

# Supply Management

## Options for Commodity Income Stabilization

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### **Tackling Commodity Price Volatility**

This paper is published as part of a larger project, sponsored by the Norwegian Government, on policy options to tackle the problem of commodity price volatility. More research and papers are at <http://www.iisd.org/trade/commodities/price.asp>

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## Acronyms

ACP	African, Caribbean and Pacific
APPC	Association of Coffee Producing Countries (Spanish translation)
BMC	Botswana Meat Commission
CAP	Common Agricultural Policy
CFC	Chicken Farmers of Canada
CSA	Commonwealth Sugar Agreement
CSO	Central Selling Organization
EEC	European Economic Community
ECLAC	UN Economic Commission for Latin America
EU	European Union
HA	hectare
ICA	International Commodity Agreement
ICCA	International Cocoa Agreement
IMF	International Monetary Fund
ITA	International Tin Agreement
OPEC	Organization of Petroleum Exporting Countries
SCM	supply chain management
SM	supply management
U.K.	United Kingdom
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
U.S.	United States

*It cannot be contended nowadays that it is impossible to manage prices so as to introduce stability into them. The real questions are: Who is to do the managing? And for what purpose? Is it to be done by powerful corporations for the purpose of making as much profit as possible, or is it to be done on behalf of the community with the general well-being as the end in view? The pace towards the former method has been very rapid during the past twenty years, and the longer society shirks its duty in undertaking its responsibilities, the more difficult they will become.*

*Free competition never was a safeguard for the people.*

Lord Addison of Stallingborough  
U.K. Minister of Agriculture, 1930–31  
(writing in 1939<sup>1</sup>)

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<sup>1</sup> Addison (1939), pp. 122–23.

# 1 An overview: theory and structure of supply management

The best known tool for commodity price stabilization, especially in developing countries, is supply management (SM). Management of both domestic and international commodity supplies by governments has a history dating back to the agricultural price crisis of the 1930s. It has been a mechanism in the defence of poorer countries' interests on numerous world markets. What is less widely considered is SM's basis in market mechanisms, as a tool in the hands of powerful players in the market.

The purpose of supply management is to control the supply of a commodity relative to demand, in order to influence its price. SM can take numerous forms: it can be national or international; state-controlled, farmer-controlled or corporate; and can use quotas, buffer stocks, import tariffs and other mechanisms.

It is also open to various possible definitions. The narrowest restricts it to the use by public authorities of mandatory quotas on production or trade, or buffer stocks. However, this ignores similar techniques used by commercial agents. A more complete definition would include under supply management any mechanism that aims to control or manipulate the quantities supplied on a market, whether it is operated by commercial, public or other bodies. It suffices that they must have the required degree of influence over the market.

The agents in control of supply management can therefore be any of these:

- companies (either individually or with overt or tacit collusion);
- farmers' organizations;
- government ministries or agencies, which in turn can be:
  - those of a single country (e.g., the U.S.);
  - a group of like countries (e.g., the European Union or OPEC); or
  - in an international market, the governments of both importing and exporting nations, acting jointly.

## 1.1 Methods of supply management

At different times a wide variety of methods have been used, either alone or in combination, to manage commodity supplies. They include:

### 1.1.1 *Control of production*

#### A. Direct

In the Canadian dairy market, a government body (the Canadian Dairy Commission) monitors monthly changes in national demand and supply. A Market Sharing Quota is established for each federal province and divided among its producers.<sup>2</sup> The farmers' representative body, Dairy Farmers of Canada, negotiates prices with the processing firms. This is a system of production quotas operated by a combination of government authorities and farmers' organizations.

A quite different system controlled the oil market before the creation of OPEC (the Organization of Petroleum Exporting Countries) in 1960. Seven major companies formed a worldwide cartel and shared many contracts to run production operations,

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<sup>2</sup> Canadian Dairy Commission (2001), pp. 13–14.

enabling them to plan output jointly. This was a system of long-term planning and management of supplies. However, it had already begun to break down in the late 1950s as independent oil companies appeared on the scene.<sup>3</sup>

A method of more short-term responses to market conditions has been used by OPEC itself. Since 1983 national production quotas have been periodically negotiated between its members. Since about 1986, OPEC has combined this with a set of target prices, which the quotas are meant to support.<sup>4</sup> Adjusting output is quite easy in an industry in which the flow from a well can be regulated from day to day.

## **B. Indirect**

Production can also be controlled by indirect means. One is to require farmers to “set aside,” or leave idle, a proportion of the land devoted to a crop. This was part of U.S. agricultural policy before 1996, and in 1993 it was introduced in the EU. However, in the latter case it was not accompanied by adequate supporting measures and it proved ineffective in the long run. In the first 10 years of set-aside, EU wheat yields per hectare increased by around 10 per cent, cancelling the impact of any reduction in areas sown.<sup>5</sup> Farmers were also permitted to increase the area nominated for wheat production, so that by 2002 the area *actually sown* to wheat in the 15 then members of the EU was 18.1m HA, compared with 17.3m in 1992, the last year before set-aside. In 2000 the EU’s wheat harvest reached a new record high of 105.4m tonnes.<sup>6</sup>

### **1.1.2 Export quotas**

On several international markets, supply has been regulated indirectly by means of national quotas on exports. An early example was the International Tea Agreement (1933–55), under which the colonial governments of what are now India, Sri Lanka and Indonesia granted export quotas to tea plantations with a view to reducing oversupply and supporting world prices. In the first year, the planters had to reduce exports by at least 15 per cent from the maximum attained between 1929 and 1932. Prices began to recover immediately and they rose by 50 per cent between 1932 and 1937.<sup>7</sup>

A similar system was used from 1964 to 1989 in the International Coffee Agreement. A buffer stock would have been impractical for such a perishable product, while production quotas would have been difficult, given the long gap between planting and the first crop, and the multi-year payback required on investment in coffee trees. In commercial terms, export quotas bear some comparison with market-sharing arrangements between transnational corporations.

