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by

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Centre for Research in Economic Development and International Trade, University of Nottingham

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Abstract
Recent moves by the World Bank to devise market-based approaches for dealing with commodity price risk provides a fresh impetus for research in the area of commodity futures markets as a policy option. Since the collapse of the International Commodity Agreements, there has been little progress in finding a solution to the perennial problem of price risk arising from price volatility. This paper aims to provide a background to the more general issue of development and growth in less developed countries (LDCs) by examining past and current policy attempts to reduce the effects of price volatility in primary commodity markets.

Outline

1. INTRODUCTION

In the summer of 1999, the World Bank established a task force to examine the nature of price risk in internationally traded commodity markets (World Bank, 1999). Its remit was to explore market-based solutions that might help reduce the risks currently facing commodity producers in the main exporting less developed countries (LDCs). Given commodity prices are generally volatile, producers in poorer countries face individual price and possibly income risk, while the country as a whole might face export earnings risk, which in turn might affect growth. One possible solution offered has been to encourage the establishment and use of commodity futures markets as a mechanism for spreading these risks. This case has been advanced more forcefully since the demise of aggregate intervention policies such as the International Commodity Agreements (ICAs) (Gilbert, 1996) and the failure of large-scale international financing schemes such as the International Monetary Fund's Compensatory Finance Fund and the European Union's STABEX programme. These schemes are outside the remit of the current paper but a full discussion of both can be found in Herrmann et al (1993).

Price volatility is perhaps the most pressing issue facing producers of primary commodities. While these producers are not exclusively in LDCs (see Sapsford and Morgan, 1994) the impact of volatility on producers there is much greater than it is for those in developed market economies (DMEs). Of particular relevance here is the degree to which some nations rely very heavily on one or two commodities for their export earnings, a position that leaves their macroeconomic finances very vulnerable to any shocks in the prices of commodities. To illustrate this point, 23 LDCs have 90% or more of their merchandise exports accounted for by commodities, where many of these countries are defined as being heavily indebted. Indeed, the five largest producing countries, which include India, China and Brazil, account for more than 75% of total global output of cocoa, tea, rice, groundnut oil, palm oil, rubber and tin. (World Bank, 1999, p 1). These larger countries are at least able to produce a range of commodities, a position that is not open to all producing countries. There are a number of countries that rely very heavily on one or two commodities for their export earnings, such as Uganda (coffee), Ghana (cocoa) and Bolivia (copper). This contrasts with only three OECD countries that rely on commodity exports for more than 50% of their merchandise exports (Norway, New Zealand and Australia). Thus, while commodity market problems are not

exclusively LDC problems, they are more likely to have a major impact here than in DMEs.

In particular, given that the demand for many of these primary commodities is price inelastic and also given the large potential for shocks in supply especially in soft commodities, then there is clearly a very great price and quantity risk for producer nations. Trying to deal with this volatility has been at the centre of commodity policy since the 1930s (see Herrmann et al, 1993) where the main emphasis was on supply control and thus reducing price instability. However, currently, policies based on market solutions to the problem solely of price instability are being sought as the general macroeconomic stance shifts away from intervention and more specifically that of supply control. It is one possible solution to this problem, the use of futures markets, which forms the main focus for this paper.

The aim of this paper, therefore, is two-fold. First, it seeks to examine the reasons underlying the task force's review and second, it reviews the arguments for utilising futures markets in LDCs as an instrument of risk reduction. To that end, the paper will be structured as follows. Section Two, which will take the form of a review of past policy approaches, will examine why there is currently an interest in the use and establishment of futures markets. Accepting the failure of former policies (such as the ICAs), section three will examine what role a futures market can be expected to perform and to what extent producers in LDCs can be helped. Section Four then provides an illustration of the extent and scale of futures market usage across the world. What is clear is that there is a concentration of exchanges in DMEs rather than LDCs, and that there is perhaps little cross-linkage between the two sets of markets. Section Five will then provide a discussion of what might lie ahead under the World Bank's proposals while Section Six will offer some conclusions.

