

**COMMODITY MARKET STABILISATION AND COMMODITY RISK
MANAGEMENT: COULD THE DEMISE OF THE FORMER JUSTIFY THE
LATTER?**

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	INTERNATIONAL COMMODITY AGREEMENTS	2
II.1.	Commodity price stabilisation instruments	2
II.1.1.	Buffer stock stabilisation	3
II.1.2.	Export control stabilisation	4
II.2.	Designs and operations of ICAs.....	5
II.2.1.	Designs and operations of the buffer Stock ICAs.....	6
II.2.2.	Designs and operations of the export control ICAs.....	12
II.3.	The demise of the ICAs.....	15
II.3.1.	Initial poor financing.....	16
II.3.2.	Persistence of commodity shocks	17
II.3.3.	Lack of flexibility in price range	18
II.3.4.	Free rider problems	19
II.3.5.	Lack of compliance.....	20
II.3.6.	Design problem.....	21
II.3.7.	Rent seeking.....	22
III.	COMMODITIES IN NEOLIBERAL MARKETS	23
III.1.	Objectives of commodity market liberalisation.....	23
III.2.	Consequences of commodity market liberalisation	24
IV.	MARKET-BASED COMMODITY PRICE RISK MANAGEMENT	26
IV.1.	Commodity price risk management instruments	26
IV.2.	Markets for risk management instruments.....	30
IV.3.	Benefits of commodity risk management instruments.....	31
IV.4.	Limitations of commodity risk management instruments	31
	CONCLUSION	33

BIBLIOGRAPHY 34

TABLES

Table 1. Comparative features of buffer stock agreements 11
Table 2. Duration of commodity price shocks, January 1957-December 1998..... 18
Table 3. An overview of financial instruments for managing risk 28

EXECUTIVE SUMMARY

A large number of developing countries heavily rely on a narrow range of primary commodities for their export earnings. Heavy dependence on few primary commodities, for which international prices exhibit excessive volatilities, has made these countries vulnerable to macroeconomic instability and income variability. Uncertainties in export and income earnings are nuisance for rational economic planning hence are detrimental to economic development. For these reasons, the stabilisation of commodity prices at a remunerative level through national and international commodity market interventions was envisaged as vital for economic development in commodity dependent developing countries.

As a result the immediate post World War II period saw the establishment of a number of international commodity agreements (ICAs) on the bases of the rules and procedures specified in the Havana Charter. The establishment of the ICAs was accompanied by high expectations and enthusiasm. Nonetheless, in the decades following their establishment the ICAs faced a number of political, economic and technical challenges ranging from the lack of compliance among member states to persistency of commodity shocks, and problems derived from poor financing, design, and operations, and free-riding and rent-seeking activities, which ultimately led to their demise. Currently there is no one ICA which maintains the capability for market intervention.

The demise of the ICAs paved avenues for the Bretton Woods Institutions and other bilateral and multilateral donor agencies, which have opposed market stabilisation policies in developing countries to impose their doctrine that government intervention in the commodities market is inefficient, unsustainable and unviable. Often the process of market liberalisation in developing countries had been enforced under the World Bank and the International Monetary Funds' (IMF) structural adjustment programmes which conditioned bank-lending on commodity market liberalisation. As a result, market intervention institutions such as marketing boards were dismantled without alternative institutions in place for bridging the consequential institutional vacuums. Commodity producers in developing countries have been exposed to the full extent of the vagaries of malfunctioning commodity market forces. Moreover, the abolition of market intervention institutions in developing countries was paradoxically met by increased market interventions in developed countries (notably in agricultural commodities) though high trade barriers and export subsidies.

Commodity market liberalisation in developing countries had two interrelated objectives: increasing the free on board (fob) prices received by farmers/producers; and achieving a higher pass-through of international prices to producers' prices. The reform achieved both of these objectives. However, the rising share of producers' income in the traded commodities has been wiped out by the concomitant secular decline of international commodity prices. Therefore, producers in developing countries have gotten a rising share of a decreasing (non-remunerative) price. As a result commodity producers in developing countries have seen their earnings dwindling day by day. Moreover, excessive price volatility, secularly declining prices and increasing imbalance of power along the value chains of commodities characterises commodities under neo-liberal markets.

As a means of overcoming these caveats of the neo-liberal markets, the Bretton Woods Institutions and governments of developed countries championed market-based risk management instruments such as futures, forwards, options and swaps, as efficient and viable means of insulating producers/farmers from commodity price risks. Since the demise of international commodity agreements, the market-based risk managing instruments have been advocated as 'best alternatives' to market stabilisation policies.

Technically speaking, the market-based risk management instruments are appealing for hedging short term risks. Moreover, their flexibility in pricing and inventory managements (i.e. encouraging private agents to hold stocks) make them advantageous. However, on pragmatic grounds, there are a number limitations associated with market-based risk-hedging instruments. Some of the major limitations are:

- Short term maturities that make the instruments incapable to address problems associated with structural oversupplies of commodities and colossal imbalance of market power among different players along the value chains of commodities.
- While dealing with short term commodity price risks, the market instruments divert attention from the need for controlling the core sources of price instabilities.
- The prices of commodity market instruments such as futures and swaps are only slightly less volatile than the spot prices of commodities
- The risk-hedging instruments cannot bridge the institutional vacuums that have been created by the dismantling of market stabilisation institutions such as marketing boards, as the activities of such institutions comprised the provision of information, extension services, fertilisers and credits.
- Lack of access to credit markets limit the accessibility of internationally traded commodity derivatives for producers in developing countries. This is partly because of the general higher country risk-rating of developing countries, which implies that producers in developing countries have to pay higher risk premiums or provide higher-value collaterals that simply are beyond their ability.
- Commodity derivatives are generally absent in most LDCs; and where they are available their operations are technically complicated; and their operational efficiency is undermined due to lack of regulatory, supervisory and contract enforcement capacities.
- Commodity derivatives are catered to fit the conditions of producers and traders in developed countries and do not generally fit to the circumstances that producers in developing countries face.

Therefore, the advocacy of market-based risk management instruments in the context of neoliberal commodity markets as 'best alternatives' to commodity market stabilisation policies overlooks the less suitability of the instruments to the conditions that producers in developing countries face. Therefore, the commodity risk management instruments could at best be regarded as 'supportive' to appropriate schemes that have yet to come rather than as 'alternatives' to commodity market stabilisation policies.

COMMODITY MARKET STABILISATION AND COMMODITY RISK MANAGEMENT: COULD THE DEMISE OF THE FORMER JUSTIFY THE LATTER?

I. INTRODUCTION

1. A large number of developing countries heavily rely on a narrow range of primary commodities for their export earnings. Similarly, millions of people in developing countries depend on the production of primary commodities as a sole means of income for daily life. Therefore, commodity price instabilities and deteriorations have detrimental welfare impacts for commodity dependent developing countries. Empirical evidences vastly documented that commodity prices in general exhibit excessive fluctuations and secular declines. As a result, stabilisation of commodity markets at remunerative price levels through international commodity agreements (ICAs) was envisaged as crucial for fostering macroeconomic stability and growth. For this reason, the establishment of the Integrated Programme for Commodities (IPC) at UNCTAD IV in Nairobi in 1976 under the auspices of the United Nations and the successful completion of negotiations to establish the Common Fund for Commodities (CFC) in 1980 to finance ICAs for the full extent of their requirements for buffer stock operations marked a new era of optimism.
2. However, the decades that followed the establishment of the IPC programme and the CFC ushered an era of despair and pessimism for primary commodity producing countries. Starting from the collapse of the tin agreement in 1985, market stabilisations through ICAs have been obliterated. The periods followed the demise of the ICAs have been characterised by mistrusts and suspicions of market stabilisation policies; and advocacies for neoliberal commodity markets. Moreover, commodity price risk management instruments have been championed as viable and better alternatives for market stabilisation policies.
3. The objective of this paper is to cautiously analyse whether leaving commodity markets to operate in unfettered fashion while hedging commodity price risks through the use of commodity risk management instruments is a viable and better alternative than market stabilisation policies. The rest of the paper is organised as follows: section II thoroughly analyses the objectives, instruments, designs, operations and the demises of the ICAs. Section III briefly looks into the characteristics of commodities under neoliberal markets with a particular emphasis to the welfare consequences of commodity market liberalisation. Following that, section IV outlines the benefits and limitations of the commodity risk hedging instruments in the context of their suitability and adaptability to the conditions that producers in developing countries encounter.

II. INTERNATIONAL COMMODITY AGREEMENTS

4. The objective of the international commodity agreements was to improve welfare through the stabilisation of revenue at remunerative price levels. The post-world war II ICAs started in 1953 with the establishment of the International Sugar Agreement (ISA) and the International Tin Agreement (ITA) under the auspices of the United Nations. In subsequent years, the International Coffee Agreement (ICoA, 1962), the International Cocoa Agreement (ICCA, 1972) and the International Natural Rubber Agreement (INRA, 1980) came into existence. All of the agreements had “economic clauses”- i.e. explicit economic instruments that allow the authorities of the ICAs to intervene in the market as required.
5. Now, as this study is being conducted, there is no one ICA that maintained the capability of active market intervention. The tin agreement, which along with the sugar agreement was the first to come into existence, collapsed in 1985 after 25 years of successful tin price control. The collapse of the tin agreement was seen as evidence that market control through ICAs cannot work.¹ However, Gilbert (1996) argued that such views are over-simplified and ignores many successful price controls through ICAs such as OPEC and the diamond giant De Beers.
6. Following the collapse of the ITA, the cocoa and coffee agreements lapsed. However, this lapse, unlike the collapse of the tin agreement, was not due to “the tin style collapse, or because prices were held at too high a level, but instead was the result of a lack of willingness of the parties to continue playing the ICA game.”² A worthwhile question at this point is: what caused the lack of the willingness and the loss of ‘faith’ in the ICAs? Before addressing this question and deeply analysing the general reasons behind the collapses and the lapses of the ICAs we will first briefly identify two types of price stabilisation schemes in the trade and development literature. In addition, we will briefly discuss the two common stabilisation instruments (mechanisms), namely: buffer stock management and export control.

II.1. Commodity price stabilisation instruments

7. There are two types of stabilisation policies in the economics literature: the bandwidth rule or price range stabilisation and the price adjustment rule.³ The bandwidth or price range rule, as the name implies, sets specific price ceiling and floor for triggering intervention whenever the price is out of the range. The disadvantage of the price range stabilisation is that it “restricts the price variation to a pre-specified range and does not normally take into account the effects that force the price out of the range.”⁴ In contrast to the bandwidth rule, the price adjustment rule intends to stabilise price on the basis of “a pre-specified long term

¹ E.g. *The Economist*, 2 November 1985.

² Gilbert, 1996:1.

³ Van Groenendaal and Vingerhoets, 1995

⁴ Van Groenendaal and Vingerhoets, 1995 :257.

reference or target price.”⁵ This requires a closer examination and control of the forces that affect long-term commodity prices.

