markets.

As indicated, policy response to industry dislocation from oversupplied markets has been to immediately call for a modelled industry solution. However because demand is determined by appropriately priced supply in CGE modelling, it comes as no surprise that supply side structural reform is the modelled solution. A standard structural adjustment package is provided to implement the necessary structural

reforms so that the industry can meet the prevailing market clearing price. While there may have once been hope (back in the 1970s) that the actual conditions of trade might move towards the ideal, the signing of the WTO AoA in 1995 and now the USA-Australia Free Trade Agreement (USAA FTA) signal acceptance of the opposite. Structured trade regimes exist and can operate acceptably under promulgated rules. Australia now explicitly recognises the ongoing existence of non market factors, such as various USA farm supports. Agriculture is caught between.

Dislocations at community and regional level follow with associated investment and human costs. Such things are rationalized away as necessary adjustment costs, things needed for required efficiency and productivity improvements. Forced revisits to packages for pork, sugar and dairy are not recognized as reflecting inappropriate policy. They are deemed industry reluctance to embrace change rather than problems with the proposals *per se*. Blame shifting is not policy analysis, however.

Improved management techniques, application of technology, reconfiguration of farm resource use, factor transfer, factor expansion, and farm build up are the suggested ways of improving farm efficiency and productivity. Over time as technology is applied to farm production systems, factor proportions change so that an industry becomes less labour dependent and more capital intensive. At farm level, this requires credit funding and adds to debt imposts for individual farmers and the industry as a whole. The responsibility of efficiency and productivity emphasis in Australian agricultural policy has been significant in the rising debt levels of the sector as farmers have desperately sought to comply with industry policy direction.

3. Differing constructs and interpretations

Of efficiency

Ideas and constructs such as efficiency can be variously interpreted and used. Efficiency in its technical sense can be misapplied in its wider usage. Thus in agricultural economics, the Paretian concept of efficiency is accepted despite the strict value judgments (Gruen and Academy of the Social Sciences in Australia 1978, pp 197-8). Paretian efficiency is also competitive efficiency in economic textbooks (Gill 1973, pp 507-510). This theoretical definition of efficiency is a textbook teaching “benchmark” for policy analysis.

Such “efficiency” does not exist in the real world because of very restrictive underlying assumptions of pure competition. The real world of agricultural markets is one of substantial government intervention, unequal distribution of market power, intense regulation, immobility of factors of production, and very imperfect knowledge. To use “efficiency” as the solution to debilitated agricultural export industries becomes an exercise in politics rather than economics. It exploits an idea and misapplies it.

The apparent understanding of competitive efficiency used by most Australian politicians, academic advisors, bureaucrats, and media commentators is the ability of an agricultural industry to meet some international or border price of a particular commodity. Border price comparisons show Australian farmers are very competitive.

Table 2. Agricultural Support: Selected Comparisons 2000/2002

Country	NZ	Australia	EU	US	Canada	OECD
%PSE	1%	4%	35%	21%	19%	31%
NPCp	1.01	1	1.33	1.13	1.12	1.32
NPCc	1.1	1	1.4	1.11	1.16	1.37

Notes:

% Producer Support Estimate (%PSE) measures total farm support as a % of total farm revenue at farm gate value

Nominal Protection Coefficient for Producers (NPCp) is the ratio of the average price received by producers at farm gate to border prices measured at farm gate value

Nominal Protection Coefficient for consumers (NPCc) is the ratio between the average price paid by consumers at farm gate to border price measured at farm gate value

Source. Agricultural Policies in OECD Countries Monitoring and Evaluation, Highlights, 2003; Annex Table 2; Annex Table 6 (OECD 2002)

By OECD standards, Australia is second only to New Zealand in terms minimal farm support measured as %PSE. The common efficiency measure of Australian farmers is confirmed by the NPCp value of 1. At this value, the average farm gate price received for commodities is equal to the international price border price. With an NPCc of 1, Australian consumers have the cheapest food inputs across the OECD.

Australian farmers are border price/ internationally competitive. However, they are not “competitively” efficient. This confused understanding of efficiency has important implications for rural policy and sectoral stability. It lies at the heart of the inappropriate structural adjustment solutions of current Australian agricultural policy.