2. WHY FUTURES MARKETS NOW?

Policies designed to counter the effects of the inherent instability of commodity markets have taken various forms since the 1930s but in general it is possible to say that they all shared a common feature of being based on intervention. Keynes (1938) proposed a

series of international buffer stock schemes that were designed to compensate for the low levels of private storage in commodity markets:

> "It is the outstanding fault of the competitive system that there is no sufficient incentive to the individual enterprise to store surplus stocks of materials, so as to...average as far as possible, periods of high and low demand" (Keynes, 1938, p 279).

In the 1930s, the political climate, partly influenced by Keynes' views, was receptive to the notion that "the pursuit of price stability in otherwise price-unstable markets is a sensible policy" (Hallwood, 1979). In essence, buffer stock schemes were heavily promoted especially through the establishment of the International Commodity Agreements (ICAs) (for a more detailed review of the earlier history of these and other policies, see Gordon-Ashworth (1984)). These were seen as a rational response on the part of producers (and consumers to a lesser extent) to the commodity price slump of the 1930s. Prices had been low and this was thought to be due to supply imbalances in relation to demand, and thus buffers were designed to cut over-production.

On this basis, ICAs were established for wheat, tin, tea, rubber and sugar and all had two main objectives: to raise prices in the slump that was currently happening and thereafter, balancing supply and demand in the entire market. While the outbreak of war greatly affected these Agreements, the political climate of the 1950s was receptive to interventionist policies (mainly as a result of the experience of the 1930s). Old ICAs were renewed and new ones covering a wider range of commodities were added. However, unlike the 1930s, it was not the level of prices that was the issue; increasingly, the volatility of prices was seen as the main problem although in a similar fashion to the earlier period, buffer stocks were still seen as the main policy instrument.

Of 39 ICAs between 1931 and 1982, half specified some form of stock policy and most referred to co-ordinated national stocks. Internationally administered stocks tended to be less common but were a feature of tin, cocoa, rubber and sugar.

The 1970s had seen widespread support for ICAs and buffer stocks as a means of taming commodity markets, and indeed the negotiation of the ICAs was a key plank of the New

International Economic Order. However, by 1996, the ICAs were having their obituaries written (Gilbert, 1996), which raises the question of why they died and perhaps, more importantly, the further question of what was intended to replace them?

The reason for their "death" can be attributed to many factors (Gilbert, 1996). In essence, two practical problems arose. First, the difficulty in setting the price range and updating it over time in response to changes in either costs or consumer tastes. Second, finding sufficient funds to keep prices within the specified range, a problem that was especially acute if there was a run of years of high production/low prices and stocks have to be held over a long period.

The first problem affected all the ICAs and resulted in many disputes between the consumer and producer nations. The second problem was a major factor behind the collapse of the International Tin Agreement (ITA) and also caused severe problems with the International Cocoa Agreement (ICCA).

An additional problem arose from the type of policies employed under the ICAs. The use of export controls in the International Coffee Agreement (ICoA), International Sugar Agreement (ISA) and ITA was generally price raising rather than stabilising, but unsurprisingly created cartel-like problems. Non compliance with export quotas by members, and significant increases in supply by non-members, were not uncommon and indeed, distortions induced by export quotas made it difficult to revise output in the face of changing costs or consumer tastes (e.g. the switch in coffee consumption to mild arabicas from stronger robustas). Finally, any benefits that did accrue might have been appropriated or dissipated in rent-seeking activities.

In summary, therefore, it could be argued that even in their design, there were always going to be tensions in the ICAs and possible problems over their operation. Also, the impact of ICAs in achieving their goals was not as great as originally envisaged. Varangis and Larson (1996) suggest that the efficacy of the ICAs was "questionable" (p 1) and Gilbert (1996) shows that there is very little evidence pointing to success in reducing price volatility. However, it could be argued that the ICoA and the ITA were successful in that while they did not achieve price stability they did in fact manage to raise prices for

producers by employing export controls. In other words, the agreements were robust enough to limit supply and hence push up market prices above the free-market level.

In this period of collapse and mothballing of the ICAs, a more general change in the macroeconomic environment was taking place. As more governments in DMEs espoused Monetarist policies, greater emphasis was being placed on allowing markets to operate in an unfettered fashion to encourage greater efficiency and growth; this policy switch was hard to resist in the case of commodity markets where previous policy had not worked. Thus, the emphasis now shifted away from the intervention approach that had been favoured since the 1930s and toward a system that allowed *individuals* to cope with the *impact* of price volatility. Consequently, the approach favoured by international agencies is that of risk management for the individual, with one major policy approach being to encourage the use and establishment of futures and options markets. As stated in the World Bank's report *Global Economic Prospects and the Developing Countries* (1994):

> ".....market-based risk management instruments, despite several limitations, offer a promising alternative to traditional stabilisation schemes" (p 4).