### **1.1.3 Manipulation of stocks**

This can be led by either private and commercial or public agencies.

## **A. Private**

On mineral markets, corporations enjoying monopoly or oligopoly positions have often controlled prices by adjusting their stocks. In the diamond market, this has been done to keep world prices high by the Central Selling Organization (CSO), run by the largest

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<sup>3</sup> *US Encyclopaedia of Energy – A History of Opec* (undated), pp. 3–4.

<sup>4</sup> *Ibid.*, p. 20.

<sup>5</sup> The French and U.K. average wheat yields over the four years 1999–2002 were 7.1 and 7.8 tonnes per hectare respectively, compared with 6.5t/HA and 7.0t/HA over the three years 1990–92. Source: UN Food & Agriculture Organization, found in 2003 at <http://apps.fao.org/page/collections?subset=agriculture>.

<sup>6</sup> *Ibid.*

<sup>7</sup> Gupta, B. (2004).

producing company, De Beers of South Africa. The six companies that used to control the aluminum market had a similar system until 1984, but their aim (besides price stability) was to keep prices low in relation to competing materials. Their method has been explained thus:

*Price fluctuations were reduced by the cartel's ability to counter cyclical trends by holding and releasing stocks, matching production carefully with demand, and exchanging metal between producers in order to smooth over particular supply difficulties.*<sup>8</sup>

Modern agricultural supply chains tend to be controlled by companies at the processing and retail stages of the supply chain, which manipulate stocks in their favour under a system known as supply *chain* management (SCM). A supermarket or other purchasing firm will buy only as much as it knows it can sell at a desired price level, and will manage its stocks accordingly; this ensures that, when there is excess supply, the excess stocks are held further back along the supply chain. Any downward price pressure is felt by farmers and the producer end of the chain.

Naturally, stock manipulation can only succeed if the companies concerned have a requisite degree of market power. The collapse of the aluminum arrangement in the 1980s coincided with a decline in the four leading companies' combined market share below a critical threshold of 40 per cent.<sup>9</sup>

## **B. Public**

The former International Tin Agreement (ITA) was based on a “buffer” stock of the metal, run from London. Every five years, an anticipated price range for the metal was negotiated between producer and consumer countries. If the market price went near or below the bottom of that range, the buffer stock manager bought tin to support the price; if it approached or exceeded the top of the range, he had to sell. This was akin to Keynesian countercyclical fiscal policy, in which a budget deficit puts money into the economy at the bottom of the business cycle and a budget surplus takes money out during a boom. Commodity supply management by public authorities started as a response to the 1930s Depression and was advocated by Keynes himself, who wanted it to form part of an International Trade Organization alongside the International Monetary Fund and the World Bank.

### **1.1.4 Minimum purchase price**

The ITA's aim was to stabilize and support tin prices while the European Economic Community's Common Agricultural Policy (CAP) in its classical form (from the 1960s to the 1980s) aimed to support farmers' incomes and also ensure that the EEC produced enough food to feed itself. It sought therefore to *stimulate* agricultural supply rather than limit it. This was also a form of SM. For each product supported by the CAP, a minimum price was defined and tariffs ensured that no imports could undercut that price. If farmers could not sell their output there was a guarantee to purchase it (or “intervene”) at the declared price and place the produce in store. These stores were known as “intervention stocks.” This supported farmers' incomes and enabled them to invest, use more inputs and produce more.

The U.K. government set up state marketing boards in the late 1940s, also with the aim of increasing domestic supplies and stabilizing farm prices but while keeping prices for consumers (and food-processing industries) low. The boards bought the produce on numerous markets (e.g., eggs, milk, potatoes) at fixed prices which were negotiated with

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<sup>8</sup> Lines (1990), p. 250.

<sup>9</sup> *Ibid.*, p. 248.

farmers' representatives every year. Retail prices were kept at the world market level, and where domestic costs were above that, the government paid farmers the difference in so-called "deficiency payments."

This system must be distinguished from minimum prices under fair trade schemes, which do not have any ambition of influencing total quantities supplied on a market.

### **1.1.5 Border measures**

EU import tariffs have safeguarded the prices promised to domestic farmers, enabling them to produce more. Other types of border measure can have a more direct effect on supply, by limiting import volumes. Import controls have indeed been described as one of three "fundamental pillars of supply management," alongside producer pricing and production discipline.<sup>10</sup> Accompanying measures of this sort can be essential to make supply management work—as we saw earlier with the EU's wheat set-aside, the accompanying rules of which were not drawn tightly enough.

However, developing countries in recent years have been encouraged to reduce their agricultural tariffs, purportedly in order to stimulate farmers' efficiency as a consequence of competition. This has often made it difficult for domestic farmers to keep their markets and imports have taken a greater share.