Of agricultural production

Conflict between urban lifestyle values and the farm sector can be directly attributed to rural policy reliance upon CGE modelling. Urban lifestyle policy solutions require government intervention to alleviate perceived externalities from the agricultural production process. Purely competitive price determination under CGE modelling is a market clearance competitive efficiency outcome. There is no role for government intervention under the principles of competitive efficiency.

The appropriate market-clearing price, in a purely competitive market structure, is determined when marginal costs of inputs equal the marginal value of output. Inputs are restricted to those required in the actual physical production process. Input costs therefore do not recognise unintended outcomes of the production process that are costs to the overall welfare of society in terms of environmental and conservation impacts and resource depletion. This is why agricultural policy and environmental policy in Australia are in open conflict.

The theoretical way around this policy dilemma is the Kaldor-Hicks compensation solution whereby gainers compensate losers. Real world outcomes of the applied compensation principle appear to be that gainers gain and losers lose. Real world outcomes expressed physically in terms of unemployed/ underemployed factors of production, rising levels of poverty, falling living standards, and consequent

breakdown in the fabric of society are tell-tale signs of emerging conflict between theoretical and real world outcomes. They are also physical evidence of an inefficient allocation of resources for the economy as a whole.

4. A Suggested Way Forward

There clearly is a case for leaders from both environmental movements and rural agro-politics to take advice from a wider range of economic philosophy and theory than the current economic orthodoxy. Both sides have much at stake; but then, so does the economic welfare of society. Domestic thinking needs renewal.

International thinking also needs renewal, if only because of Australia and other WTO members ratifying the WTO Agreement on Agriculture. A rules based system exists, yet it is not recognised by those advocating current policy directions in Australia. How long can the now established, legal international framework for international agricultural trade be ignored by such (clearly myopic) “thinkers”? How long will they, and we, hide behind expressed fears of “retaliation” were Australia to act within the rules to advance its national interest? The US Farm Bill is WTO AoA compatible.

The WTO system has become also the model under which member countries engage in bilateral trade agreements, of which NAFTA and the USA-Australia agreement are examples. Indeed the signing of the USA A FTA makes it increasingly important for Australian policy leaders to embrace WTO AoA Rules. The increase in farm support in Mexico (OECD 2002, Annex Table 2, p 44) from 0% in 1986-88 to 22% by 2002-03 indicates the importance of such measures under a FTA, as do ongoing CAP measures within the EU. An important point is that NAFTA member nations may enjoy access *via* the US to Australia. Australia’s 5% PSE in 2002 sees its industries dangerously unsupported when compared to the 18%, 20% and 22% PSE levels in the NAFTA parties of USA, Canada and Mexico respectively (OECD 2002, *op cit*).

Under WTO AoA regulations (WTO , pp 43-71, and as detailed in Table 2), Australia’s domestic support to agriculture could be considerably upgraded. Other advanced agricultural producing countries more imaginatively structure farm support programs to meet a wide diversity of policy objectives ranging across farm income support, food nutritional programs, conservation and environmental policy, and regional development.

There are clearly defined grounds upon which domestic support can be provided. Each member nation has an agreed upon “Aggregate Measure of Support” (AMS). The AMS refers to the annual level of monetary support provided to producers of an agricultural product. A defined base period and given formula is used to calculate support at point of first sale. All budgetary outlays of governments as either taxation relief or actual expenditure are included.

A system of exclusions and exemptions is provided under which a member nation can deliver support in addition to their defined AMS. Australian agriculture will need to embrace the system of exemptions to structure a modern agricultural policy for the twenty first century rules-based environment.

Table 2: Some of the possibilities under the WTO AoA

Exclusions

AMS calculation excludes support to domestic producers under prescribed circumstances.

De Minimis Percentage. Designated product specific or product non-specific support that does not exceed 5% of the value of production is excluded.

Supply Constraint. Direct payments to producers under prescribed production constraints are excluded provided: Payments are based upon predetermined area and yields; Payments are 85% or less of the base production level; Livestock payments based upon a fixed number of head.