8. Dilemmas in choosing a price target or a ceiling and floor prices for bandwidth stabilisation had been problematic in both the theoretical literature (Gilbert (1996) cited studies by Turnovsky, [1976, 1978]; and Nguyen [1979, 1980] as examples) and on practical grounds as manifested by recurred disagreements among the members of the ICAs. Section 1.3 discusses this with some detail.
9. When first established, almost all of the ICAs had ‘economic clauses’, i.e. economic policy instruments or mechanisms that allowed for active intervention in the commodities market for the stabilisation of prices. Commodity market interventions through ICAs were undertaken through the use of two types of instruments: buffer stock operations and export control schemes.

II.1.1. Buffer stock stabilisation

10. Buffer stock stabilisation refers to commodity market stabilisation through purchasing and storing commodities from the market during periods of oversupply and selling commodities out of storage during periods of shortages. The ICCA and the INRA were buffer stock ICAs, i.e. their stabilisation policies were entirely based on buffer stock operations while the ITA was partially based on a buffer stock stabilisation. Theoretically, stabilisation of markets through buffer stock operations is simple and appealing, as all it requires is identifying a target price or a price range; and purchase (sell) commodities when the market prices of commodities are below (above) the trigger price targets or range. However, practically, a buffer stock stabilisation faces two major problems (Gilbert, 1996). The first problem is that long run price level about which stabilisation should take place may change over time, requiring continuous updating of the stabilisation price range. The second problem is that intervention authorities may lack the resources to keep the price within the range even when an appropriate price range is defined.
11. The long-term sustainable commodity price levels about which stabilisation takes place could change over time because of changes in production costs, technological change (or availability of synthetic substitutes), and changes in consumer demand and taste. Substantial changes in the long-term commodity price levels could put the buffer stock operation into a strain and may entice revisions of the target prices or the price ranges of the ICAs. Obtaining consensus on price revisions is often nontrivial. Rigidity or lack of flexibility for price adjustments was an important factor for the collapse of the ITA.⁶ The inherent dilemma in the buffer stock operation, therefore, is that lack of adjustments could lead to a failure while rapid adjustments that simply track the market prices make the stabilisation schemes inoperational. As Gilbert (1996:9) put it “if a stabilization range is revised to a sufficiently large extent in relation to weak

⁵ Ibid, 1995.

⁶ Gilbert, 1996:8.

market conditions, producing countries will cease to perceive any interest in the so called stabilization exercise.”

12. The second problem is that buffer stock operations can be expensive. This is particularly so, given that commodity prices exhibit long flat bottoms punctuated by occasional sharp peaks.⁷ The long flat bottoms of commodity prices imply that price lows tend to be longer than price peaks compelling the buffer stock manager to buy and hold stocks for protracted periods.⁸ Storing commodities for protracted periods ultimately exhaust available resources thereby jeopardising the buffer stock stabilisation schemes. As we will see shortly, the lack of finance severely handicapped the ICCA and was one of the major causes for the collapse of the ITA.

II.1.2. Export control stabilisation

13. The second stabilisation instrument, export control, was employed in the ISA, the ICoA and the ITA.⁹ The export control stabilisation was “motivated less by any concern for price stabilisation than the hope that it might raise the prices and hence the revenue of [commodity producers].”¹⁰ Thus, the main concern of the ISA, the ICoA and the ITA was that of the level rather than the variability of price.
14. As Gilbert (1996) pointed out export controls are a response to the “burdensome surplus” situations arising from the interactions of investment and stock components of the commodity cycle. A sustained excess of production over consumption causes the burdensome surplus. A number of reasons such as supply rigidity and long ‘investment lead times’ have caused this sustained surplus of production, ultimately resulting in “stock overhang” which has kept commodity prices at lower levels for prolonged periods even when current production and consumption are at balance. Under such circumstances, export controls are seen as useful instruments for raising prices through cutting production.
15. Nonetheless, export control faces three major practical problems (Gilbert, 1996). These are:

Compliance problems

16. Ensuring members’ compliance is the major challenge that cartel-like arrangements with many producers face. All producers know that their collective benefit is higher under cartel-like arrangements, as supply restrictions by all parties increase prices. However, at a higher cartelised price, each individual party

⁷ Deaton and Laroque, 1992.

⁸ Cashin et al (1999) showed that commodity shocks are generally persistent for long periods requiring buffer stock holdings for longer periods, and even permanently for some commodities.

⁹ ITA also employed a small buffer stock for fine tuning interventions. However, was largely based on supply management through export quotas.

¹⁰ Gilbert, 1996:5.

of the cartel has an incentive to renege by increasing its own supply. Moreover, higher prices that result from supply restriction arrangements encourage non-members of the supply restriction agreements and potential producers who are not members to the arrangement to increase their supply thereby jeopardising the sustainability of the supply arrangements. In addition, low cost producers that have capabilities to expand their supply even at low prices tend to have less attachment with the supply management agreements. For example, Brazil, a non-member to the ITA, substantially expanded its tin supply to taking advantage of the higher tin price.¹¹ This had negatively affected the ITA members. Similarly, the ICoA was handicapped by the disinclination of Indonesia, low cost producer, to restrict its supply.¹²

Market distortions

17. Supply controls through quotas distort both the production and consumption structures of commodities. Quotas distort production by restricting supplies from low cost and competitive producers, while the consumption distortions are results of quality or grade distortions. The consumption distortion is particularly higher when consumer preferences shift from one grade to another grade of the commodity in question. For example, as Gilbert (1996) noted consumption distortion was a major problem for the ICoA, where consumer preferences moved from high quality mild arabicas coffees at the expense of robusta and unwashed arabicas; yet the historical quota allocation of the ICoA had not allowed the supply of coffee to adjust in accordance with the change in consumer preferences.

Rent-seeking activities

18. Another major detrimental effect of an export quota is that it creates quota-rent, which stimulates rent-seeking activities. Rent-seeking could be defined as activities intended to obtain value (income) without caring a commensurate cost or burden. Rent-seeking activities always require government involvement through quota allocations; and indeed rent-seeking is all about getting the quota permission. The rent-seeking argument explains that export controls through quotas are inefficient as the potential benefits from export controls would be appropriated by bureaucrats and individuals who have the quota right with little or no benefit transferred to producers/farmers.¹³

II.2. Designs and operations of ICAs

19. The operations of all post World War II ICAs were based on a bandwidth stabilisation mechanism intended to limit the movement of commodity prices within a certain pre-specified price range. Despite this similarity, the ICAs were different in the type of instruments they used in order to meet their objectives. A buffer stock was the stabilisation instrument for the INRA and the ICCA while an

¹¹ Gilbert, 1996.

¹² Ibid, 1996.

¹³ See Jarvis (2003 and 2004) and Bohman et al (1996).

export control arrangement was the instrument for the ICoA and the ISA. The ITA was a hybrid agreement of a buffer stock operation and export control and to some extent futures market instruments. Moreover, each ICA had its own peculiar design, intervention rule and price review mechanism. The post World War II ICAs were established on the basis of the Havana Charter (1947) which specified that ICAs must encompass exporting and importing countries that wanted to join. This section explores the design and operation of the aforementioned five ICAs with some detail.

II.2.1. Designs and operations of the buffer Stock ICAs

20. This section analyses the design and operations of the five ICAs. The first subsection takes a closer look into the designs and operations of the two buffer stock ICAs-the rubber and cocoa agreements- as well the buffer stock instrument of the tin agreement; while the second subsection considers the two export control ICAs-the coffee and sugar agreements - as well as the export control instrument of the tin agreement.

II.2.1.1. The International Rubber Agreement

21. The international rubber agreement (INRA) came into existence in 1980 and subsequently renewed twice in 1979 and 1995. The third rubber agreement (1995) had a total buffer stock capacity of 550,000 tonnes, including the total stock inherited from the second rubber agreement, 1987.¹⁴ The buffer stock was divided into normal buffer stock and contingency buffer stock with a capacity of 400,000 tonnes and 150,000 tonnes respectively. The INRA divided the bandwidth into five ranges. It had a **reference price**; a lower and an upper **intervention price**; a lower and an upper **trigger action price**; and a lower and an upper **indicative price**. The upper and lower intervention prices were respectively at ± 15 percent of the reference price; while the upper trigger and the lower trigger action prices were respectively at ± 20 percent of the reference price.¹⁵ At the time of its entry into force, the third rubber agreement (1995) fixed the lower and the upper indicative prices at 157 and 270 Malaysian/Singapore cents¹⁶ per Kilogramme respectively.

22. The **market indicator price** of the rubber agreement was defined as “a weighted average ... of daily official prices of the Kuala Lumpur, London, New York and Singapore markets converted into f.o.b. Malaysian/Singapore ports in Malaysian/Singapore currency.”¹⁷ Calculation of the market indicator price took account of rubber types or grades. The relative level of the **market indicator price** in comparison to the intervention and **trigger action prices** determined the operations of the Buffer Stock Manager of the INRA. Whenever the **market indicator price** was at or above (below) the upper (lower) **trigger action price**

¹⁴ INRA (1995, Article 26).

¹⁵ INRA (1995, Article 29, paragraphs 3 and 4 respectively).

¹⁶ Malaysian/Singapore cent is defined as the average of the Malaysian sen and the Singapore cent at the prevailing rates of exchange.

¹⁷ INRA (1995, Article 31).

the Buffer Stock Manager “must” sell (buy) natural rubber until the market indicator price falls (exceeds) below (above) the upper (lower) **trigger action price**.¹⁸ Above (below) the upper (lower) **intervention price**, the Buffer Stock Manager “may” sell (buy) natural rubber in defence of the upper (lower) **intervention price**. However, when the **market indicator price** was between the upper and lower intervention prices the Buffer Stock Manager was obligated neither to sell nor to buy natural rubber.

23. The INRA’s contingency buffer stock was meant to be used for defending the lower and upper indicative prices. The Buffer Stock Manager was allowed to bring the contingency buffer stock into operation when the market indicative price was higher or lower than the lower or upper indicative prices by 2 Malaysian/Singapore cents per kilogram of natural rubber.¹⁹ Therefore, in practice, the lower and upper indicative prices defined the maximum possible price range for the natural rubber agreement and as such the total facilities of the buffer stock were to be utilized to ensure that the market price was contained between the upper and lower indicative prices.
24. The natural rubber agreement had an automatic reference price review mechanism which was based on market trends. For the purposes of the review, a six month average of the daily market indicator prices was calculated every 12 months and compared with the two intervention prices. The reference price was automatically revised upwards (downwards) by 5 percent when the average of the six month daily market indicator prices was above (below) the upper (lower) intervention price.²⁰ Moreover, the natural rubber agreement allowed revisions of the indicative prices on the bases of evolving market trends and conditions.²¹

II.2.1.2. The International Cocoa Agreement

25. The international cocoa agreement was the second ICA that relied on a buffer stock instrument for stabilising the prices of cocoa beans. When first established in 1972, the principal aim of the ICCA was to stabilise the price of cocoa on the basis of an agreed price range. This objective was envisaged to be achieved through the use of export quota schemes and buffer stock instruments. The buffer stock had a maximum capacity of 250,000 tonnes of cocoa beans and was designed to absorb over quota production of cocoas. In the first three years covered by the first Agreement and the four years of the second Agreement no cocoa beans were purchased for the buffer stock because the market prices were

¹⁸ Pursuant to Article 32(3) of the INRA 1995, the market indicator price is said to be above, at or below price levels when the average of the daily market prices for the last five market days is above, at or below such price levels.