## **1.2 The drivers of supply management**

Another way to categorize SM systems is by looking at the driver of the process. Is it a public body, a commercial body or part of civil society? Is it at the producer or consumer end of the supply chain, or by agreement between them? An analysis by these criteria leads to this classification, with examples:

### **1.2.1 Commercial – producer-driven**

1. Under monopoly control. Example: diamonds. The CSO's set-up is beginning to break down now, but De Beers continued to market other producers' diamonds for a long time after it ceased to have a monopoly, because those producers recognized that by these means they too could achieve higher prices.
2. Under oligopoly. Examples: the aluminum and nickel markets until the 1980s. In aluminum, the biggest producer (Alcan of Canada) declared its sales price and the other five dominant producers followed. By adjusting their stocks of finished metal, they kept prices stable. The system broke down for two reasons. During the 1981–82 recession, demand fell more sharply than at any time since the 1930s, while in 1978 the London Metal Exchange had launched an aluminum contract through which consumers could purchase the metal at lower prices, reflecting those market conditions. In 1984, Alcan abandoned its declared price and this system of commercial supply control was ended. Stable aluminum prices disappeared with it.

### **1.2.2 Commercial – buyer-driven**

After coffee supply management was abandoned in 1989, coffee-roaster companies consolidated rapidly into a small number of global corporations. Previously, they had been divided along national lines. But production was still fragmented among an estimated 25 million farmers,<sup>11</sup> giving the roasters great power over the supply chain.

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<sup>10</sup> For example, in CBHEMA (2004).

<sup>11</sup> Oxfam (2002), p. 6.

They were able to keep their own prices to consumers reasonably stable and so enjoy very large profits, even when the international price of the raw ingredient collapsed in 2001. The roasters could pick and choose between suppliers, ensuring that their end of the chain was not oversupplied. This forced the problem of high stocks and low prices further back along the chain. From one coffee price cycle to the next, the gap between the roasters' purchase and sale prices for coffee has widened.<sup>12</sup> On many other agricultural markets, it is supermarkets that drive this process.

### **1.2.3 Public or cooperative – national, producer-driven**

1. Canadian chicken supplies are regulated by a board called Chicken Farmers of Canada (CFC), which liaises between provincial marketing boards. The latter consult with processors every eight weeks to find out what demand there will be, and farmers buy permits to produce up to this amount. The CFC penalizes any province that overproduces. The system is to a large extent farmer-controlled because 10 of CFC's 14 directors are farmers; the others represent other parts of the food chain.<sup>13</sup> The former U.K. system with marketing boards was comparable; the farmers did not control the boards, but their union had strong influence over the Ministry of Agriculture, Fisheries and Food.
2. Many developing countries set up marketing boards to mediate between producers and world markets. Holding monopoly rights over the export of a commodity, such boards oversee its purchasing and often its processing too, and hold it in store for export. In turn they offer farmers guaranteed prices. This is a form of buffer stock system. The *caisses de stabilization* in French-speaking countries are similar, but license out more of their operations to private traders.<sup>14</sup>

Some of these marketing boards have been controlled by farmers' cooperatives. A famous example is the Federación Nacional de Cafeteros de Colombia (Fedecafé). This organization markets approximately 30 per cent of the country's coffee exports and manages the Fondo Nacional del Café, which was created by the government in 1940 to support coffee producers.

### **1.2.4 Public – international, producer-driven**

1. Oil. Under OPEC, producer countries manipulate output in order to attain prices they desire and maintain effective control over the market (in combination with the oil corporations).
2. The classical CAP was run by government bodies and driven by political support for agricultural producers. It can therefore be said to be producer-driven, if indirectly. However, it is widely argued that after recent reforms the CAP (like the U.S. Farm Bills since 1996) is driven more by food-processing and retailing companies' interests, since it assures them of *low* prices for their inputs. The farmers continue to receive subsidies, but only with the effect of compensating them for lower prices.

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<sup>12</sup> Over the last two cycles, the average British retail coffee price rose from 8.9 times to 15.1 times the international price at the peak months (in 1997 and 2004–05) and from 11.4 times to 26.1 times the international price at the troughs (in 1993 and 2002). The data is from the International Coffee Organization, cited in Lines (2006), p. 21, and Lines (2004), pp. 16–17.

<sup>13</sup> Levy (2000).

<sup>14</sup> Parimal (2006), p. 25.

### ***1.2.5 Public – international, paternalistic***

There is an element of supply management in the cane sugar import quotas which a small group of countries have been granted on European markets, first in the U.K. alone under the Commonwealth Sugar Agreement (CSA) and then, since the 1970s, under the Sugar Protocol between the European Union and the African, Caribbean and Pacific (ACP) bloc. This is paternalistic because under the Sugar Protocol the quotas are offered at the discretion of the EU and can be unilaterally withdrawn; indeed, they will be watered down under current reform proposals.

These arrangements also demonstrate the dangers of inflexibility in supply management, since the main beneficiaries remain almost the same group of small countries as benefited from the CSA in the 1950s. But the sugar market has changed very greatly since then, and these are no longer either the poorest or the biggest cane sugar exporting countries. (However, the fact that they are no longer among the poorest probably supports the arrangement's effectiveness in guaranteeing their main export at above-market prices.)

### ***1.2.6 Public – international, under producer-consumer agreement***

When people refer to supply management in relation to development, they usually have in mind the International Commodity Agreements (ICAs) which existed at various times between the 1930s and the 1990s. They were drawn up between the main producing and consuming countries of the commodity concerned. Not all involved developing countries (for example, the International Wheat Agreement), but the ICAs are most closely associated with tropical export crops such as tea, coffee, cocoa and rubber, and metals like tin. Two of the most famous were the International Tin Agreement which lasted from 1956 until 1985, and the International Coffee Agreement, the market intervention clauses of which operated from 1964 to 1989.

## 2 Strengths, weaknesses, past experiences and lessons learned

### 2.1 The history of supply management

How has supply management worked in practice and how have SM schemes evolved? The history can be conveniently divided into four phases, as described below.