A view supported by Varangis and Larson (1996) and by Gilbert (1996) who states:

> "Since the tin collapse in 1985.... there has been a shift in emphasis toward using futures markets for risk management" (p 367).

Indeed, some authors had tried to compare the impact of futures markets in comparison to buffer stock schemes (for example, Gemmell (1985) and Gilbert (1985)). This work highlighted that, with some qualifications (if credit is constrained and the costs of using futures are high, then their effectiveness is greatly reduced (Gilbert, 1985), futures markets offered a more effective and welfare raising method of dealing with price volatility. If this is indeed the case, then it opens up the questions of what futures markets can provide for traders and also to what extent they are valid instruments for producers in LDCs to use? The next section will review some of the main issues that address both questions.

3. FUTURES MARKETS AND THEIR ROLES IN LDCs

It is perhaps unfair to differentiate between the roles futures markets play in LDCs and their roles in DMEs as they are the same, although how they perform them and to what level of efficiency may vary across exchanges. To simplify the issue at this stage, it will be assumed that all exchanges are the same and thus it is the generic roles of futures markets that will be considered.

More than anything else, and particularly in the context of the current policy debate, futures markets offer a mechanism for dealing with price risk. They cannot offer any form of quantity risk management, a role only partially played by crop insurance, and thus they can only claim to cover income risk partially. Clearly, the primary benefit though is to allow for hedging and as Thompson (1985) shows, this can provide benefits in four ways by providing:

- Anticipatory hedging: where a commodity is produced and sold on a spot market, there is considerable risk that in the time between a production decision being taken and the output being sold, prices could have moved against the trader. This spot price risk creates problems for producers who do not know what their income levels will be and thus cannot plan with any great confidence. By taking a position in the futures markets that is opposite to that held in the spot market, the producer can potentially offset losses in the latter with gains in the former (Telser (1981) shows that complete price insurance is only possible if spot and futures prices move exactly together. If not, then perfect insurance is not feasible). By locking in price, producers (and other traders in the spot market such as merchants or processors) gain a degree of risk reduction not previously available to them. The only alternative is to use forward contracts but these are highly specific, private agreements and are not necessarily easily established or negotiated. The standardised, organised and centralised nature of futures exchanges means that risks are borne by others such as speculators in return for a premium.

- Flexibility in pricing: because futures markets offer a range of contracts for each commodity, there is a great deal of flexibility in pricing for the individual trader. This

is clearly not the case with collective intervention policies such as the ICAs where only one target price (or at best a range in which it lies) can be offered.

- Inventory management: the price difference between futures contracts of different maturities, or price spread, signals the availability of stocks to the market. The difference between futures prices and spot prices is commonly known as the basis, and can be measured at any point during the lifetime of the futures contract. In essence, the basis is a measure of storage and interest costs that must be borne by a spot market trader in holding stocks now for sale at some point in the future. Clearly, as the basis gets larger, the incentive to store more increases, thus stocks will build up and vice versa. As a result, the level of inventories held in the spot market will be determined by the basis and will ensure a more efficient process of private storage than in the absence of futures markets. In turn, this should ensure a smoother pattern of prices in the spot market and hence, potentially, reduce price volatility (Netz (1995), Morgan (1999)).

- Price support; to some extent this relates to the discussion in Section Five below where groups of producers are represented by an agent who trades on their behalf. In doing so, minimum prices for output can be guaranteed and thus risk is reduced for the individual trader for the cost of a small premium fee. Varangis and Larson (1996) show several examples of where this has occurred such as with cotton and oil in Mexico and oil in Algeria. Other examples can be found in Claessens and Duncan (1993) and World Bank (1999).

While there are other wider benefits to the economy of a more efficient allocation of resources that could arise from establishing or using futures markets, this paper will focus on price-risk reduction. If that is accepted as the main reason for using futures markets, then to what extent are individuals using them, both in DMEs and LDCs? Section Four will provide an indication of the degree of usage.