Exemptions

Certain expenditures on farm support programs can be exempt from AMS reduction calculation. Such expenditure must have *little or no trade distorting effects* upon production. Programs can be funded through either public expenditure or taxation concessions; but cannot provide price support to producers.

Government general service programs are considered exempt e.g.: research, pest and disease control, training, inspection services, marketing and promotion. and infrastructure. Considerable opportunities exist across government general services, nutritional food programs, income support, environmental objectives, structural adjustment, rural development, and retirement programs. An untapped public policy area in Australia is nutritional food aid to underprivileged groups. Eligibility for benefits must be clearly defined in terms of nutritional objectives.

Income Support: Direct Payments

Direct payments to producers for income support are allowable; but must not have the effect of price support. Programs can be designed around the following policy instruments: decoupled income support, income insurance, natural disasters, structural adjustment, environmental programs, and regional assistance.

Decoupled income programs must be based upon income, producer or landowner status, and factor use or production level over a defined fixed base period. Payments cannot recognize price or production information post the selected base period. Payments can be made under circumstance of nil production.

Income insurance benefits and income safety net payments can be designed provided payments are based upon income loss from agricultural activities. Income loss must exceed 30% averaged over the preceding three years. A variation of this formula is a three year average from the preceding five years income. Payments must be less than 70% of eligible income and not related to production or price.

Natural Disaster payments can be structured as income support. There must be a formal recognition by government that a defined natural disaster is in progress. An income loss of 30% over a three-year defined period is required. Payments are restricted to income loss, livestock losses, and land degradation due to the defined natural disaster.

Structural adjustment benefits can include retirement programs for aged farmers and those exiting marketable agricultural production. Resource retirement programs are also an option. Resource retirement programs must be for a minimum period of three years comprising retirement of land or livestock from marketable agricultural production. Payments ignore remaining farm resource use and prevailing commodity prices. Within certain prescribed parameters, structural adjustment can be provided also in the form of investment aids to physically restructure a farm operation experiencing structural disadvantage

Environmental programs based upon direct payments must be part of defined government environmental or conservation policy objectives. Specific program requirements are required to be met by recipients and can encompass production methods or input use. Payments must relate to income loss or increased costs from compliance with government environmental programs.

Regional Assistance Programs payments can be made to producers in disadvantaged regions. A region must be defined geographically with a recognized economic and administrative identity. The regional disadvantage must be defined in law or regulation; and, not be of a temporary nature. Payments can not recognize type or volume of production post the defined base year unless that production pattern is to be reduced.

5. Conclusions

As Australia enters the twenty first century, agricultural policy is still firmly anchored to the protectionist debate from the third quarter of last century and the economic orthodoxy that swept the western world from the mid 1970's. This was a neoclassical synthesis underwritten by general equilibrium theory.

Technological advances in the early 1970's made possible the development of computerized general equilibrium modelling of the Australian economy. This modelling has been seen as an essential tool of industry and policy analysis since, with pervasive effects on economic thinking in Australia. For agriculture, economic modelling of solutions to industry dislocation has become almost ritualistic. Politicians and industry leaders deliver "enlightened" modelled solutions of necessary structural adjustment to troubled industries.

The tragedy for agriculture is that underlying economic modelling are very restrictive assumptions that do not reflect the real world. Consequently, the 1936 criticisms of Keynes remain valid because neither the underlying assumptions of CGE nor the modelled outcomes reflect the realities faced by agriculture and Australia. Modelled solutions to real world agricultural policy problems are not possible. Strict adherence to modelled structural adjustment solutions in agricultural policy become more an exercise in social engineering than appropriate policy formulation or tenable problem resolution.

Competitive efficiency of agricultural industries has been the mantra of politicians and agro politicians justifying their commitment to structural reform of rural industries. Competitive efficiency though has a particular meaning in general equilibrium theory. It is not clear that those who mouth the mantra understand the implications for real world policy.