¹⁹ INRA (1995, Article 30)

²⁰ Additionally, the natural rubber agreement allowed the reference price to be raised or lowered by 4 percent whenever the net buffer stock purchases or sales of 300,000 tonnes took place. However, under no circumstances, the review of the reference price was to lead to the breaching of the indicative price by the trigger action price.

²¹ The review mechanism for the indicative prices is specified in section B of Article 31 of the INRA, 1995.

above the agreement range.²² Subsequently, the 1980 cocoa agreement abandoned the quota system and limited price regulations to only to buffer stock instruments. The 1986 agreement was the last international cocoa agreement concluded before the lapse of the economic clause of the cocoa agreement in 1988 and as such deems a closer look in this study.

26. The 1986 international cocoa agreement established a price range for stabilisation with lower and upper intervention prices of SDR²³ 1160 and SDR 2270 respectively. The 1986 cocoa agreement withdrew the minimum and maximum prices that existed in the 1980 agreement and converted the monetary unit of the intervention prices from US ¢/lb to SDR. Moreover, the 1986 agreement introduced 'may sell/buy prices' respectively at 2215 SDR and 1655 SDR. Similar to the rubber agreement, the 'trigger' may sell/buy prices of the cocoa agreement were within the ceiling and floor prices. Moreover, the agreement established an indicator price which was defined as the average of the daily prices over a period of ten consecutive market days. For the purpose of calculating the indicator prices, the daily market prices were defined as the average of the daily price quotations for cocoa beans of the nearest three active trading months on the New York Cocoa Exchange at noon and on the London Cocoa Terminal Market at closing time. The Agreement specified that in the calculation of the daily price, the London prices were to be converted from US ¢/lb to SDR at the appropriate daily official United States dollar/SDR exchange rate published by the International Monetary Fund
27. The buffer stock instrument of the 1986 cocoa agreement had a capacity of 250,000 tonnes of cocoa bean. Whenever, the indicator price was at or below the lower intervention price, the Buffer Stock Manager 'must' purchase cocoa until the indicator price was above the lower intervention price.²⁴ Similarly, when the indicator price was at or above the upper intervention price, the Buffer Stock Manager 'must' sell cocoa at the prevailing market prices until the indicator prices fell below the upper intervention price. Similar to the natural rubber agreement, the 1986 cocoa agreement had given the Buffer Stock Manager a margin for discretion by defining a may buy/price margins. For this purpose the agreement provided that the Buffer Stock Manager 'may' buy (sell) cocoa in defence of the lower (upper) intervention price, whenever the indicator price is at or below (above) the may-buy (may -sell) price but above (below) the lower (upper) intervention price. Unlike the rubber agreement, however, the cocoa agreement had no automatic review mechanism for the price range and reference price.

II.2.1.3. The International Tin Agreement

28. The third commodity agreement that we analyse is the sixth international tin agreement that came into force in 1982. The tin agreement was a hybrid agreement that used both buffer stock and export management instruments for the

²² Statement by the International Cocoa Organization, available at <http://www.icco.org/buffer.htm>.

²³ The Special Drawing Right (SDR) is an international reserve asset that is based on a basket of key international currencies to serve as a unit of account of the IMF and some other international organizations.

²⁴ According to Article 36(6) of the ICCO, the Buffer Stock Manager was allowed to purchase only cocoa of recognized standard marketable grades in quantities not less than 100 tonnes.

purpose of stabilising tin prices. The agreement designed a bandwidth with the ceiling price being 130 percent of (i.e. 30 percent higher than) the floor price expressed in Malaysian ringgit²⁵. The bandwidth was divided into three equal sectors.

29. If the market price of tin in recognised markets²⁶ was at or above the ceiling price, the buffer stock manager ‘must’ sell tin at the prevailing market price on the recognized markets until the price of tin fell below the ceiling price or the tin at his disposal was exhausted. Similarly, when the price of the market price of tin was at or below the price floor, the buffer stock manager ‘must’ buy tin on the recognised markets at the prevailing market price until the market price exceeded the ceiling price. Similar to the rubber agreement and unlike the cocoa agreement, the tin agreement had a ‘may’ buy/sell margin. When the market price of tin was in the top (lower) sector of the range between the floor and ceiling prices, the buffer stock manager ‘may’ sell (buy) tin. However, if the market price of tin was in the middle sector of the price range between the floor and the ceiling, the manager was allowed neither to buy nor to sell tin.²⁷
30. The buffer stock operation of the tin agreement was different from the other two buffer stock agreements (rubber and cocoa) in four important ways. First, unlike the two buffer stock agreements in which intervention in the market was triggered on the basis of indicator prices (i.e. average or sequence of daily prices), intervention in the tin market was triggered on the basis of a single daily price. Second, the ‘must’ buy/sell prices of the cocoa and rubber agreements were within the ceiling-floor price range, whereas the tin agreement does not distinguish the ‘must’ buy/sell prices from the price floor and ceiling. Third, unlike the rubber and cocoa agreement which allows the purchase and sell of buffers in both the origin (directly from producers) and second hand markets (from commodity dealers), the tin agreement restricted the purchase and sell of tin to ‘designated’ terminal markets. Four, unlike the other two buffer stock agreements, the tin agreement allowed the buffer stock manager to engage in forward transactions.

II.2.1.4. Comparison of the buffer stock agreements

31. In comparison to the rubber and cocoa agreements, the buffer stock operation of the tin agreement was simpler because of two reasons. First, the buffer stock operation of the tin agreement was triggered on the basis of a single daily market price rather than an indicative price. Gilbert (1987) pointed out that operation on the basis of a single market price is simpler as all that the Buffer Stock Manager needs to do is to buy or sell until the market price is within the required range. In contrast, operation on the basis of an indicative price is complex as a particular purchase or sell in a particular time at a particular market does not necessarily bring the indicator price back into the desired price range. This, according to

²⁵ Or other currency if so decided by the council.

²⁶ According to paragraph 4 of Article 28 of the International Tin Agreement, the recognized markets are the “Penang Straits Tin Market, the London Metal Exchange, and/or other market which may from time to time be recognized by the council of the operation of the buffer stock.”

²⁷ However, the buffer stock manager was allowed to buy and sell if he was authorized by a two-third distributed majority of the council.

Gilbert (1987), was the rationale for having an outer ceiling and floor for the cocoa and rubber agreement and not for the tin agreement. The second reason for the simplicity of the buffer stock operation of tin was that purchasing from and selling in organised designated terminal markets is easier than purchasing from and selling to producers in the origin market.

32. In analysing the buffer stock operation of the three ICAs (rubber, cocoa and tin), Gilbert (1987) raised the fundamental question whether the intervention criterion should be defined on the basis of a single market price of a particular market or on the basis of an average of the prices of different grades of a commodity on a number of markets. The question is tantamount to whether a single price captures the clear free market price of the concerned commodity. If a free market price exists and can be detected then it is desirable to design the intervention clauses directly in terms of such a price. However, if such price does not exist or is difficult to detect then it is sapient to design the intervention clause in terms of an indicative price, based on a weighted average of prices of different markets.
33. As already mentioned above, the Malaysian dollar price of a high grade tin on the Penang (subsequently Kuala Lumpur) market was the basis for intervention in the tin market. Gilbert (1987) argued that for the tin market the London Metal Exchange cash price for a standard grade tin was effectively the world market and that it was rationale to intervene to stabilise this price. If this argument was correct, then the intervention rule of the sixth (1982) tin agreement that was defined on the basis of the cash price of a high grade (instead of a standard grade) tin at the Penang and later at Kuala Lumpur markets was unsound. The cocoa and the rubber agreements used indicative prices for guiding the intervention in the respective markets. For cocoa the use of an indicative market price, which is computed as average market prices of London and New York near future prices for the nearest three active trading months, was sensible since nearby prices were more important than cash prices in determining prices in off-market trades (Gilbert, 1987).
34. Table 1 shows that of the three agreements the tin agreement had the narrowest width of stabilisation. The effective stabilisation width, measured as the gap between the upper and lower trigger prices, was $\pm 15\%$ for tin, $\pm 23.1\%$ for cocoa and $\pm 28.6\%$ for rubber. An important issue in connection to the width of stabilisation is how it affects the capacity and sustainability of the stabilisation scheme. Simple intuition shows that a narrow stabilisation width compels the buffer stock manager to intervene more frequently than he would otherwise; and frequent intervention is costly. Moreover, a narrow width discourages private sector stocks as a narrow gap between the upper and lower trigger prices means little prospects of profit for private speculators. In such cases the Buffer Stock Manager will be compelled to carry the bulk of excess supplies for defending its lower trigger price. Thus, narrow stabilisation widths would pave ways for exhaustion of resources for the buffer stock operations thereby jeopardising the sustainability of the buffer schemes. In contrast, a wider width of stabilisation means higher price volatility. The fundamental challenge in this respect is thus

designing stabilisation widths in a manner that reasonably stabilise prices without jeopardising the financial sustainability of the stabilisation schemes.²⁸

Table 1. Comparative features of buffer stock agreements

	Cocoa**	Rubber	Tin
<i>Price range</i>			
Indicator/market	Indicator	Indicator	Both; buffer stock uses market price
Currency	US\$	Malaysian/Singapore \$	Malaysian ringgit (M\$)
Initial reference price	130c/lb	(MS\$) 210Sc/kg	M\$33.50/Kg (\$6.25/lb)
Ceiling/floor	± 23.1%	(45,6c/lb)	± 15%
Upper/lower trigger (BSM must-sell/buy)	± 18.2%	± 28.6%	± 15%
Non-intervention range		± 20%	
Average trigger	± 18.2%		± 5%
	5 days	± 15%	no
		5 days (max/min)	
<i>Buffer Stock</i>			
Max size (000 tonnes)	250	400	63.4 (20 financed by borrowing)
% of 1980-83 average consumption	16.0%	(+150 contingency)	30.7%
value at lower trigger price (\$m)	606	14.6%	569
stock at end of 1995 (000 tonnes)	100	553	52.5
Max stock to date (000 tonnes)	100	375	57.4 (Sept 1983)*
Cash/futures	Cash	375	both
End 1985 net forward position (000 tonnes)	--	Cash	54.6
		--	
<i>Price range update provisions</i>	Annual		not specified
Frequency	Yes	18 month intervals	Yes; no formula
Special criteria	Yes	Yes	No
Price level	No	Yes	Yes; no formula
Buffer stock	No	Yes in relation to	No
Exchange rates		MS\$	
Inflation		No	

* The ITC buffer stock figures include 23,700 tonnes carried over from the fifth ITA.

** relate to the third ICCA. The initial reference price in the fourth ICCA is 103c/lb.

Source: Gilbert, 1987

²⁸ Citing Bhaskar *et al* (1978) and Ghosh *et al* (1987), Gilbert (1987:595) pinpointed that: "Econometric studies indicate that it is counterproductive to narrow the band beneath around $\pm 10\%$ (i.e., the ceiling and floor respectively 10%) above and below the central price)."