1. The first systems were run by commercial monopolies and cartels. On such markets as diamonds and aluminum, they were also among the longest lasting, so they may have lessons for other agents.

The first public systems came in response to the agricultural crisis of the 1930s. Under his New Deal, President Roosevelt decided to support U.S. agricultural prices by cutting out excess supplies; the resulting systems lasted in one form or another until the 1990s. An attempt was made to internationalize this in the International Wheat Agreement of 1934. Negotiated between exporting and importing countries, it served as a model for the ICAs of later years. However, it was not very successful, although a successor, starting operations in 1949, was more so. Its aim was almost the opposite: to stabilize prices and assure *adequate* supplies, reflecting the post-war background of shortages and high prices for wheat.<sup>15</sup>

Meanwhile, also in response to the Depression, the Brazilian government supported the coffee price by burning excess supplies of coffee, while the colonial governments of India and Ceylon (under British rule) and the Dutch East Indies established the International Tea Agreement.

2. The spread of such ideas was promoted by the so-called Prebisch-Singer hypothesis published in 1950, which argued that there was a secular tendency for prices of primary products (“commodities”) to decline vis-à-vis “secondary” or manufactured products. ICAs were sponsored by the United Nations from the 1950s on. Raúl Prebisch, in his capacity as head of the UN Economic Commission for Latin America (ECLAC) and, from 1964, of the UN Conference on Trade and Development (UNCTAD), firmly supported this process. Meanwhile, the Kennedy Administration supported the creation of an International Coffee Agreement in the early 1960s, as it feared that chronic oversupplies could stimulate a spread of revolution from Cuba to nearby countries which depended on coffee exports.

Then, in 1975, the UN General Assembly approved a plan to negotiate an Integrated Programme for Commodities, which would oversee 10 such agreements on leading markets, financed by a so-called Common Fund. However, although this was formally agreed, the developed countries refused to grant the Fund sufficient finance and few new agreements were established. In the 1980s the tide of policy was turning against anything seen as intervention in markets.

3. Although public supply management had been introduced to counter falling prices in the Depression, the arrangements buckled under the pressure of another economic downturn in the early 1980s. The ITA’s collapse in 1985 severely damaged their prestige. The United States became reluctant to support them and its refusal to accept a renewal of “economic clauses” in the ICA in 1989 symbolized the end of their era.

Difficulties were encountered in administering such complex schemes, and some leading producer countries (such as Brazil in the case of coffee) also became reluctant

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<sup>15</sup> This history is summarized by the International Grains Council at <http://www.igc.org.uk/en/aboutus/default.aspx>.

to support them. There were two main problems. One lay in the admission of new members: when new producers appeared, at what point should they be accepted and how much quota would existing members allow them, at the cost of diluting their own market share? A counterpart to this was the so-called “free-rider” problem of trade occurring outside the agreement and beyond its control. There were exports by non-member countries; imports by non-members (often in the Soviet Bloc), which might be re-exported to consumer member countries; and illicit, above-quota exports by producer members.

4. In recent decades the balance of power has shifted from the producer end of many agricultural supply chains to the processing stage and the consumer end. This has sharply reduced producers’ influence and the growth of “buyer power” has elicited new forms of commercial “supply chain management.” Meanwhile, both the U.S. and the EU have abandoned public SM by “decoupling” their farm subsidies from production. This has led to structurally low prices, benefiting agro-trading and processing companies rather than farmers, as argued by a professor of agriculture in the U.S.:

*Is the US crop producer the true beneficiary of the current low price program?... The real beneficiaries of the current set of farm subsidy payments are not the crop farmers who receive them but instead are the integrated livestock producers, seed and chemical companies, agribusiness processing firms, and importing countries.<sup>16</sup>*

## 2.2 What has worked? What has not worked?

Can the virtues of supply management be replicated in future and any shortcomings avoided? Where and when has SM worked and where and when has it not?

### Worked:

- SM has had the most prolonged success where it took the simplest forms and its controlling agents have had the greatest market power. Commercial forms of SM necessarily rely on market power, and those with the most enduring success have been in monopoly or oligopoly situations such as the **diamond** and **aluminum** markets. Modern supply chain management also derives its success from market power.
- Among public forms of supply management, there have been some notable successes on domestic markets. For about 25 years, the **U.K.’s system of deficiency payments** boosted domestic supplies with predictable prices for farmers, while keeping retail food prices low. The policy was abandoned not because of any failure but as a requirement on joining the EEC in 1973. Within five years of its implementation in 1947, domestic agricultural production increased by 20 per cent (to a level that was some 50 per cent higher than in the 1930s). The country’s rate of food self-sufficiency rose steadily until the CAP reforms began in the mid-1980s, but has now fallen back to the level of 50 years ago.<sup>17</sup>

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<sup>16</sup> Ray (2007). The blessing for importing countries is mixed since this introduces unfair competition for their own farmers and—by stimulating imports—extra pressure on their balance of payments.

<sup>17</sup> Details can be found in Food Chain Analysis Group (2006), pp. 13, 16, 34 and 85–87, and at <http://statistics.defra.gov.uk/esg/quick/agri.asp>. Unfortunately, comparable self-sufficiency data do not exist for the whole period due to a change in the official method of counting in 1998.