For competitive efficiency to prevail all markets have to clear simultaneously at market clearing prices such that marginal input costs equal marginal output price. Unintended costs of the production system on the wider society such as environmental, conservation and resource sustainability are not part of competitive efficiency costing. Failure of environmental and agro political leaders to understand this feature of agricultural policy means that urban and rural Australia are now in open conflict. There is a real need for leaders of both groups to understand the nature of the problem and pursue a mutual political solution

WTO member nations ratified the Agreement on Agriculture in 1995. For almost a decade, mature agricultural countries overseas have used WTO AoA Rules to structure compliant domestic agricultural support using AMSs to their fullest and to employ the system of exempt payments to maximise domestic agricultural support. Australia stubbornly resists this change and clings to the policies of yesterday.

Now that Australia has negotiated an FTA with the US, the "vintage policy" of structural adjustment and its relevance must come under increasing pressure. The Mexican and Canadian experiences should not be ignored. Nor should arrangements deemed necessary for cohesion, social or otherwise, in other FTAs.

WTO AoA exempt policy instruments can accommodate the environmental movement demands for lifestyle policies in Australia. Policy instruments can be structured so that they can form income flows and compensation to affected rural producers. This will deliver, in part, some much needed redistribution of income back to rural Australians.

In the end Australia and Australians must provide answers to these questions:

- How long can Australia continue to redistribute income away from rural Australia to urban Australia?
- What are the political ramifications of continuing down this path?
- How do you deliver a just price for agricultural output in a modern society given the lack of market power in the farm sector?
- How does a modern society resolve the conflict between urban lifestyle issues and rural policy predicated upon irrelevant theoretical constructs?
- How much longer can Australia continue to ignore the WTO AoA and a rules-based system of international trade in agriculture?
- What are the ramifications for rural Australia if agricultural policy remains entrenched in the debate from the third quarter of last century?

Answering such important questions deserves priority, and not just in regional or rural circles but also in the national dialogue.

References

- ABARE. Farm Surveys Report. 96.
- Australia. Productivity Commission. (1999). **Impact of competition policy reforms on rural and regional Australia : inquiry report**. Canberra, Commonwealth of Australia.
- Australian Bureau of Agricultural and Resource Economics ABARE (2002). **Australian Commodity Statistics**. Canberra, ABARE.
- Brown, A. D. (2003). **Feed or Feedback**. Utrecht, International Books.
- Buckland and Campbell (1980). BAE Quarterly Review of the Rural Economy 2(1).
- CIE (2002). Cleaning up the Act: The impacts of Changes to the Sugar Industry Act 1999. Canberra, Centre for International Economics: 133.
- Davidson, F. G. and B. R. Stewardson (1978). **Economics of Australian Industry**, Longman Cheshire.
- Gill, R. T. (1973). **Economics: A Text with Included Readings**", Goodyear Publishing Co.
- Gruen, F. H. and Academy of the Social Sciences in Australia (1978). **Surveys of Australian economics**. Sydney, Allen and Unwin.
- Hayek, F. A. (1935). **Prices and Production**, George Rutledge & Sons.
- Hilderbrand (2002). Report of the Independent Assessment of the Sugar Industry. C. o. Australia.
- Koutsoyiannis, A. (1975). **Modern microeconomics**. London, Macmillan.
- Muker, A. (2000). "Developing Countries and the WTO." Journal of World Trade 6(34).
- National Farmers Federation (1995). Beating the commodity price cycle. Canberra, NFF.
- OECD (2000). Agricultural Policies in OECD Countries: Monitoring and Evaluation. Paris, OECD.
- OECD (2002). Agricultural Policies in OECD Countries: Monitoring and Evaluation. Paris, OECD.
- Productivity Commission (1999). Impact of Competition Policy Reforms on Rural and Regional Australia. Canberra, Ausinfo.
- Rees, B. (1995). Rural Policy Economic Modelling. Annual Conference Australia and New Zealand section Regional Science Assn., Brisbane.
- Rees, B. and M. McGovern (1992). Microeconomic Reform: Problem or Answer. Economics in Business & Government Conference, Gold Coast.
- Senate Rural and Regional Affairs and Transport References Committee (1994). Rural Adjustment, Rural Debt and Rural Reconstruction. Canberra, Australian Senate.
- WTO Agreement on Agriculture.