II.2.2. Designs and operations of the export control ICAs

II.2.2.1. The International Coffee Agreement

35. The first coffee agreement was put into force in 1962 and subsequently extended 3 times until it lapsed in 1989 at the expiry of the fourth agreement. Until its lapse in 1989, the international coffee agreement used export quota as the sole instrument for the stabilisation of the world coffee market. The agreement divided the world coffee market into member quota and non-member non-quota markets.²⁹ Each exporting member country was entitled to a basic quota. The basic quota of each exporting country was a certain percentage of a global annual coffee export that the country was entitled to export at regulated prices.
36. The international coffee council had been mandated to set the global annual quota taking into account the annual consumption by importing members; imports of members from other members and non-members, estimated change of inventories in importing members and in free ports; and other agreed factors.³⁰ The global annual quota had two parts: a fixed part and a variable part. The fixed part corresponded to 70 percent of the global annual quota while the variable part corresponded to 30 percent of the global annual quota.
37. The fixed part of the global annual quota was allocated to exporting countries in accordance with their respective basic quota. In contrast, the variable quota was allocated among exporting members of the ICoA on the basis of the ratio of verified coffee stock of each exporting member to the total verified coffee stock of all exporting members. No one country was, however, allowed to obtain more than 40 percent of the variable quota.
38. The operation of the quota system was based on an indicative price which in turn was based on a daily composite indicator price. The quotas remained in effect whenever the fifteen day moving average of the composite indicator price was at or below a designated upper trigger price; and were suspended when the indicator price remained 3.5 percent higher than the designated upper trigger price for at least 30 consecutive days.³¹ When quotas remained suspended for more than 12 months then the council was obligated to review the price range. Quotas were reintroduced when the 15 day moving average price was somewhere near the lower trigger price.

II.2.2.2. The International Sugar Agreement

39. The second agreement which, like the ICoA, operated entirely through controlling export was the international sugar agreement. The first ISA came into existence in

²⁹ The Non-member non-quota refers to the fact that the quota limits did not apply to exports from members to non-members.

³⁰ The International Coffee Agreement (1983, Article 34).

³¹ The suspension of quotas was subject to a requirement that all upward adjustment of quotas had been applied; otherwise the suspension would be after 45 days rather than 30 days (ICoC, 1981, Article 32, para. 8).

1953 and extended as the second ISA in 1958 with virtually no change. The third ISA came into existence in 1968, five years after the expiry of the second agreement in 1958. Similarly, four years after the expiry of the third agreement, the fourth ISA was agreed in 1977 and expired in 1983. Attempts to establish the fifth agreement in 1983 and 1984 did not materialise.

40. Similar to the coffee agreement, the export control system of the sugar agreement operated through establishing and allocating a global quota. The global quota was calculated by estimating the so-called net import requirement of the free market less the sum of the expected volume of exports to the free market by members; the expected volume of preferential sugar export; and the expected volume of export by non-members. The global quota or adjustments thereof was allocated to members according to their basic export tonnage, which was a fixed export quota of sugar allocated to each exporting country.³²
41. As in the coffee agreement, intervention in the sugar market was guided by an indicator price. The ISA envisaged keeping the free market price of sugar within a range of 11 to 21 cents per pound. Nonetheless, the price margin between 15 cents per pound and 11.5 per cent per pound were the trigger action prices in terms of inducing a reduction or an increase in the global quota. When the prevailing price, having been at a higher level, fell below 13 ¢/lb the global quota was reduced by 5 per cent and each subsequent fall to below 12 cents per pound and below 11.5 cents per pound induced a 5 percent reduction in the global quota. Similarly, having been at a lower level, when the prevailing price of sugar rose above 13 cents per pound the global quota was raised by 5 per cent. Subsequent rises to above 14 cents per pound and 14.5 cents per pound each used triggered a 5 per cent increase in the global quota. The price range between 14 and 15 cents per pound of sugar was a “may suspend” price range within which the council had discretion to suspend the global sugar quota; while price levels above 15 per cent are “must suspend” levels that obligated the suspension of the global quota. Correspondingly, when the price level fell to between 15 cents per pound and 14 cents per pound, the council had the discretion to reintroduce the global quota; while the council must introduce the quota and all other export restrictions when the prevailing price falls below 14 cents per pound.

II.2.2.3. The International Tin Agreement

42. The third agreement that used export control instrument for price stabilisation was the tin agreement. As already mentioned, the tin agreement was a hybrid of buffer stock and export control instruments.³³ Under the tin agreement, export control was triggered when the 70 per cent of the maximum value of the buffer stock was held in tin metal.³⁴

³² The basic export tonnages were subject to renegotiation in accordance with the procedure and conditions specified in Article 34, Paragraph 2 of the ISA, 1977.

³³ The export control period corresponds to quarters and was not to be longer than five months or shorter than two months (ITA, 1982, Article 33(1)).

³⁴ Provided that two-thirds distributed majority (which was attained when the motion is supported by both a two-thirds majority of the Producing Members and a two-thirds majority of the Consuming

43. In operating the export control system, the tin agreement envisaged the establishment of a total permissible export tonnage for producing members for the duration of the control period.³⁵ The total permissible export tonnage was allocated among members in proportion to their production or export figures for the last four quarters which preceded the control period.³⁶
44. The operation of the export control of tin was guided on the basis of the 15-day moving average of tin prices in Penang Straits Tin Market. The permissible export tonnage was increased, if the 15-day moving average price was at or above the upper limit of the lower sector of the price range for 12 consecutive market days.³⁷ The control period was lifted only when the ITA council so decided; and that a fall of the buffer stock holding below the minimum tonnage of tin metal that triggered the export control period was not a reason by itself for the suspension of the control period.

II.2.2.4. Compliance Enforcement Mechanisms

45. The basic design of the three export control agreements was similar in that they aimed to equilibrate demand and supply through imposing limits on export volumes. The quota systems of the three agreements were based on estimations of global net exports of the respective commodities and were allocated in accordance with predefined guidelines. Stabilisations of prices through the use of export control instruments are similar to cartel-like arrangements and, as such, designing mechanisms that ensure members' compliance through detection and punishment of non-compliances were critical and vital for the efficacy and continuity of the stabilisation arrangements.
46. Under the coffee agreement, any member that exported in excess of its quota limit was subjected to a reduction of one or more years of subsequent quotas by 110 percent of the excess amount. Non-compliance for the second and third times were subjected to the same percentage reductions of quotas and led to the suspension of the voting right of the violating member. Moreover, the quota amount reduced from the violating member was redistributed to the non-violating members. However, no clear guidelines were provided for the purpose of this redistribution.
47. The compliance enforcement mechanism of the sugar agreement was more complicated than the coffee agreement. The sugar agreement considered that net

Members) was obtained; otherwise the export control was triggered when 80 percent of the maximum value of the buffer was in tin.

³⁵ In estimating the total permissible export tonnage accounts of estimations of production and consumption; quantity of tin metals and cash held in the buffer stock; the quantity, availability and probable trend of other stocks of tin; the trade in tin and the current price of tin metal; and any other relevant factors were taken into consideration.

³⁶ The control period was not to be declared in priori.

³⁷ The permissible tonnage was to increase to either 110 percent of that of the control period or to a level of exports calculated on the basis of the quarterly average level of exports during the last four consecutive quarters which preceded the control period and which were not declared control period; whichever is bigger (ITA, 1982, Article 32, paragraph 8(a & b)).

exports were in excess of the effective quota or the export entitlement of a member only when the excess was more than 10,000 tonnes or 5 per cent of the basic export tonnage or entitlement (whichever was less).³⁸ Thus, the sugar agreement gave some margin of flexibility when compared to the coffee agreement. When a member failed to comply with the export quota limit, the member's export quota was subjected to a deduction by the same amount of the excess export for each of the subsequent two quota years.³⁹

48. Similarly, the tin agreement had provisions for penalties relating to non-compliance to the export control scheme.⁴⁰ The tin agreement had two non-compliance punishment mechanisms: one was based on the excess export above the permissible export tonnage on a particular control period; and the other was on the basis of excess export tonnage over a four year aggregate permissible export tonnages. In the first case, if the net tin export of a producing member exceeded 5 percent of its permissible export tonnage for a particular control period, the member was made to contribute to the buffer stock in amount not exceeding to the excess export.⁴¹ In the second case, if the combined exports of a member in four control periods exceed its aggregate permissible export tonnage by more than 1 per cent, the permissible export tonnage of the member for each of the four subsequent control periods was reduced by one-quarter to one-half of the over-exported aggregate tonnage.⁴²

II.3. The demise of the ICAs

49. In the previous section we described the designs and operations of the five international commodities: two buffer stock ICAs, two export control ICAs and one hybrid ICA. Following that, this section analyses the reasons for the demise of these agreements with particular emphasis on whether their design or peculiar way of operation contributed in anyway to their demise. It is worthwhile to note from the outset that some ICAs managed to survive for relatively long periods, while others came to an end relatively quickly. This section attempts to flesh out what caused the demise of the international commodity agreements and why.
50. The heydays of the international commodity agreements came to an end with the collapse of the sixth tin agreement in 24 October 1985, when Pieter de Koning, the Buffer Stock Manager of the international tin council (ITC) announced that he had insufficient funds to honour his contract.⁴³ The collapse of the tin agreement, which came as a surprise for many agents that had been involved in the tin market,

³⁸ If at the time when a reduction in quota was implemented, a member had already exported in excess of the new quota limit, the excess will not be considered a breach of the agreement provided that the member's exports at the end of the relevant quota year were below the amount of the prior commitment.

³⁹ The council, by a special vote, could decide a lesser deduction for the second quota year (ISA, 1978; Article 45, paragraph 5).

⁴⁰ ITA (1982, Article 36).

⁴¹ If the contribution was made in tin metals, it was to be valued at the floor price in effect.

⁴² The council decides the ratio of the deduction.

⁴³ McFadden, 1986.

ushered in a new era of mistrust and repugnance towards the viability and reliability of international commodity agreements as mechanisms for stabilising commodity markets. The collapse of the tin agreement triggered the lapse of the fourth coffee⁴⁴ and the fourth cocoa⁴⁵ agreements. The lapses of these agreements were simply because of lack of willingness among the parties to continue the ICA game; and unlike the tin agreement, the lapses were not for financial reasons (Gilbert, 1996). In this context this section intends to address two questions worthwhile asking: how and why did the tin agreement find itself in such a huge financial crisis that made it unable to defend the ceiling price any more; and what led to the unwillingness of the parties to extend and maintain the coffee and cocoa agreements. Moreover, due emphasis is given to the collapses of the international sugar and international rubber agreements.

