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Can supply management halt the decline in agricultural commodity prices?

SUMMARY

- The long-term downward trend and variability in agricultural commodity prices pose problems for the agricultural sector and the macroeconomy of commodity-dependent developing countries.
- Declining real commodity prices are seen as the result of the tendency for supplies to increase ahead of demand. This has led to interest in the scope for supply control agreements among producing countries to influence prices, similar to the international commodity agreements of the past.
- While an agreement among producing countries to restrict supplies may raise commodity prices, the difficulty is to design workable supply management mechanisms and to maintain the commitment of the parties to such agreements.

The prolonged slump in the prices of many agricultural commodities from the mid 1990s to around 2001 highlighted the continuing economic problems posed by commodity price variability for commodity-dependent developing countries. This prompted renewed interest in the behaviour of commodity prices and the questions of whether and how price variability might be controlled. This brief reviews some of the issues involved in attempting to control commodity prices by managing supplies.

Trends and variability in agricultural commodity prices[1]

Real commodity prices have declined persistently by two percent per year on average, but with substantial and unpredictable variation from year to year. At times, as in the second half of the 1990s, price declines have been steep and sustained. These patterns pose problems for producing and exporting countries of those commodities, for farmers as well as the national economies, especially in those countries which are heavily dependent on one or a few commodities. Burundi, Ethiopia and Uganda, for example, each derive more that 50 percent of their export earnings from coffee, and Burkina Faso derives more than 50 percent of its export earnings from cotton. Such countries are particularly vulnerable to instability and weakening of prices for their export commodities. Unemployment, declining incomes, and food insecurity result, together with lower levels of expenditure on health and education. Lower levels of investment in agriculture, in production itself as well as at other levels in the chain including marketing and processing are likely to be seen. Government revenues also suffer. A decline in real prices implies a declining terms of trade, both at the farm and national levels, so that smaller volumes of farm inputs and of national imports can be purchased with the proceeds of a given volume of production. Any slump in commodity prices also makes debt repayment more difficult, thus increasing the long term debt of these countries.

Declining real commodity prices are to be expected as improvements in technology reduce costs of production and increase supply faster than population and income growth increase demand. In many cases, however, these improvements in technology are centred in developed countries and the more advanced developing countries, while the Least Developed Countries in particular are unable to improve technology at the same rate, and thus face declining prices for their export commodities without the benefit of reducing costs. Low income elasticities of demand for most agricultural commodities mean that a lower proportion of increasing incomes is spent on them than on other items, so demand for

[1] For a comprehensive discussion of commodity price trends and variability see Sarris, A. and Hallam, D. *Agricultural Commodity Markets and Trade*, Edward Elgar, Cheltenham, 2006.

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agricultural commodities grows more slowly than demand for manufactured goods and services. Some commodities, particularly raw materials such as fibres and rubber, have also seen their demand weaken as a result of competition from synthetic substitutes.

Commodity price instability is the outcome of shocks to supply and demand. Supply shocks, which are typically weather-related, are perhaps most important, although for certain raw materials demand shocks resulting from fluctuating levels of economic growth in the major consuming countries can be important too. The resulting price movements for commodities are typically more pronounced than might be expected for manufactured products because of the inelastic nature of commodity supply and demand, at least in the short run.

The revival of interest in commodity supply management

The view that low commodity prices are the result of structural oversupply has led to a revival of interest in the possibility of managing supplies on world markets either through curtailing production or restricting exports, with the objective of raising the average level of prices. In 2000, the Association of Coffee Producing Countries attempted to organize a coffee export retention scheme, while the International Tripartite Rubber Council, formed in 2001, aimed to coordinate the implementation of natural rubber supply measures. Supply management is at the centre of the recent proposals put forward in the WTO Committee on Trade and Development by a number of African countries for "urgent action to deal with the crisis situation created by the long-term trend towards decline in prices of primary commodities"[2]. The idea has also been discussed in various books and articles.[3]

Such schemes hark back to the international commodity agreements (ICAs) with "economic clauses" permitting market interventions which were widely seen in the 1970s as a solution to the problems of tropical commodities facing weak markets and variable prices. Various attempts have been made in the past half-century or more to influence the level or variability of commodity prices by manipulating the quantity of the commodity coming to the market. Prices might be raised by reducing the volume of the commodity supplied; and prices might be stabilised by withdrawing supplies from the market at periods of low prices, and by increasing supplies to the market when prices are high. Thus a series of International Commodity Agreements (ICAs) were instituted in the 1950s and 60s which involved either or both imposing restrictions on production and exports, or buffer stock arrangements (strategic buying, stockholding and selling) for commodities such as coffee, cocoa, sugar, rubber and, a notable non-agricultural example, tin.