4. THE CURRENT EXTENT OF FUTURES MARKET TRADING IN LDCs

Futures markets have existed since the seventeenth century, when they were informally established in coffee shops in Amsterdam and centred on the trade in tulips. The modern form however began in the nineteenth century with exchanges being founded in, amongst other cities, London, Liverpool, Chicago and New York. Based on the growing volume of international trade, they sought to aid in the buying and selling of a wide range of commodities such as cotton, coffee, wheat and sugar. However, it is probably true to say that for the main part, most traders on the market were not necessarily seeking price insurance as their modern counterparts do. Instead, the exchanges were predicated on a need to channel the physical exchange of the good.

More recently, however, the exchanges are more generally viewed as providers of insurance and disseminators of price information, thus providing a forum for both hedgers and speculators to carry out their activities. Consequently, the volume of physical transactions has declined markedly such that many futures markets are now viewed solely as paper markets. Most expansion of trade, though, has taken place in the DMEs as Table 1 demonstrates, although it is important to highlight the inclusion of the Brazilian exchange as the eighth largest in the world, a clear indication of its growth in the last decade.

Table 1: Ten Largest International Exchanges for Futures and Options (millions of contracts)

	1997	**1998**	**Change (%)**
1. Chicago Board of Trade (USA)	242.7	281.2	16
2. EUREX (Germany/Switzerland)	152.3	248.2	63
3. Chicago Mercantile Exchange (USA)	200.7	226.6	13
4. Chicago Board Options Exchange (USA)	187.2	206.8	10
5. LIFFE (UK)	209.4	194.4	-7
6. AMEX (USA)	88.1	97.6	11
7. New York Mercantile Exchange (USA)	83.8	95.0	13
8. Bolsa De Mercadorias Y Futuros (Brazil)	122.2	87	-29
9. Amsterdam Exchanges (Netherlands)	48.7	64.8	33
10. Pacific Stock Exchange (USA)	43.4	59.0	36

Source: Futures Industry Association, Chicago, quoted in World Bank (1999).

What is also interesting to highlight is the proportion of contracts traded that relate to primary commodities. Table 2 shows that approximately 30% of all futures contracts traded relate to primary commodities and while this appears to be a sizeable share of the market, it is in fact indicative of a declining share over time. The development of financial derivative instruments has led to a huge increase in trading, while there has been little or no growth in commodity based trading (Edwards and Ma, 1992).

Table 2: Types of Contracts traded Across the World

	1998		**Jan. - April 1999**	
	Million Contracts	**%**	**Million Contracts**	**%**
Interest rate	759.9	58.4	213.8	55.3
Equity indices	177.9	13.7	54.9	14.2
Foreign currency	54.5	4.2	11.3	2.9
Agricultural commodities	119.3	9.2	39.8	10.3
Energy products	83.1	6.4	27.6	7.1
Non-precious metals	57.3	4.4	21.3	5.5
Precious metals	47.3	3.6	17.5	4.5
Other	1.2	0.1	0.4	0.1
Futures on equities	0.6	0.1	0.4	0.1
Total	1300.9	100	387.0	100

Source: Futures Industry Association quoted in World Bank (1999) p 88.

Tables 1 and 2 do not show the nationality of traders i.e. whether they are from LDCs or DMEs and thus Table 3 provides an indication of this information. As is apparent from

the table, the values quoted suggest little penetration of the markets by LDCs. Morgan et al (1999) highlight some of the reasons why LDC producers might be reluctant to trade, or constrained from doing so, on offshore futures exchanges. There could be problems associated with exchange rate risks and also with credit constraints that prevent potential traders from gaining enough foreign currency to allow them to trade. Further, issues surrounding basis risk, such as quality differentials and transport costs, make the process of trading more risky for LDC producers than for their DME counterparts. This is of particular importance as the futures markets are presented as being risk management tools that help to *lower* exposure to risk and not to increase it.