II.3.1. Initial poor financing

51. The main reason for the collapse of the tin agreement was the depletion of the cash reserves of the buffer stock. At the time of its collapse, the ITA had not only gone out of cash but also borrowed bank loans amounting to £900 million for financing futures purchases through brokers.⁴⁶ The cash problem of the sixth ITA had partly stemmed from the little cash contributions made at the outset of its establishment. The refusal of the USA, which was a member of the fifth ITA, to join the sixth ITA limited the cash contributions made to only £43.5 million - equivalent to about 6,000 tonnes of tin.⁴⁷ This being the amount of cash that the sixth ITA had in the outset, it inherited 49,000 tonnes of tin metal from the fifth agreement.⁴⁸ Therefore, as Anderson and Gilbert (1988:6) noted the sixth ITA came into being with “a large quantity of metal but with very little cash.” The implication of having too much metals and too little money was that the ITA was well prepared to defend the ceiling price, but poorly prepared to defend the floor price.
52. Similarly the 1980 and 1986 cocoa agreement was chronically “under funded” because of the rejection of the US (the largest cocoa consumer) and Ivory Coast (the larger cocoa exporter) to join the agreement.⁴⁹ Therefore, the 4th ICCA entered into force with a buffer stock of 250,000 tons, which was the equivalent of around six weeks consumption. Taking account of the 100,000 tons of cocoa buffer inherited from the 3rd ICCA, the 4th ICCA had only to accumulate 150,000 tons. On the other hand, production of cocoa doubled from 650,000 in 1986/87 to 1,376,000 tons in 1991/92, thereby rendering the agreement powerless to impact cocoa price significantly.⁵⁰

⁴⁴ The fourth coffee agreement came into force in 1983 and was lapsed in 1989 when negotiations to extend the agreement failed to materialize.

⁴⁵ The fourth cocoa agreement came into force in 1986 and lapsed in 1988.

⁴⁶ Ibid, 1986.

⁴⁷ But as Anderson and Gilbert (1998:9) pointed out the initial contribution was augmented by producer contributions of £24 million.

⁴⁸ Anderson, R. and Gilbert, C. (1988:6).

⁴⁹ Gilbert, 1996:6-7.

⁵⁰ Gilbert, 1996:7.

53. In addition to the initial poor financing, what other factors contributed to the financial diminution of the commodity agreements?

II.3.2. Persistence of commodity shocks

54. Apart from the outset poor finance of the commodity agreements, the inherent nature of commodity markets might have contributed to the financial weakness of the agreements. As Cashin et al. (1999) noted the financial viability of price stabilisation schemes to a large extent depend on the duration of time that it takes for a shock to a commodity price to reverse itself. Price stabilisation schemes are based on the assumption that a commodity shock is temporary and will reverse itself in the short run. However, in their study of the durations of time that takes commodity shocks to dissipate, Cashin et al (1999) found that commodity shocks are long-lived in general; thus price stabilisation schemes in general face huge financial debacles. The result from Cashin et al's (1999) analyses is shown below.
55. Table 2 shows that shocks in commodities such as tin, cocoa beans, and robusta coffee are permanent. Moreover, it takes between 96 to 216 months (8 -18 years) for half of a shock in commodities such as mild coffee and sugar (in the world market) to last while the half-life span of shocks in rubber is found to be 43 months. This result implies that price stabilisation schemes, particularly defending higher price ranges, are costly for tin, cocoa beans and robusta coffee, mild coffee and sugar but not as much for rubber. A permanent persistence of shocks to cocoa bean and tin metals means that if the free market prices of these commodities fall below the floor prices of their respective stabilisation range, the buffer stock managers of the respective agreements would be compelled to constantly intervene in the market through permanent purchases of buffers stocks. Since the shocks are permanent or at least last long, the buffer stock purchases would ultimately deplete the financial resources of the agreements, unless the price ranges are substantially reviewed downwards.⁵¹ Seen in this context, the financial depletions of most of the international commodity agreements could somehow be linked to the persistence of commodity shocks.

⁵¹ This, however, is dilemmatic; because frequent downward revisions of prices in line with market price trends undermine the usefulness of the price scheme itself.

Table 2. Duration of commodity price shocks, January 1957-December 1998

Less than 12 months		12 to 48 months		48 to 96 months		96 to 216 months		Permanent
Bananas	2, (2-3)	Aluminum	29, (15-∞)	Beef	57, (20-∞)	Coffee (other milds)	150, (26-∞)	Cocoa beans
Heating oil	8, (4-∞)	Fishmeal	45, (18-∞)	Coconut oil	70, (22-∞)	Cotton	152, (26-∞)	Coffee (robusta)
Hides	11, (7-23)	Gasoline	44, (8-∞)	Copper	81, (23-∞)	Nickel	175, (26-∞)	Gold
Softwood (logs)	11, (5-∞)	Iron ore	32, (15-∞)	Groundnut oil	58, (20-∞)	Sugar (free market)	116, (25-∞)	Hardwood (logs)
Softwood (sawn wood)	8, (4-∞)	Lamb	14, (9-39)	Lead	64, (21-∞)	Rice	103, (24-∞)	Natural gas
Sugar (EU)	7, (5-10)	Rubber	43, (18-∞)	Maize	55, (20-∞)			Petroleum
Tea	10, (7-21)	Soybean meal	26, (14-∞)	Palm oil	64, (21-∞)			Hardwood (sawn wood)
		Soybean	30, (15-∞)	Phosphate rock	49, (19-∞)			Tin
		Sugar (U.S.)	27, (14-∞)	Soybean oil	51, (19-∞)			Tobacco
		Wheat	44, (18-∞)	Wool (coarse)	70, (22-∞)			Triple superphosphate
				Wool (fine)	57, (20-∞)			
				Zinc	94, (24-∞)			

Source: Cashin et al, 1999

II.3.3. Lack of flexibility in price range

56. Besides the persistence of commodity shocks, however, the way the ICAs operated had played a major role in their financial debacle. In this respect the tin agreement stands out. The price range of the tin agreement was denominated in Malaysian ringgit which was fixed against the US dollar. The dollar substantially appreciated in the early 1980s. The fixed ringgit-dollar exchange rate meant that the appreciation of the dollar was transmitted to the ringgit and thereby made the ringgit denominated stabilisation price of the international tin agreement uncompetitive, without any structural movement in demand and supply. As a result from an arrangement for maintaining competitive tin prices, the tin agreement “degenerated into an arrangement for the defence of a non-competitive price floor.”⁵² In such circumstances the right thing to do was either to use a composite currency for the denomination of the price range or to review down the price range substantially. However, the tin agreement lacked the flexibility and sensitivity for adjusting to market forces to set appropriate prices; hence had to purchase enormous amount of buffer stocks in order to keep the price within the agreed range until it could no longer sustain the buffer stock operation. At the time of its collapse, the ITC tin stockpile including physically held metal and contracts for future delivery amounted over 100,000 tonnes, equivalent to six months’ world consumption.⁵³

57. Unlike the tin agreement, the cocoa agreement was more flexible because it adopted a semiautomatic mechanism for a downward revision⁵⁴ of the lower and upper intervention prices after purchases of 75,000 tonnes of cocoa. Since the 4th agreement had a net buffer stock size limit of 150,000 tonnes of cocoa (after taking account of the 100,000 tonnes it inherited from the third cocoa agreement) the price was supposed to be reviewed down twice upon the purchase of the buffer

⁵² Anderson and Gilbert, 1988:11.

⁵³ McFadden, 1986:812-813.

⁵⁴ According to Gilbert (1996), semi-automatic revision mechanism refers to the opportunity of the council to agree to a downward revision of specified size in the absence of an agreement by members.

stock. The first downward revision was made in January 1988 after a purchase of 75,000 tonnes of cocoa.⁵⁵ However, the impact of the revision was undermined by the appreciation of the US dollar in which the price range was denominated. By the time the remaining 75,000 tonnes of the buffer stock were purchased in February 1998, the buffer stock was exhausted; and yet the excess supply of coffee in the market was tremendously large.⁵⁶ This discouraged the member countries from extending the economic clauses of the agreement.

II.3.4. Free rider problems

58. Free riding in the context of international commodity agreement can be defined as activities for taking more than fair shares of the benefits (usually) without shouldering fair shares of the costs of a stabilisation scheme. Free riding is a major enforcement problem facing all cartel-like arrangements. As mentioned above the coffee, sugar and tin agreements were cartel-like arrangements that opted to raise prices through export control schemes. The usefulness, hence the viability and sustainability of a cartel arrangement to its members is highly determined by its ability to deter free riding. Apparently, the easiest and most effective way of dealing with free-rider problems is by persuading or coercing free-riders to join the cartel arrangement and abide by its rules or by forcing them out of their business through a punishment mechanism.⁵⁷
59. The sixth tin agreement was a victim of free-riding. Export controls were in effect from 1982-1985. At the time of its collapse, the tin agreement allowed exporter members to export as little as 60 percent of their previous level.⁵⁸ However, the export restriction was proved to be futile due to free riders. As McFadden (1986) pointed out the greatest benefit of the export restriction was taken by non-member countries. For example, Brazil a non-member of the ITA increased its production of tin from 9,300 tons in 1982 to 19,000 tons in 1984. Similarly, China, a non-member to the ITA, doubled its production during the same period from 3,300 tones to 6,000; while Peru, another non-member, more than quadrupled production from 700 tones per year to 3,000 tones. In addition to this, tin smuggling had played a role in weakening the efficacy of the export control. McFadden (1986:827) mentioned that “16,550 tons of tin, nearly 10 percent of world consumption, were smuggled into Singapore.”
60. A similar, although not identical problem of non-compliance affected the operation of the coffee agreement. Importing member countries of the coffee agreement questioned the fact that exports to their markets were more expensive – sometimes by 50 per cent – than exports to non-member countries.⁵⁹ The free riding of non-members exporters was one major problem and source of incompliance in the coffee agreement. Despite a resolution to penalise cheaper

⁵⁵ Gilbert, 1996: 8.

⁵⁶ Ibid. 1996:8.

⁵⁷ The diamond giant De Beers is a good example in this case.

⁵⁸ McFadden, 1986 :825

⁵⁹ Raffaelli, 1995:69-69.

coffee exports to non-members, the practice of free-riding continued undeterred by the threat.⁶⁰

II.3.5. Lack of compliance

61. Lack of compliance was a cross-cutting problem that impaired all of the ICAs. To begin with, producer and consumer countries had different interests. Producer countries wanted remunerative and stable prices for their exports, while consumer countries preferred stable and lower prices. With these conflicting interests, it is not usually easy to reach an agreement regarding the stabilisation price. Even more problematic was reaching to a consensus for downward or upward revisions of prices in line with market forces. This was clearly reflected in the third rubber agreement. The INRA had an automatic price revision mechanism that gave it enough flexibility for adjusting the stabilisation price whenever market forces compelled so. However, activating this mechanism in practice was not always an easy matter. For example in November 1992, a downward price revision was triggered. At the time the daily market indicative price (DMIP) was 175.95 Malaysian/Singapore ¢/Kg while the lower intervention price (LIP) was 176 Malaysian/Singapore ¢/Kg.⁶¹ According to the agreement, whenever the DMIP is beneath the LIP the stabilisation price had to be revised down by 5 per cents. However, in this particular case a dispute was triggered because producers resisted the downward revision of price by arguing for the use of a rounded rather than unrounded price for comparing the DMIP with the LIP.⁶² Despite INRO's practice of deciding on the basis of two decimal places, the agreement was silent on the matter of rounding. Because of this incidence the INRA was in limbo until February 1994 without having a stabilisation range.
62. In addition the 4th rubber agreement collapsed in 1999 following the withdrawal of Malaysia, Thailand and Sri Lanka. The three countries decided to withdraw from the agreement when their request to increase the reference price by 5 percent in order to deal with the East Asian currency crisis of the 1997 was rejected by importing members of the agreement.
63. The lack of compliance problem was even more serious in the coffee and sugar agreements, the two export control stabilisation agreements. Disagreements on the allocation of global quotas of export among producing countries was the main source of incompliance in these two agreements. This however does not necessarily reflect design or operational faults, but rather was an inherent problem of a quota based stabilisation scheme.
64. In the case of coffee, the problem in the allocation of quota was exacerbated by a shift of consumers' preferences from robustas (produced in Brazil, Indonesia and Africa) and unwashed arabicas (produced in Brazil) to high quality arabica beans –also called Colombian “milds” (produced by Colombia, Kenya and Tanzania)

⁶⁰ Ibid, 1995:69.