According to its advocates, the current **Canadian system** has kept farm incomes up, enabled more family-size farms to keep going and kept retail prices stable and low. Farmer critics argue that it inhibits direct off-farm sales as well as non-standard outputs such as organic and even whole milk, and makes it difficult for young farmers to enter the profession. They criticize the fact that milk quotas were distributed free, but can be sold in Quebec for a reported CDN\$33,000 (US\$28,750) per quota cow. However, even they recognize the value of supply management and call for more flexible operation rather than its abolition.<sup>18</sup>

- On international markets, the **Coffee, Tea and Tin Agreements** were successful over periods of 25, 23 and 29 years respectively. Of these, only the Tin Agreement demonstrably failed in a technical sense, its eventual collapse being the result of an inability to defend the floor price in an exceptionally weak market.

#### **Worked in some ways, not in others:**

- Like some other bodies, **state marketing boards in developing countries** have had difficulty in determining the levels at which to support prices for farmers. Many of them failed to adjust prices sufficiently to reflect inflation, exchange rate changes and trends in world prices. When inflation was high and exchange rates overvalued, the real value of many support prices was eroded. As with other actions by state agencies under economic pressure, this may have been more often the result of inefficiency and inertia than malevolence, but the effect can be the same.

Many, but not all, of these boards were dismantled in the 1980s and 1990s under structural adjustment.<sup>19</sup> This was generally in the poorest countries: the most dependent on commodity exports and the most vulnerable to the vagaries of the markets. The World Bank led this campaign after its *World Development Report* of 1986 argued that the difference between the purchase and sale prices of an export crop amounted to taxation of the farmers, and that that difference was growing.<sup>20</sup> Numerous cases of corruption involving such boards have also been identified or alleged. This should hardly cause surprise in countries which have weak political and administrative systems and substantially non-monetized economies, and in which an export marketing board is one of the largest repositories of money, its very role lying in the manipulation of money and prices.

Experience since the abolition of marketing boards has been mixed, but the domestic terms of trade seem to have turned more against farmers in those countries that liberalized, while the shift from public to private marketing has not increased the proportion of export prices passed on to producers.<sup>21</sup> In the case of cocoa, it has been found that producer prices were more volatile in Cameroon, Côte d'Ivoire and Nigeria (which dismantled their cocoa marketing boards) than in Ghana (which did not); this suggests that, in this case at least, some stabilization of prices was achieved.<sup>22</sup>

Marketing boards have assisted rural development through ancillary services such as agricultural extension, inputs, product distribution and credit.<sup>23</sup> Some have served a

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<sup>18</sup> Personal communications from Maxime Laplante, President of Union Paysanne, Quebec (2007).

<sup>19</sup> UNCTAD (2003), pp. 38–39.

<sup>20</sup> See Chapter 4: “Agricultural policies in developing countries: Exchange rates, prices, and taxation,” in World Bank (1986), pp. 61–84.

<sup>21</sup> UNCTAD (2003), p. 39.

<sup>22</sup> *Ibid.*, citing I. ul Haque, *Commodities under Neoliberalism: The case of cocoa* (2003: Group of Twenty-Four).

<sup>23</sup> UNCTAD (2003), pp. 38–39.

wider purpose still, in enabling particular crops to get established and prosper. The Kenya Tea Development Authority pioneered smallholders' production of tea and led that country to become the largest tea exporter. In apparent imitation, Sri Lanka established a Tea Smallholdings Development Authority after its tea estates were privatized. It has often been argued that it would have been wiser to reform the marketing boards than to abolish them, in the unsubstantiated hope that private trading would satisfactorily fill all the gaps they left behind.

- The **CAP** succeeded in supporting farmers' incomes and stimulating domestic supplies for about 20 years after it was set up in the 1960s. However—rather like the Tin Agreement—it eventually became unmanageable as the intervention stocks became very large, expensive to finance and hard to dispose of. This forced it into a series of reforms which have not finished some 20 years later.
- Since the 1970s the **OPEC** member countries have maintained a strong position on the oil market, despite the expansion of other sources of supply. A less supple framework might have been broken, but it has survived and enabled those countries to benefit from the price boom of recent years. But this has been at the expense of price stability, the original motive for setting up OPEC; according to UNCTAD, the oil price has been one of the most unstable of all commodity prices.<sup>24</sup>
- Both the **International Tin Agreement** and the **aluminum cartel** achieved their price goals over long periods. The ITA was admired in its lifetime as it kept tin prices not merely stable, but on a rising trend. Both failed eventually due to an inability to respond flexibly to a sudden, sharp decline in demand. In aluminum, the oligopoly had steadily weakened already. By the 1980s, new entrants to the market and the consequences of rising energy costs had upset the six leading companies' control and their oligopoly position was lost.<sup>25</sup> But unlike the ITA, the aluminum cartel had kept its prices low with a view to winning markets from other materials; while the aluminum market grew rapidly throughout the period until the mid-1980s, the tin market was sluggish.

The ITA collapsed spectacularly after the buffer stock's price bands were raised in 1981, just as demand was falling in a recession; in 1985 the buffer stock ran out of money to defend those prices. While this failure was financial, there were also political factors in the background. The ITA could be justified more by its success in enabling high-cost tin mining to continue in Bolivia, South America's poorest country, than in the low-cost dredging operations of Southeast Asia. However, it also depended on the support of the U.K. (where the main trade was situated), which wished to keep high-cost tin mines in operation in one of its poorest regions. By the 1980s that was a less important objective of the British government.