The experience of these ICAs provides some indication as to whether modern supply management schemes might work. None of these schemes continues to function. The buffer stock arrangement for tin collapsed dramatically, while arrangements for coffee, cocoa and natural rubber lapsed through lack of member support. Market interventions ended for sugar in 1984, for coffee in 1989 and for cocoa in 1993, while for rubber the arrangements continued until 1999. The ICAs are not now widely regarded as a success, although the coffee agreement did succeed in keeping prices within the agreed range for some time. The coffee agreement also succeeded in raising prices above what they would otherwise have been,[4] and its passing is seen by some as one reason for the collapse in coffee prices from 1997 onwards. Today existing ICAs focus on measures to improve the functioning of markets, and there is little prospect of the resurrection of their economic clauses.

Some, it might be argued, endured as long as they did only because they had little impact. Their managers and members inevitably faced the difficulty of identifying and agreeing to sustainable levels of support prices. Producer interests typically press for high price levels which, in a period of weak markets, place great demands on members for support and ultimately become unsustainable. Maintaining support for a scheme becomes particularly difficult where it depends on the continuing cohesion of an international consortium of producing and consuming countries. In addition, non-member countries ("free riders") are able not only to benefit from but, if their production increases, to undermine, any improved market conditions which result from the intervention.

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[2] WTO Committee on Trade and Development. *Non-paper on the need for urgent action in WTO to deal with the crisis situation created by the long-term trend towards decline in prices of primary commodities to the trade and development of developing countries which are heavily dependent on their exports*, communication from Kenya, Uganda and Tanzania, 14 April 2003.

[3] See, for example: Maizels, A., Bacon, R. and Mavrotas, G. *Commodity Supply Management by Producing Countries. A Case Study of the Tropical Beverage Crops*. Oxford University Press, Oxford, 1997; Robbins, P. *Stolen Fruit – the tropical commodities disaster*, Zed Books, London, 2003.

[4] Palm, F.C. and Vogelvang, B., *The effectiveness of the world coffee agreement: a simulation study using a quarterly model of the world coffee market. In* Guvenen, O., Labys, W.C. and Lesourd, J-B. (eds.) *International Commodity Market Models*, Chapman and Hall, London, 1991.

Could international commodity supply management agreements work?

In spite of the unconvincing record of the old ICAs, interest persists in supply management by producing countries to counter the long-run fall in international commodity prices. These "producer-only agreements" involve export retention or international stock management schemes, or diversion of low quality produce into alternative uses. However, the experience to date has not been encouraging. It is clear that restricting supplies of a commodity will, with given demand, raise the price in the short-run and, depending upon the elasticity of demand, revenue. Nevertheless, designing workable supply management mechanisms and maintaining the continuing commitment of the parties to the discipline of an agreement are problematic, and free rider problems persist with those suppliers outside the agreement. In view of these practical difficulties and complexities, technical assistance in establishing a scheme may be required. Administration of an agreement has also become more difficult after market liberalisation which reformed or removed institutional mechanisms – the commodity marketing boards in developing countries – for this.

In principle, the conditions for a successful – in the sense of raising prices or slowing their fall – producer-only agreement do not appear demanding. The basic requirements are[5]:

1. the parties to the agreement should control a high percentage of production;
2. price inelastic demand;
3. modest price objectives;
4. a high degree of commitment to a simple instrument.

The conditions are not prohibitive and the share of trade that a group needs to command (which depends on elasticities of import demand and export supply in non-members) need not be impossibly high to achieve gains in export earnings by withholding some supplies from the market in the short-run. In the longer-run the elasticities rise and with them the critical share required for the successful operation of an agreement, but this should not rule out modestly aimed agreements for a limited number of years. It is not a requirement for an international agreement that it should be designed to last for ever; periodic re-assessments of the membership and tactics make good sense. In any case market intervention cannot be sustained in a one-sided way to counter the tendency for relative commodity prices to decline in the long-run. This can only be achieved by bringing about a permanently improved balance between supply and demand growth.

[5] Maizels, Bacon and Mavrotas, op cit.

The first two conditions are generally relatively easy to fulfil since production of many commodities, although not coffee, is geographically concentrated, and commodity demand is indeed typically inelastic. However, there is a tendency to be overambitious with respect to target prices and to be unwilling to recognise the need to adjust targets in line with changing market conditions, with politics rather than economics governing decisions. There are also difficulties in choosing the currency to denominate the target prices. If the target price is set in US dollars then devaluation of national currencies against this can offset falls in the dollar price. The devaluation of the Brazilian Real in the 1990s was one factor which led to growth in world coffee output in spite of falling dollar prices, for example.