⁶¹ Gilbert, 1996:14.

⁶² Ibid. 1996:14.

and “other milds” (mainly produced in central America). This shift of consumer preferences in the face of unchanging or only slightly changing quota allocation led to a higher premium for the mild arabicas over robustas.⁶³ This phenomenon led to a dispute among producers where the mild arabicas producers insisted for a higher quota. Moreover, consumer countries were disappointed by the lack of flexibility in the quota allocation system in order to accommodate changes in consumer preferences. Gilbert (1996) noted that the market distortion effect of the quota became evident when the premium of the mild arabicas over robustas fell from 42 per cent to just 6 per cent during the suspension of the quota between February and March 1986.⁶⁴

65. Non-compliance was also a major problem in the sugar agreement. In 1962 Cuba, after being denied market access in the US, sought a very substantial increase of quota which other producers were unwilling to concede. This ultimately led to the suspension of the 2nd ISA in the same year. However, the most devastating blow to the sugar agreement came during the 4th agreement when the European Union under the Common Agricultural Policy (CAP) moved from a net importer of sugar to the single largest net exporter in the world.⁶⁵ Moreover, the USA started supporting domestic sugar production behind a tough quota regime. In addition, the EU resisted joining the 4th sugar agreement “arguing disingenuously for a buffer stock agreement.”⁶⁶ These brought to the demise of the economic clause of the agreement.

II.3.6. Design problem

66. The international sugar, coffee and tin agreements were among other things victims of poor design. The sugar agreement was designed on a residual market. This means that the global quotas were estimated after taking account of the preferential exports of sugar to developed countries’ markets from their former colonies under GSP schemes. Moreover, the heavy protection of sugar in EU and US reduced the size of the free market for sugar thereby marginalising the quantity of sugar that fell under the scope of the sugar agreement. Moreover, both the sugar and the coffee agreements lacked specificity with respect to the determination of quotas, although in practice, they used past export performances to establish quotas.
67. The tin agreement was poorly drafted. First, the stabilisation band of the agreement was narrowly defined (see table 1). This might have forced the tin Buffer Stock Manager to excessively intervene in the market to keep the tin price within the predefined margin. This excessive intervention coupled with the higher and uncompetitive price that the tin agreement defended, might have played a significant role in plunging the agreement into culmination.

⁶³ The mild arabicas producers perceived the quota allocation as pro-Brazilian.

⁶⁴ Drought conditions in Brazil during 1985-1986 coffee year triggered the quota suspension.

⁶⁵ Gilbert, 1996.

⁶⁶ Ibid, 1996.

68. Second, the tin agreement failed to specify a limit on the extent of the Buffer Stock Manager's leverage in the futures market. Third, the ITA's operation was designed on the basis of a single currency, Malaysian ringgit, rather than a composite of currencies or Special Drawing Rights (SDR).⁶⁷ This made the agreement vulnerable to ringgit dollar exchange rate movements. As we discussed above, the direct appreciation of the US dollar in the early 1980s was transmitted to the Malaysian ringgit, which was fixed against the dollar. This made the price range of the tin agreement uncompetitive and ultimately led to the collapse of the agreement.

II.3.7. Rent seeking

69. As we already mentioned, one of the limitations of export control stabilisation schemes is the creation of rent seeking behaviour. Rent seeking activity is inherent to quota arrangements. As public choice theory suggests, quotas create a potential for profit which in turn provides incentives for rent-seeking activities. Rents are usually sought by agents who are small in number, organized and have the political and economic connection to lobby successfully. Often, though not always, rent seekers are intermediary agencies such as exporters and foreign importers rather than farmers and producers.⁶⁸

70. The international coffee agreement determined a global export quota which was then allocated to exporting members according to the procedures specified in the agreement.⁶⁹ Each exporting country in turn allocated its national quota to domestic exporters through certain criteria. Often the quota right was given to few exporters thereby granting them the right to buy coffees from producers for the purpose of exportation. The domestic quota rent, therefore, bestowed oligopsony and oligopoly powers to the domestic exporters that obtained the quota rent as they were the only ones with a legitimate right to sell the commodity abroad hence to buy it from the domestic growers. According to Jarvis (2003 and 2004), Bohman et al (1996) and a number of other researchers, domestic producers were worse-off because of the export control scheme that forced them to cut their production in a situation where large share of the price increase in the international market was appropriated by export quota rent holders. Studies by Bohman et al (1996) and Jarvis (2004) showed that rent-seeking activities eroded potential gains that could have been achieved from the ICA. Moreover, Jarvis (2004) has documented that because of corruption in the quota allocation system in some countries, foreign roasters (importers) of coffee received a higher share of the rents.

⁶⁷ The SDR is an international reserve asset that is based on a basket of key international currencies to serve as a unit of account of the IMF and some other international organizations.

⁶⁸ See, Jarvis (2003, 2004) for detailed analyses of how local exporters, bureaucrats, and foreign importers manage to secure sizable quota rents for coffee export.

⁶⁹ See section II.2.2.2 of this study for a brief discussion of the procedures.

III. COMMODITIES IN NEOLIBERAL MARKETS

71. Since the early 1980s, most developing countries have encountered increasing pressures from the Bretton Woods Institutions and other bilateral and multilateral donor agencies to liberalise their respective domestic markets. The failure of the international commodity agreements in the 1980s and early 1990s paved avenues for the Bretton Woods Institutions and the donors to impose the doctrine that government intervention in commodity markets is inefficient, unsustainable and unviable. Often, the process of market reform in most developing countries had been reinforced and even coerced under the World Bank and the IMF structural adjustment programme which conditioned bank lending on commodity market liberalisation.
72. Market reform or liberalisation of the commodities market refers to taking measures that reduce government involvement in marketing and production of commodities and increasing reliance on market forces to direct production, marketing and investment decisions. More formally, liberalisation of the commodities market can be defined as steps taken towards opening domestic and export markets by putting in place public and private institutions consistent with and supportive of private markets.⁷⁰ The reform thus involved the dismantling of market intervention institutions and instruments such as marketing and export boards and export taxes; introduction of competition in marketing; elimination of administered prices; and privatisation of state owned assets.⁷¹

III.1. Objectives of commodity market liberalisation

73. Gilbert and Wengel (2003) Gilbert and Varangis et al (2002) and Akamaya et al (2003) have well documented the processes and welfare effects of commodity market reforms in Africa. The reforms had the following two interrelated objectives:
74. *Efficiency gains*: It was noted that market interventions are costly and unsustainable and are often victims of bureaucracy and interest group politics. Often market controls through export tax and quota create wedges between domestic and international prices leading to rent-seeking behaviours and other economic wastes-so called dead-weight losses. It was so hoped that market liberalisation reduces the dead-weight losses and increases production and marketing efficiency by aligning domestic and international prices.
75. *Increasing the income share of producers*: Liberalisation of domestic markets through reducing or banning export taxes and reducing the premium between the purchasing and exporting prices of the domestic marketing and exporting monopsonists and other private export quota rent holders was hoped to increase

⁷⁰ Gilbert and Varangis, 2003.

⁷¹ Ibid, 2003:2.

the FOB (free on board)⁷² prices received by producers. To put it simply, liberalisation of domestic markets was envisaged as a means to provide a higher pass-through of international prices to producer prices.⁷³ This particular objective of the market reform programme has been overemphasised by the World Bank and had been set as its maxim under the 'getting price right' slogan.⁷⁴

III.2. Consequences of commodity market liberalisation

76. The consequences of the commodities market liberalisation are vastly documented in the trade and development literature. The reduction of governments' roles in commodity markets of developing countries through the weakening and dismantling of interventionary institutions have exposed producers to the vagaries of malfunctioning market forces. The economic theory provides unambiguous justification for government intervention in markets characterised by market failures. The commodities market is characterised by a multilayered failures of market ranging from excessive fluctuations of price, demand and supply rigidities and unbalanced concentration of market power.⁷⁵ Therefore, the dismantling of the institutions and instruments of market intervention without putting in place alternative mechanisms to counteract the negative welfare effects of market failures created an institutional vacuum that cannot be bridged by malfunctioning market forces.⁷⁶

77. Akiyama et al (2003) found that the liberalisation of the commodities market benefited producers through a higher share of the traded value of their commodities. However, Gilbert and Varangis (2003) noted that the producers' rising share in the traded value of the commodities has been wiped out by the resultant secular decline of international commodity prices. Therefore, producers in developing countries have gotten a rising share of a decreasing price. Two concepts can be noted here: First, the rise in producers' share of the price simply implies a transfer of income from governments (which for example would have been collected as tax) to producers; so have no net social welfare impacts. However, the decline of the export prices of the commodities implies a transfer of income from developing country producers and governments to processors, distributors and consumers in developed countries.

78. This raises a doubt as to the genuineness of the stated objectives of the commodity liberalisation programme which was vehemently supported and even coerced by governments in developed countries and the Bretton Woods Institutions. The irony, however, is that while the developing countries were made to succumb to market liberalisation, developed countries bolstered their intervention in their

⁷² FOB price refers to the cost of an export good at the exit point in the exporting country loaded in the ship or other means of transport in which it will be carried to the importing country. It is equal to the CIF (Cost, Insurance and Freight) price at the port of destination minus the cost of international freight and insurance and the unloading onto the dock.

⁷³ Gilbert and Varangis, 2003.

⁷⁴ See Lines, 2004.

⁷⁵ See Lines (2004) for a concise discussion on this.

⁷⁶ This sparks the question as to whether the appropriate policy approach in the commodities market should be optimising government intervention rather than reducing it through market liberalisation.

respective domestic agricultural markets through farm support policies. Gilbert and Varangis (2003:3) characterised this as ‘hypocrisy’. Moreover, the elimination of minimum export prices,⁷⁷ export taxes, export boards and other market intervention institutions in developing countries on products on which they have market power has accelerated the paces of the decline of international commodity prices. This is often advantageous to consuming countries as it translates to an improvement in their terms of trade. Given that developing countries are net exporters of primary commodities while developed countries are large consumers of commodities, the fall of commodity prices has positive welfare effects for developed countries. Thus, the developed countries and the Bretton Woods Institutions are “guilty of pursuing self-interested policies in developing countries.”⁷⁸

79. The secular declines of the international prices of primary commodities have not come as a surprise. Half a century ago two pioneering economists Prebisch (1950) and Singer (1950) hypothesised the deteriorating trend of commodity terms of trade relative to that of merchandise goods. However, the extent and magnitude of the post-liberalisation crises of commodities and the paces of the price deteriorations perhaps were not anticipated.