#### **Did not work:**

- Four years after the ICA's export quotas were abandoned in 1989, 14 leading coffee-producing countries, representing 70 per cent of production, established the **Association of Coffee Producing Countries** (APPC in Spanish) with the aim of holding prices up by limiting supply. It was defeated by two events. The consolidation of coffee-roasting in four international groups (Nestlé of Switzerland and three U.S. companies: Kraft, Sara Lee and Procter & Gamble) decisively shifted

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<sup>24</sup> Among 46 commodities analyzed by UNCTAD, only pepper and palm kernel oil prices were more unstable than crude petroleum (oil) prices between 1977 and 2001. The oil price has scarcely become more stable over the five years since then. See Lines (2004), Table 4, pp. 34–35.

<sup>25</sup> See Lines (1990).

power on the supply chain. Meanwhile, Vietnam appeared as a major producing country, its output exceeded only by Brazil's. Vietnam did not join the APPC and the emergence of its coffee exports coincided with a downturn in the market. An attempt to hold back supplies in order to support the price failed, and the Association was disbanded in 2002.

- The **International Cocoa Agreement (ICCA)** was established in 1973 with the aim of stabilizing cocoa prices using both export quotas and a buffer stock. However, the buffer stock program was not implemented until 1982. By then, the quotas had been discontinued. Member countries funded the buffer stock with levies on imports and exports. The program was suspended as they started to have problems paying these levies. The buffer stock was liquidated under the 1993 agreement. Like the ICA, the ICCA still exists but without any attempt at supply management.

### 2.3 Why was supply management cut back?

There is a view that public supply management failed to do the job it was designed for and had to be abandoned. But that is too simple. In order to work, any form of supply management has to have both a technically workable mechanism and the political ability to impose that mechanism on the market. Often these technical and political requirements are confused, and a loss of political support is explained as though a project has failed technically. And where technical faults were the cause, they were not necessarily insuperable; from such failures one can learn how to avoid those faults in other schemes.

The political and technical reasons for cutting supply management back were these:

- The return of free-market thinking, pioneered by President Reagan in the U.S. and Prime Minister Thatcher in the U.K., and in the development field in the loan conditions of the IMF and structural adjustment programs of the World Bank. This thinking was transferred to the ICAs, the CAP and the U.S. Farm Bills. In 1991 the collapse of the USSR gave greater self-confidence to free-market thinkers and removed political obstacles, such as the fear of Communism which had persuaded President Kennedy to support management of the coffee market.
- Political problems within the agreements, for example over the size of quotas in the ICA.
- A failure to respond flexibly to technical challenges and market changes, such as those faced by the ITA, the Alcan reference price and the Coffee Agreement.
- Difficulties in enforcement of some international agreements, including the prevention of free-riding, imposition of production controls and competition from other commodities.
- Financial constraints in stock-based systems such as the ITA and the CAP. Weaknesses in administration (partly related to lack of resources) can also affect the ability to enforce controls.

### 2.4 What is required for supply management to succeed?

SM is partly a technical process, using certain tools to control the amounts supplied on a market, and partly an instrument of market power. In order to succeed, both technical and political requirements need to be satisfied. They are discussed now.

### 2.4.1 *Technical requirements*

1. **A coherent market.** The tin and coffee agreements worked over long periods in part because these markets have been global since at least the 19<sup>th</sup> century, with prices determined on futures exchanges in London and, in the case of coffee, New York. Price targets were therefore easily defined and could be attached to existing global marketing arrangements. Moreover, nearly all tin and coffee was produced in developing countries and exported to developed countries, so total trade was not far in volume from production. These characteristics do not apply to all international agricultural markets, whether large or small.
2. **A competent administration** to run the mechanism chosen. The ICAs had global headquarters (usually at the trading centre in London), which were able to attract staff with the skills and integrity required. However, it is open to question in how many cases successful models of supply management, such as those in Canada, can be applied on international markets, especially those for tropical crops. The policing of Canada's supply management schemes is strongly influenced by the farmers themselves. It is not easy to replicate these conditions on international markets with diverse participants at various levels of development. The problem is exacerbated in those countries where national marketing boards have been abolished, since those boards were the transmission belts for limiting supplies under the ICAs. In such places trade is now conducted by private agents, who are increasingly foreign-controlled, helping commodity purchasers in rich countries to manage their *own* sources of supply. National limitations on supply are much harder to enforce in these circumstances.
3. **Adequate measures in support** of the SM mechanism. Whatever the mechanism may be (production or export quotas, buffer stocks or something else), we have seen that accompanying measures are often needed to make it work. For example, on a domestic market imports need to be controlled, and likewise with free-riding by non-member countries on an international market. The International Tea Agreement of 1933 dealt with the latter by preventing signatory countries from exporting tea seeds (a measure that could be challenged today at the World Trade Organization). We saw that the EU's system of "setting aside" wheat land failed to keep supplies down because the designation of wheat land was poorly thought out and the effect of rising production yields seems not to have been taken into account.
4. **Tactical flexibility.** The ICAs were hampered by the need to negotiate detailed rules for the operation of buffer stocks and export quotas. The conferences that negotiated them had to determine price bands for five years, even though the very problem they addressed was the unpredictability of world prices. This was the undoing of the Tin Agreement: its price bands were raised in 1981, and as demand fell away the buffer stock had to buy more metal off the market than it could finance. OPEC has no such problem because it does not have hard and fast rules for its price decisions, nor does it buy and sell on the market; and its price targets and quotas can be changed flexibly in the light of conditions. This is also how corporate pricing and production decisions are made; and the Canadian SM systems are similarly flexible as to prices and quotas. Such flexibility seems to be needed to make supply management work. It should be based on judgments of the market, not fixed rules. This requires a degree of political confidence in those who will be making those decisions.
5. **Compatible policies for competing products.** The International Tin Agreement increased tin prices over a long period, to the benefit of producing countries.