Table 3: LDCs Open Interest on US Commodity Exchanges (1991)

(% of open interest)

Commodity Group	Asia Developing	M. East & N. Africa	SSA	Latin America
Grain/Soybean	0.19	0.12	-	1.21
Livestock prods.	-	-	-	0.39
Foodstuffs	0.30	0.18	0.68	2.09
Industrial material	-	0.14	0.03	1.58
Metals	0.07	0.90	-	1.19
Crude oil	-	-	-	1.40
Financial instruments	0.01	0.20	-	2.04
Currencies	-	0.27	-	3.17

Source: Debatisse at al (1993) quoted in Morgan et al (1999).

The last problem is in some respects the most important, but the most difficult to deal with, and that is the question of confidence. This might arise on the part of traders who feel that they lack understanding of the market and certainly lack a close link to those doing the day-to-day trading. Secondly, the brokers on the exchanges might be very wary of extending credit and other loan facilities to LDC producers or bodies when they fear default. In many respects, it is dealing effectively with this problem, and the many others, that lies at the heart of the World Bank's Task Force approach to devising a successful policy switch towards market-based risk management of commodity price risk.

An alternative view, of course, is to encourage the establishment of domestic futures markets. Immediately, the problems of foreign exchange controls and exchange rate risk are removed, as are issues surrounding the basis. However, the costs of such a policy are very high, not only in simple cash terms but also in opportunity cost terms, especially to an economy seeking rapid but sustainable growth. As Leuthold (1994) argues, in many respects the advantages of trading on offshore markets far outweigh the costs and especially where the commodity concerned is internationally traded, then there really is only one option and that is to trade on well-established, highly-liquid offshore exchanges.

Most of the potential problems outlined above do not apply to producers and other traders in DMEs. The high volume of trade in futures in relation to the levels of world production of primary commodities (Table 4) suggests that there are many involved in the spot market who are willing to trade on futures markets. These are drawn mainly from DMEs and imply that traders in these countries have realised the value of futures trading and policy makers have encouraged usage where possible.

Table 4: Volumes of Physical and Futures Market Trades 1997

Commodity	Volume of World Output (millions of tons)	Futures Traded Volume (millions of tons)	Futures Volume as % of World Output
Cocoa	2.9	41.3	1424.1
Coffee	6.0	47.4	790.0
Sugar	126.6	365.2	288.5
Wheat	612.4	1119.0	182.7
Maize	584.9	4218.0	721.1
Soybeans	143.4	2499.0	1742.7
Cotton	20.0	67.3	336.5
Rubber	6.8	29.8	438.2
Copper	13.6	410.1	3015.4
Aluminium	21.8	5.6	25.7
Tin	0.2	1.1	550.0

Source: adapted from World Bank (1999) p 81.

In summary, therefore, it would appear that currently there are only very low levels of trading by LDC producers on futures exchanges, mainly as a result of lack of access to markets. While there is some movement towards establishing domestic exchanges, there is little in the way of short-term relief being offered to producers to help them cope with price risk. On the other hand, it would seem that many producers in DMEs have been encouraged to use futures exchanges to limit risk exposure and the pattern of agricultural policy reform in many western economies will further support this trend. The key, therefore, is to offer the same benefits being enjoyed to DME producers to producers in LDCs without the problems of trading that have greatly limited trading so far. To that

end, the World Bank's approach to finding a new mechanism for delivering such a policy is both timely and necessary.

5. PROSPECTS FOR THE SUCCESS OF NEW POLICIES

Given that there would appear to be benefits from trading on futures and given also the demise of collective intervention policies, there seems to be a strong case for exploring the potential of futures markets as a policy instrument for LDCs to utilise. However, as Claessens and Duncan (1993) state, rolling-out of a radical switch in policy towards the encouragement of the use of futures markets in LDCs raises key issues such that:

> "Objectives need to be realistic and should interfere as little as possible with the efficient allocation of resources" (p 14).

Further,

> "How financial instruments fit into the broader range of stabilisation mechanisms leads to the question of whether they are complements of or substitutes for other schemes" (p 15).

In other words, a blanket policy intended to cover all commodities and all countries would not be ideal and indeed may create some of the problems associated with collective actions such as inflexibility. Clearly, therefore, a carefully designed policy framework needs to be established by each country before the policy can be put in place.