80. The liberalisation of the commodities market in developing countries ushered in two new developments that have negative ramifications for commodity prices. The first was tremendous increases of the supply of commodities in the international market while the second was increases in concentration of market powers in the hands of few global parastatals. The former was partially ascribed to ill-advised policies that strategise export promotion and higher integration into the world trade as key for fostering development. The resultant outcome of the policies has been a fallacy of composition, a situation where increased supply of commodities in the international market simultaneously by a large number of developing countries induced structural oversupplies and ultimately pushed down prices for the commodities. This has particularly been the case for most tropical commodities such as coffee and cocoa. The concentration of power in the global parastatals was a result of mergers and acquisitions; and development of widespread franchises in supermarket chains which were mainly driven by economies of scale. Several studies showed that the global parastatals exercised monopsony powers to squeeze down prices received by small scale and highly dispersed commodity producers in developing countries; while at the same time exercised monopoly power to make lucrative profits from consumers in developed countries.⁷⁹ Moreover, the liberalisation of the commodities market exposed producers to the full effect of the volatility of international prices.

81. In a nutshell, excessive volatility of commodity prices, low level of prices and declining producers’ share in the value chains characterise the post-liberalisation primary commodity markets. A detailed and thorough analyses of these problems are well documented in ul Haque (2004), Oxfam (2002) and

⁷⁷ As was the case for export of coffee in Brazil

⁷⁸ Gilbert and Varangis, 2003:3.

⁷⁹ See Oxfam, 2002.

Gilbert and Wengel (2003) to mention a few; hence are not repeated in this paper. Rather, the following section of this study analyses the market based risk hedging instruments which the Bretton Woods Institutions and governments of developed countries announce as viable and better ‘alternatives’ to national and international regulations of commodity markets.⁸⁰

IV. MARKET-BASED COMMODITY PRICE RISK MANAGEMENT

82. Since the demise of the international commodity agreements and the limited success of large scale international financial schemes such as the International Monetary Fund’s Compensatory Finance and the European Union’s STABEX programme, the use of market-based commodity price risk management instruments has been forcefully advocated. The most common market instrument is futures but other instruments such as forwards, swaps and options are also widely used.

IV.1. Commodity price risk management instruments

83. Commodity price risk management instruments, also called commodity derivative instruments, are financial innovations that are intended to reduce risks from price uncertainties. Unlike market stabilisation instruments that intend to reduce commodity price volatilities, the commodity derivative instruments intend to reduce or manage the risks that producers and consumers face without attempting to reduce the variability of actual commodity prices. In short, stabilisation is about managing commodity markets whereas commodity derivative instruments are about managing risks.⁸¹ Stabilisation schemes, whether national or international, transfer risks from producers and consumers to governments, while through the use of market-based commodity derivatives risks are reallocated among private traders.⁸²

84. The degree of commodity risk that producers and consumers face depends on the extent of the volatility of the commodity they respectively produce and consume; and the degree of their dependence on the commodity for revenue and consumption respectively. Producers and consumers that highly depend on commodities which exhibit high volatility face a higher risk of price and income uncertainty, while producers and consumers that rely less on commodities with high price volatilities face a lower risk. In general most primary commodities exhibit higher volatility.⁸³ However, the degree of reliance for production and consumption by producers and consumers in developing and developed countries is highly asymmetrical. Producers and consumers of commodities in developing

⁸⁰ See World Bank, 1994:4.

⁸¹ See Varangis et al (2002) for a detailed discussion of managing markets vs. managing risks.

⁸² Page and Hewitt, 2001:27.

⁸³ Deaton and Laroque, 1992.

countries heavily rely on narrow ranges of commodities, often with minimal, if any, support from their governments to counteract commodity price risks. On the other hand governments of developed countries insulate producers of commodities in their respective countries through countercyclical payments and other means of subsidies. Therefore, producers in developing countries face higher risk meriting more use of risk management instruments. Nonetheless, the use of these instruments in developing countries is severely limited for reasons that are briefly sketched out in section IV.4.

85. In general commodity derivative instruments can be classified into two:⁸⁴
86. Contracts where the principal or interest payments, or both, are indexed on a commodity price. Instruments such as futures, forwards, swaps, long-term contracts, and commodity indexed bonds fall under such contracts.
87. Contracts that give the holder the right-but not the obligation-to buy or sell a commodity at a particular price. Instruments such as call options, put options, warrants, and swaptions fall under this contracts.

An overview of these instruments is shown in table 3 below.

⁸⁴ Page and Hewitt, 2001: 27.

Table 3. An overview of financial instruments for managing risk

Instruments	Description	Advantages and Limitations
10 Financial instruments in general	11 Financial instruments in general	
Forward	<ul style="list-style-type: none"> • An agreement to purchase or sell a given asset at a future date at a preset price. • Transactions are made mostly through brokers by phone and telex. • A typical use is for locking in a future price • Contracts are available primarily for short-term maturities (up to one year). 	<ul style="list-style-type: none"> • No cash transfer is needed at the beginning. Cash transfer occurs only at maturity • Credit risk is involved. • Tailor made contracts are available for specific hedging needs.
Futures	<ul style="list-style-type: none"> • An agreement to purchase or sell a given asset at a future date at a preset time • Transactions are made in formal exchanges through clearinghouse systems. • Contract terms (amounts, grades, delivery dates, and so on) are highly standardized. • Profit and losses are settled daily, requiring daily cash flow. • Margin (collateral) money is required at the beginning. • A typical use is for locking in a future price. • Contracts are available primarily for short-term maturities (up to one year). 	<ul style="list-style-type: none"> • Initial cash transfer is required for margin money. • Daily cash transfers are necessary. • Credit risk is minimal • Tailor-made contracts are not available. • Markets are more active than forward markets for some contracts. • An original position can be closed or reversed easily and quickly.
Option	<ul style="list-style-type: none"> • The right to purchase or sell a certain asset at a preset price on (or before) a specified date. • Transactions are made both through brokers by phone and telex and in formal exchanges. • A typical use is for setting a ceiling or floor for prices • Contracts are available primarily for short-term maturities (up to one year). 	<ul style="list-style-type: none"> • A buyer of an option contract can limit the maximum loss but keep open the opportunity to take advantage of favourable price movements. • A buyer has to pay a premium (cost of option) up front. • A buyer faces a seller's credit risk. (A buyer has the right; seller has the obligation). • Tailor-made contracts are available for specific hedging needs.

Instruments	Description	Advantages and limitations
Swap	<ul style="list-style-type: none"> • An agreement to exchange specified cash flows at fixed intervals. • A series of forward contracts lined up on a schedule. • Transactions are made through brokers by phone and telex. • A typical use is for locking in future prices for a long period. • Contracts are available for medium and long-term maturities (one to ten years). <p>Commodity -linked instruments</p>	<ul style="list-style-type: none"> • No cash transfer is needed at the beginning. • Credit risk is involved. • Tailor-made contracts are available for specific hedging needs.
Commodity Swap	<ul style="list-style-type: none"> • A swap contract on a certain commodity. An agreement to pay, at fixed intervals, a fixed amount of cash in exchange for a variable amount of cash or vice versa. The variable amount of cash is determined by the market price for a set quantity of a commodity. • Contracts are provided by international banks. • A typical use is for locking in a price of a commodity for the medium term and long term. 	<ul style="list-style-type: none"> • No deliveries of physical commodities are involved. Transactions are purely financial. like the other swap contracts (see above for characteristics of swap contracts in general). • The markets are not very active.
Commodity linked loan	<ul style="list-style-type: none"> • A loan in which interest or repayment amount or both are linked to the market price of a certain commodity. • A loan can be viewed as a combination of a conventional fixed rate loan and a commodity swap contract. • These loans are provided by international banks. 	<ul style="list-style-type: none"> • A loan can be regarded as effectively denominated in a commodity. • If used by a commodity producer, the credit risk of the loan is lower than that of a conventional loan. A producer can repay the loan even if the price of the commodity falls significantly.
Commodity-linked bond	<ul style="list-style-type: none"> • (Forward type) A bond in which coupons or principal or both are linked to the market price of a certain commodity. • (Option type) A bond to which the right to buy or sell a certain commodity at a preset price is attached. • There bonds are underwritten by international banks. • The bonds have been issued primarily on gold and oil. Some are available for silver, copper and nickel. 	<ul style="list-style-type: none"> • (Forward type) Advantages and limitations are similar to those of commodity linked loans. • (Option type) This type is often useful for commodity producers, to reduce the cost of financing.

Source: Toshiya Masuoka, cited in Page and Hewitt, 2001:28-29.

IV.2. Markets for risk management instruments

88. Commodity risk management instruments could be standardised or tailor-made.⁸⁵ The standardised instruments are usually traded in commodity exchange markets whereas the tailor-made contracts are traded over the counter (OTC) directly between two market participants. Commodity contracts are agreements specifying the quality of the commodity, the volume, the agreed price, delivery times and procedures. Trading in commodity exchange markets is relatively easy, faster and cheaper than trading in the OTC market. This is because trading in the commodity exchange markets is done through intermediaries-so called traders-without a need for the hedging parties to interact and negotiate a contract as the market itself has a standardised contract.⁸⁶ On the other hand, contract specifications in the OTC markets are not standardised; hence have to be directly negotiated between two market participants and are tailored to suit the particular requirements of the two parties for a specified period of time. Unlike the exchange market which is heavily regulated by governments, the OTC market is unregulated. As a result participation is often limited to large companies and banks that do not need the same level of protection as small-scale participants on commodity exchanges.⁸⁷
89. Price formation in exchange markets is transparent and often the types of contracts traded and the prices are published; and the clearing house guarantees the fulfilment of contracts.⁸⁸ In contrast, pricing in OTC markets are non-transparent and prices are the outcome of direct negotiations. There are two risks involved in trading in OTC market: a counterpart risk, i.e. as the OTC market does not provide guarantee for the fulfilment of contracts in cases of a counterpart to an OTC contract reneges on his obligation; and risk of asymmetric information and negotiation power, i.e. the contract could be asymmetrically tailored to the benefit of the party with better information and higher negotiation power. Instruments available in the exchange market are usually for internationally traded commodities (i.e. highly tradable commodities) such as coffee, cocoa, copper, cotton, petroleum and metals, while many commodities of importance for developing countries which are regarded as less tradable (i.e. their production is mainly for domestic consumption) such as wood, cobalt and coal are not traded in the exchange markets. This is because prices of the latter commodities are often considered as non-market based because of a higher incidence of government intervention.⁸⁹ Therefore, derivatives for these commodities are available only in the OTC markets.

⁸⁵ UNCTAD, 1998:7.

⁸⁶ Ibid, 1998:7.

⁸⁷ Ibid, 1998:7.

⁸⁸ Ibid, 1998:7.

⁸⁹ Larson et al, 998:16.