Above all maintaining commitment, including financial support to establish and implement a scheme, is the most difficult as the experience with the ACPC coffee export retention scheme indicates. The ACPC promoted a retention scheme from 1 October 2000 to retain 20 percent of exports to maintain prices above 95 cents/pound and release supplies onto the market when prices exceeded 105 cents/pound. While 19 countries joined, including non-members of ACPC such as Viet Nam, few actually retained any coffee at all: only Brazil, Colombia, Costa Rica and, temporarily, Viet Nam cooperated. Exports and stocks continued to rise, and prices continued to fall. FAO analysis indicated that if 20 percent of exports had actually been retained off the market in 2001, international prices would have been up to 32 percent higher, and the total export revenue accruing to all exporters would have been five to six percent higher. However, in spite of this apparently large increase in prices, the specified floor price of 95 cents per pound would still not have been reached, so low had prices fallen. In practice few exporters actually committed to retaining any exports. If Brazil, Colombia, Costa Rica and Viet Nam had actually implemented the 20 percent retention, world prices would have risen by around 17 percent. However, this would not have compensated for the revenue loss due to the reduced volume of exports, and the revenue accruing to these countries would have fallen by about six percent. On the other hand, those countries not participating in the scheme and maintaining export volumes would have increased their revenues by 17 percent in line with the price increase. It appears therefore that prices could have been raised significantly in 2001, although not to the target level, even without full participation in the scheme. However, the most active supporters of the scheme would have lost revenues, while the free riders would have gained. It is not surprising therefore that even those exporters initially declaring an intention

to participate withdrew their support. The higher the target prices set the greater the incentive for low-cost producers to cheat, and for those outside the agreement to increase their production and market share.

Control of cheating and free-riders is much easier if an agreement has full participation of importers. Importers must be willing to limit imports in line with the scheme, otherwise exports outside the scheme will find a market and undermine the schemes objectives. However, consuming countries and the multinational trading companies which buy and process many commodities are not likely to favour higher prices, unless they value price stability more highly or see higher prices as a not very transparent form of development aid. Under the old ICAs importers saw it in their interest to participate to prevent strong producer cartels from pushing up prices to unacceptable levels. Participation of consumers is not only desirable from the policing point of view, it may also be a legal requirement that importers and their interests are represented under WTO rules, although the constraints on WTO members forming producer-only agreements are not entirely clear.

Without importer participation, producer-only agreements are the only possibility, and in spite of the continuing interest in such arrangements, it is clear that market intervention of the producer-only agreement type is fraught with difficulties. The manipulation of commodity prices based on the management of supply appears to be regarded with some degree of scepticism at least by the consuming countries, partly because previous attempts have proved to be ineffective and unsustainable, and partly because many countries, the developed consuming nations in particular, are no longer prepared to support them.

Alternatives to supply management

Market prices might also be improved by encouraging stronger demand by consumers, in international markets as well as within producing countries. Thus generic promotion of coffee, cotton, and other commodities has been conducted by international organisations, largely funded by the producing countries. This promotion has, in some cases at least, yielded positive results. However, to be successful, promotion needs to be sustained for a sufficient time for results to be generated, and in this respect, international generic promotion efforts have, in common with international supply management arrangements, faced the problem of maintaining the ongoing collective support of their backers.

Contemporary attempts to assist commodity producers are focussed more on enabling them to better cope with market forces than attempting to manipulate the markets onto which commodities are sold. One area of attention has been the possibility of providing arrangements for small producers to hedge against risk using market-based risk management tools, although small producers typically cannot easily use such instruments.

Assisting producers to improve their efficiency through adoption of superior technology, as well as improving efficiency in marketing and processing, would allow them to improve profitability, thus compensating for the downward price trend and strengthening their capacity to withstand income variability. The Common Fund for Commodities, originally conceived as a body which could be instrumental in supply management has, in the event, devoted itself almost entirely to promoting improved efficiency of production, processing and marketing as well as improving product quality and, in some cases, the development of new products.

Diversification (producing and exporting a wider range of commodities) reduces the variability of farm incomes and of national export earnings, though the degree of effectiveness depends on the relationship between commodities; where all commodities face weak markets at the same time, perhaps as a result of poorly-performing economies in consuming countries, diversification may have limited impact. Value addition, or processing of the raw materials, is a form of diversification which not only allows greater returns to be realised by the producing country, but may provide access to markets which behave differently, i.e. with more elastic demand, to those for raw commodities, thus providing a more effective reduction in price variability. However, the limited availability of investment funding, skills and technology in developing countries often limits their capacity to undertake value-adding efficiently, and "tariff escalation", the imposition of higher levels of protection against processed goods imposed by many countries, adds significantly to their difficulties.

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