However, this was bought at the cost of relative stagnation, as consumers switched from tin to substitute materials such as aluminum and plastics, on grounds of cost.

A comparable fate befell an attempt to control the vanilla market by Madagascar, the Comoros and Réunion Island. Formed in 1962, the cartel worked for about 10 years; but in the end it priced the spice too high, allowing Indonesia to enter the market and reduce their hold over it.<sup>26</sup>

#### **2.4.2 Political requirements**

1. The first requirement is the ability to exert **power over the supply chain**. Corporations with highly concentrated market shares (integrated oil and aluminum companies, or coffee-roasting companies) have this. States also have such power if they choose to exert it—including countervailing power against both corporate oligopolies and “buyer power.”
2. **Underlying solidarity** among those who control the process. This is particularly important on international markets and it clearly exists in corporate cartels. OPEC, too, is based on a group of neighbouring, Muslim countries in the Middle East. On the tin market, the leading producers during the time of the ITA were Indonesia, Malaysia and Thailand. There is not the same solidarity in a more dispersed market like coffee, although it is present to an extent among Latin American producing countries. A producers’ attempt in 1965–66 to manipulate the copper market failed utterly, in large part because it was a very diverse market without a dominant regional bloc.

Over the last 40 years there have been periodic attempts to create a producer bloc for better prices of tea but, in spite of the market’s compactness, they have also failed. A recent initiative by India to persuade other exporting countries to manage export supplies seems no more likely to succeed. This is because the four leading exporters (Kenya, Sri Lanka, China and India) are very diverse and the role of tea in their national economies varies widely. Kenya has developed from nothing to become the leading tea exporter over a period of 50 years, and has seen little interest in restraining its production and exports. The fact that most of India’s and China’s tea production is now consumed domestically also reduces the leverage of their export trade. This is very different from the time of the International Tea Agreement. Nearly all India’s production was then exported, it was grown mostly by colonial planters in all three leading exporting countries and colonial governments were in a strong position to influence them.

In present circumstances it seems unlikely that consumer countries will join any agreement to manage an important market, as in the former ICAs. Much time could be wasted in attempting to recreate that model of supply management. Even if the U.S. could be persuaded to join, it would be unlikely to agree to any price intervention measures. But producer-consumer agreements are the exception rather than the rule in the history of supply management. If exporting countries want supplies to be managed again, they would be well advised to rely on their own forces, as the oil producers have done.

3. **Farmers’ influence over the system**. In the developed world, this has been important in the success of Canadian SM and the U.K.’s deficiency payments and marketing boards of the 1950s and 1960s. Among developing countries, Colombia’s

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<sup>26</sup> Cadot and others (2006), p. 3.

Fedecafé is a farmer-controlled agency which has helped that small country to remain the third largest producer of coffee throughout a long civil war, with a sustained reputation for high quality. Experience in Botswana lends further support to a view that the closer the farmers are to controlling such organizations, the more successful they are likely to be. A combination of factors is reported to have led to relative success for the Botswana Meat Commission (BMC):

*The BMC has been largely controlled by cattle interests and aided the development of the industry... Under the auspices of the Lomé convention, the BMC ... negotiated access to the lucrative EEC market gaining prices far above world levels... Harvey and Lewis ... echo the majority opinion when they argue "Botswana's government was largely a government of cattlemen."<sup>27</sup>*

The apparent identity of interests between the government and the group of farmers supported by the BMC is unusual among African marketing boards. (Another unusual factor—shared by Botswana's even more successful diamond sector—lies in the high level of the export price that was available to the BMC for distribution to the farmers.)

4. On international markets, it helps to have a **“swing” producer** that is ready to vary its production in the interests of the market as a whole. Saudi Arabia has played this role in OPEC, as did Brazil in the coffee market in the early years of the ICA and in the 1920s and 1930s. That country's growing reluctance to do so was a factor in the ending of export quotas in 1989. We have seen that similar reluctance is also a barrier to cooperation on the tea market; while Ecuador for long proved to be similarly reluctant as the largest banana exporter.
5. Find ways to **exploit the wider politics of the market**. OPEC could not have survived for 47 years if it had not managed to enlist the cooperation, or at least the acquiescence, of the oil companies. It has been observed that, “The first ten formative years of OPEC [from 1960 to 1970] constituted a change in the relationship between the oil producers and the oil companies in [such] a way as to serve both interests in the changing conditions of the industry.” In a later period, Saudi Arabia—the country with the biggest oil reserves, and an important ally of the U.S.—was finally persuaded to accept OPEC's quota system not only by other OPEC members but under pressure from high-cost oil producers elsewhere, in Texas and the North Sea.<sup>28</sup>

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<sup>27</sup> Acemoglu, Johnson and Robinson (2001), pp. 18–19 and 22; citing C. Harvey and S. Lewis Jr., *Policy Choice and Development Performance in Botswana* (London: Macmillan, 1980).

<sup>28</sup> *US Encyclopaedia of Energy – A History of OPEC* (undated), pp. 10 and 19–20.