IV.3. Benefits of commodity risk management instruments

90. Commodity derivatives intend to manage risks associated with the volatility of commodity prices without disrupting the free operation of market forces. According to a report by the World Bank (1994:4) commodity derivative instruments "... despite their limitations, offer a promising alternative to traditional stabilisation schemes." This is argued to be the case because of a belief that allowing markets to operate in unfettered fashion encourages greater efficiency and growth.⁹⁰ Since the futures market is the most widely used and 'the most organized, centralized and standardized',⁹¹ our consideration is limited to it.
91. Quoting Thompson (1985), Morgan (2000) outlined that futures provide benefits in four ways by providing:
92. *Anticipatory Hedging*: By allowing producers to lock in future prices received for their commodities. A futures market provides stability of income, hence rational planning of production.
93. *Flexibility in pricing*: Unlike ICAs where only one price range can be offered, the futures market offers a range of prices for each commodity, allowing a greater deal of flexibility in pricing for individual trader. According to Gilbert (1986) this allows each producer and consumer to adopt a forwards position that is optimal for its particular circumstances.
94. *Inventory Management*: The price spread between futures contract and spot price, so called the basis, measures the storage and interest cost of a spot trader for holding stocks now for sale in the future. The higher the basis, the higher is the incentive for the spot trader to hold more stocks. Thus, negotiations in the futures contract encourage private storage of commodities; in essence allowing for smoother pattern of prices in the spot market hence reducing price volatility.
95. *Price support*: In the futures market, groups of individual producers can be represented by an agent who trades on their behalf. In doing so, the producers' increase their negotiation power and secure a minimum price than would have been possible when they negotiate on individual basis

IV.4. Limitations of commodity risk management instruments

96. Technically speaking, the market-based risk management instruments are appealing for hedging risks. However, on a pragmatic ground, there are a number limitations

⁹⁰ Morgan, 2000:5.

⁹¹ Ibid, 2000:6.

associated with market-based risk-hedging instruments. Some of the major limitations are:

97. Commodity derivatives have short-term maturities implying that the instruments are suitable only for hedging short-term risks.⁹² The risks that producers of developing countries face are not limited only to short-term price volatilities but also to long term price declines that are caused by structural oversupplies of commodities. Moreover, the derivatives are absolutely not able to address the commodities challenges that are concomitant to colossal market power imbalances among different players in the value chains of commodity markets.
98. Commodity derivatives are not capable of mitigating the causes of commodity price volatility but only intend to manage risks linked to the volatility. Thus, in practice, the derivatives shift attention to managing short-term risks rather than controlling the core sources of the commodity problems.
99. Futures prices themselves are only slightly less volatile than spot prices.⁹³ This is to say that the maturity of futures is usually one production period, i.e. the period for one production cycle, and futures prices in intra production periods are almost as volatile as spot prices. This is because, in every successive futures agreement agents adjust their speculations on the bases of spot price movements.
100. Risk-hedging instruments could not bridge the institutional vacuum created by the dismantling of national institutions such as marketing boards as the activities of such institutions comprised the provision of information, extension services, fertilizers and credits.
101. Producers in developing countries are designated as more risky.⁹⁴ Hence in order to get access to commodity instruments in international markets they need to pay a higher risk premium or are asked for higher-value collaterals which simply are beyond their ability. Moreover lack of access to credit markets limit the accessibility of internationally traded commodity derivatives for producers in developing countries.⁹⁵
102. Commodity derivatives are generally absent in most LDCs; and where they are available their operational efficiency is highly undermined due to the lack of regulatory, supervisory and contract reinforcement capacities (Haque, 2004b). Moreover, the operations of the financial derivatives are technically too complicated for producers in developing countries to comprehend. In short, as Haque (2004a:26) put it:

⁹² Usually three months for agricultural commodity and up to three years for minerals such as copper and aluminium (WT/COMTD/W/124).

⁹³ UNCTAD, 2003.

⁹⁴ This is mainly because of the general high country-risk-ratings of developing countries.

⁹⁵ Gilbert, 1986:655.

“... Adequate regulation and supervision of options trading as well as high personal integrity of professionals engaged in trading would be crucial if the farmers are to be protected against mismanagement or fraud. These are governance requirements that seem to go beyond the skills required to successfully manage a state marketing authority.”

103. Commodity derivatives in international markets are catered to fit the conditions of producers and traders in developed countries and do not generally fit to the circumstances that producers in developing countries face. For example, the availability of risk-hedging instruments in commodity exchange markets is limited to internationally traded commodities whereas commodities that are mostly traded in the domestic markets of developing countries fall out of the scope of the commodity derivatives.

V. CONCLUSION

104. Commodity price volatilities and ensuing market uncertainties are nuisance for rational economic planning. Therefore, stabilisations of commodity markets are fundamental for improving welfare and economic growth in commodity dependent developing countries. However, the collapse and lapse of the international commodity agreements (ICAs) clearly marked that market stabilisations through government interventions are not easily doable. This is partly because of prolonged persistency of commodity shocks that obliged the ICAs to hold buffer stocks for long periods of time and even permanently in some cases. Holding or storing stocks for long periods of time depleted the financial viability of the buffer stock ICAs and had greatly contributed to their demise. Similarly, lack of compliances; poor design and operation; free-rider problems and other related problems played significant roles for the collapse of the commodity stabilisation programmes.

105. Following their demise, the international commodity agreements were superseded by an era of neoliberal markets where governments' involvement in commodity markets were reduced through the dismantling of national marketing boards and other market regulatory institutions in developing countries. The commodity market liberalisation in developing countries was hypocritically met by increased market intervention (most notably in agriculture) in developed countries. This era marked periods of high volatility; sharp and secular decline of international commodity prices; and increased concentration of market power on the hands of few parastatals. Moreover, increased advocacy for commodity price risk management instruments in a context of neoliberal markets have been championed as 'best alternatives' to commodity market stabilisation policies. However, this argument overlooks the fact that the instruments are less suitable to the conditions that producers in developing countries face. Therefore, the commodity risk management instruments could at best be regarded as 'supportive' to appropriate schemes that have yet to come rather than as 'alternatives' to commodity market stabilisation policies.

BIBLIOGRAPHY

- Akiyama, T., Baffes, J., Larson, D. F., and P. Varangis. (2003). "Commodity Market Reform in Africa: Some Recent Experience", World Bank, Policy Research Working Paper 2995.
- Anderson, R. W. and C. L. Gilbert. (1988). "Commodity Agreements and Commodity Markets: Lessons from Tin", *The Economic Journal*, 98:1-5.
- Bohman, M., Jarvis, L., and R. Barichello. (1996). "Rent Seeking and International Commodity Agreements: The Case of Coffee", *Economic Development and Cultural Change*, 44(2): 379-402.
- Cashin, P., Liang, H., and J. McDermott. (1999). "Do Commodity Price Shocks Last Too Long for Stabilization Schemes to Work?", *Finance and Development*, September 1999. Available at <http://www.imf.org/external/pubs/ft/fandd/1999/09/pdf/cashin.pdf> last accessed 15 October 2004.
- Deaton, A. and G. Laroque. (1992). "On the Behaviour of commodity Prices", *The Review of Economic Studies*, 59(1):1-23.
- Gilbert, C. L. (1985). "Futures Trading and the Welfare Evaluation of Commodity Price Stabilisation", *The Economic Journal*, 95: 637-661.
- Gilbert, C. L. (1986). "Commodity Price Stabilization: the Massell Model and Multiplicative Disturbances", *The Quarterly Journal of Economics*, 101(3): 635-640.
- Gilbert, C. L. (1987). "International Commodity Agreements: Design and Performance", *World Development*, 15: 591-616.
- Gilbert, C. L. (1996). "International Commodity Agreements: An Obituary Notice", *World Development*, 24(1):1-19.
- Gilbert, C. L. and P. Varangis. (2003). "Globalization and International Commodity Trade with Specific Reference to the West African Cocoa Producers", National Bureau of Economic Research, Working paper 9668.
- Gilbert, C. L. and J. Wengel. (2000). "Commodity Production and Marketing in a Competitive World", Paper Presented for Common Fund for Commodities (CFC) for presentation at a joint CFN-UNCTAD panel discussion, 13 February.
- Jarvis, L. S. (2003). "How Brazil Transferred Billions to Foreign Coffee Importers: the International Coffee Agreement, Rent Seeking and Export Tax Rebates", Department of Agricultural and Resource Economics, University of California Davis, Working Paper No. 03-002.
- Jarvis, L. S. (2004). "The Rise and Decline of Rent-Seeking Activity in the Brazilian Coffee Sector: Lessons from the Imposition and Removal of Coffee Export Quotas", Department of Agricultural and Resource Economics, University of California Davis, Working Paper No. 04-004.
- Koning, N. (2004). "Fair Trade in Tropical Crops Is Possible: International Commodity Agreements Revisited", North-South Centre, discussion paper no. 3.
- Larson, D. F., Varangis, P., and N. Yabuki. (1998). "Commodity Risk Management and Development", Paper Prepared for the Roundtable Discussion on New

- Approaches to Commodity Price Risk Management in Developing Countries, Washington DC, April 28.
- Lines, T. (2004). "Commodities Trade, Poverty Alleviation and Sustainable Development: the Re-emerging Debate", Paper presented on the occasion of UNCTAD XI, Sao Paulo, Brazil. June 15.
- McFadden, E. (1986). "The Collapse of Tin: Restructuring a Failed Commodity Agreement", *The American Journal of International Law*, 80: 811-829.
- Morgan, C. W. (2000). "Commodity Futures Markets in LDCs: A Review and Prospects", Centre for Research in Economic Development and International Trade. Research Paper No. 00/10, University of Nottingham.
- Oxfam. (2002). "Mugged: Poverty in Your Coffee Cup", Available on line at <http://www.maketrade-fair.com/assets/english/CoffeeSummary.pdf> last accessed 22 October 2004.
- Page, S. and A. Hewitt. (2001). "World Commodity Prices: Still a Problem for Developing Countries?", London: Overseas Development Institute.
- Prebisch, R. (1950). "The Economic Development of Latin America and Its Principal Problems", New York: United Nations.
- Raffaelli, M. (1995). "Rise and Demise of Commodity Agreements", Cambridge: Woodhead Publishing Limited.
- Singer, H. (1950). "The Distribution of Gains between Investing and Borrowing Countries", *American Economic Review*, 40: 473-85.
- ul Haque, I. (2004). "Commodities Under Neoliberalism: The Case of Cocoa", UNCTAD, G-24 Discussion paper series. Available at http://www.unctad.org/en/docs/gdsmdpbg2420041_en.pdf last accessed 19 October 2004.
- UNCTAD. (2003). "Economic Development in Africa: Trade Performance and Commodity Dependence", United Nations, Geneva.
- UNCTAD. (1998). "A Survey of Commodity Risk Management Instruments", Report by UNCTAD Secretariat, UNCTAD/COM/15/Rev.2.
- Van Groenendaal, W. J. H. and J. W. A. Vingerhoets. (1995). "Can International Commodity Agreements Work?", *Journal of Policy Modelling*, 17(3):257-278.
- Varangis, P., Larson, D., and J. Anderson. (2002). "Agricultural Markets and Risks: Management of the Latter, Not the Former", World Bank, *Working Paper* No. 2793.
- World Bank. (1999). "Dealing with Commodity Price Volatility in Developing Countries: A Proposal for a Market-Based Approach", International Task Force on Commodity Management in Developing Countries. *Discussion Paper* (September), Washington D.C.



Chemin du Champ d'Anier 17
Case postale 228, 1211 Geneva 19
Switzerland

Telephone : (41 22) 791 8050
Fax : (41 22) 798 8531
Email : south@southcentre.org

Website:
<http://www.southcentre.org>