### 3 New ideas and considerations

The most common techniques of supply management are production quotas, trade quotas and stock manipulation. There have been recent proposals to set each of them up in new ways. The proposals are these:

1. **Production quotas.** In a recent paper, Koning and Robbins proposed a detailed plan to reduce production and thereby raise prices of tropical export crops.<sup>29</sup> They considered that export quotas would not work because of the problems of free-riding and evasion. “Effective supply management requires individual producer quotas,” they argued.<sup>30</sup> Their proposed scheme would be based on a producer-only agreement, and not all producer countries would necessarily have to take part. It would require a powerful international secretariat and the benefits of modern technology, for example in monitoring production by satellite imaging and GIS mapping. Individual farms’ produce would be identified with counterfeit-proof tags requiring personal identification numbers. The secretariat, besides overseeing the quotas, would have its own trading company, which would be granted much greater operating freedom than in the past ICAs, including various types of “market ‘guerrilla’ tactics,” using derivatives and other tools.<sup>31</sup>
2. **Tradable quotas.** For a number of years farmers have been able to buy and sell both the chicken quotas used in Canada and the milk quotas in the EU. This is a revived idea, not a new one: under the 1933 Tea Agreement the planters could buy and sell export quotas. Koning and Robbins would also allow their production quotas to be traded both among individual producers and between producer countries.

The argument is that production would be allocated more efficiently than is possible through multilateral agreement. Koning and Robbins want to encourage the redistribution of quota from high-cost to low-cost producers. As they acknowledge, this would require strict controls to eliminate free-riding and cheating. In a single market with a strong and well-resourced state administration, as in Canada and the EU, this can work reasonably well—although even here, reports of fraud in the use of CAP benefits are commonplace. However, it is not clear how feasible it would be when faced with the administrative weaknesses of many commodity-dependent developing countries.

3. **Manipulate forward and options contracts, not physical stocks.** Buffer stocks are expensive to buy and maintain. Jayant Parimal has proposed eliminating most of these costs by using what he calls “virtual buffer stocks.”<sup>32</sup> In commodities which are served by futures exchanges, the operating authority could buy and sell futures or option contracts in order to keep the price within a predetermined range—as is done with a physical buffer stock but without the need to buy physical product. The down-payment on a futures or option contract (called its “margin” in the trade) is worth a fraction of its final value.

The proposals of both Parimal, and Koning and Robbins would entail a more sophisticated use of the derivatives markets (futures and options trading) than has been the case hitherto. Those markets themselves have become much larger and more sophisticated over the last 20 years. However, it would require highly skilled traders who

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<sup>29</sup> Koning & Robbins (2005).

<sup>30</sup> *Ibid.*, p. 190.

<sup>31</sup> *Ibid.*, p. 189.

<sup>32</sup> Citing Page & Hewitt (2001), p. 23. See Parimal (2006), pp. 30-31.

understand what these complicated markets can do and know where the dangers lie. It would also greatly increase the financial risks. A “virtual” stockpile might not require the same outlay of funds on its purchase, but it could place as much at risk in the event that its managers misread the market. If the owners of the stock were not in a position to cover that risk, it could place them in severe difficulties. Several experienced and reputable companies have been burned on derivatives markets in recent times because their *senior* management did not understand the instruments that were traded, and did not require a trader to cut short an operation which was seriously losing money. Examples were a leading Japanese trading company, Sumitomo, in the New York copper market, and the London merchant bank, Barings, which collapsed after one of its traders in Singapore lost control of his trades in financial derivatives.

## 4 Recommendations

### 4.1 Is market intervention by supply management justified? Is it needed?

Stabilization of commodity prices is needed now as much as ever, while the recovery of prices is needed *more* than ever after the collapse of the last 20 years. While some prices, mainly for industrial commodities such as oil and copper, recovered sharply during the recent boom, those for the export products of most of the poorest countries (such as tropical beverage crops) experienced no more than a routine cyclical upturn from what had been catastrophically low prices.

There is in addition the new problem of buyer-driven supply chains, which force down the producers' and the exporting countries' shares of final retail prices. And other market failures which exist in international commodity markets have not gone away: structural oversupplies; developed countries' subsidies to their farmers; and unequal access to market information.

The basic issue is one of power: who controls the market or supply chain. Over recent decades the control of commodity markets (and with it, the ability to manage supplies) has gradually shifted from the producer to the consumer end of supply chains, and from public to private authorities.

Various policy instruments are required to deal with this problem. Some of them are well beyond the confines of this paper and indeed this project, for example regulations to reduce corporate concentrations on global markets. But as it has been often in past, supply management should be one of the tools in the policy kit.

There are two strategic tasks that supply management can help to deal with. They are:

- to dilute corporate control of supplies on buyer-driven supply chains; and
- to build up the countervailing power of producers and poor producer countries.

One of the ways in which the international community—or more likely, producer countries unilaterally—can do that is by conducting their own supply management. Another way is to build up their domestic economies and regional trade (especially in Africa), in order to reduce dependency on commodity exports to richer countries and thereby their vulnerability to these global markets.

### 4.2 Is supply management feasible?

In principle, it is just as feasible as ever. The techniques are mostly well known. They can work on some markets and in some situations, although not necessarily on others. However, there is no call for a new one-size-fits-all system. Each market is different and the possibilities in each case will vary. One of the problems of the former ICAs lay in their one-size-fits-all nature: every market was addressed by an agreement between all, or as many as possible, of both the producing and the consuming nations, and the methods used were limited to buffer stocks and export quotas to keep prices within a predetermined price band. Yet we have seen that successful supply management, whether led by public or commercial agencies, has taken many different forms, some of them being much more flexible than this.

The lesson from this—as with development strategies more generally—is that the method chosen should be that which is best suited to the situation faced. This does not mean that SM will work on every market; on the other hand, in certain cases it does

not work, that should not be taken to rule out SM in general. The more that the methods and drivers chosen are suited to the market concerned, the more likely they are to succeed. Besides an analysis of each market on its merits, this requires an understanding of what has succeeded (and what has failed) in what circumstances, and why.

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