The World Bank has long recognised the problems inherent in a policy switch of the magnitude discussed so far. In essence, their recent attempts to devise a new system have focused on the key issue of the gap between suppliers of the risk management instrument and the demanders of it. In other words, while the benefits of trading on futures exchanges in general are well understood and are reasonably indisputable, they apply only if potential users can have access to the market. Thus, traders in DMEs have little problem gaining risk-protection but the prospects for traders in LDCs are much less encouraging.

What concerns the Bank most is the fact that there has been an explosion in the number and range of products established to manage risk but that these are not available to those countries that need them most i.e. poorer, producer nations. They identify a lack of infrastructure, high costs and, as suggested above, a lack of trust as the key factors creating a gap between potential and actual usage of futures exchanges. To tackle these problems one by one would be both time consuming and potentially very inefficient and as a consequence, the Task Force has proposed a scheme to establish an intermediary that acts on behalf of traders.

In essence, the international intermediation that they propose would:

> "a) rely on instruments which are simple, user friendly, and already available in risk management markets - in particular on organised commodity exchanges and b) create an international intermediary to help bridge the gap between entities in developing countries and private sector providers of such instruments" (World Bank, 1999, p 9).

The picture that emerges is therefore one of closing the gap between instruments and potential users. Its main purpose would be to provide a facilitory role in aiding the transactions between the private sector providers of insurance and the potential users of insurance in LDCs (p 10). Crucially, there would be some element of partial guarantee for the transactions of the LDC traders thus overcoming the fear of default often put forward by brokers as a reason for excluding such traders. However, only "exceptionally" would the intermediary actually offer its own price insurance.

The intermediary is designed to provide advice, knowledge and expertise to countries that are otherwise bereft of such facilities. However, it is seen as a complement to, and not a substitute for, current private sector agencies and activities. Equally important is the emphasis placed on providing poverty reduction for small-scale producers. It has often been felt that it is the smaller scale, and hence poorer, producers who miss out on schemes designed to help them. By focusing specifically on them, the scheme hopes to rectify the failing of past policies and thus provide help where it is most needed.

It is envisaged that the intermediary would be staffed by people from a range of organisations such as the Bank, the exchanges, NGOs and other agencies committed to aiding development. One of the reasons why this is appealing is that it will increase the credibility of the organisation in the light of potential users; if it were to be staffed entirely by financial specialists from the private sector, it could be viewed in the same light as existing mechanisms for dealing with price risk and thus would not be utilised by LDC traders. Additionally, the intermediary would not be seeking to attract individual growers to trade as that would be very difficult to achieve. Instead the target groups of traders are co-operatives, local banks, trade associations and public bodies, all of whom represent small growers but can gain economies of scale in acting on behalf of lots of them. Again, this would appear to be a sensible strategy as it acknowledges the fact that the gap between the individual in an LDC and the risk-management market in a DME is massive. Its operation thus tries to shorten this gap by introducing two intermediaries, one the international body and the other collective groups at the LDC level.

With the backing of many groups such as the main exchanges, NGOs, governments and other interested parties, the policy does at least start with a reasonable chance of success and is being piloted in the spring of 2000 in several countries and with several commodities. It does not claim to provide all the answers to all the problems however, as it highlights the fact that it does not cover all commodities, provide income protection, nor does it deal with the long-run trend in commodity prices. It does though provide a measure or price-risk reduction that plainly was not previously available to producers in LDCs and if that is all it achieves then it could be deemed a success.

6. CONCLUSIONS

The main problem facing all agents who engage in the physical trade of primary commodities is the inherent price risk involved. It leads to uncertainty both for producers in terms of income and for consumers in terms of costs. The problem for LDCs is that in many cases they are both producer and consumer and thus face significant difficulties, especially in terms of raising foreign exchange earnings and hence promoting growth. If there were appropriate and easily usable policy instruments that could be deployed to allay or remove these risks then there would be little need for concern. However, as the paper has tried to show, the history of policy directed towards commodity markets has

tended to show failures and a general inability to help those that need it most, the smaller, poorer producers.

Given the paucity of policy options and the constraints imposed by macroeconomic policies that eschew intervention, the World Bank has sought to devise a programme that develops their long-standing view that market-based mechanisms for risk management are the way to proceed. To this end, they have tried to marry the obvious benefits that such a policy can bestow on traders with an institution that overcomes the many and significant problems that prevent LDCs from trading on futures markets and gaining these benefits. The matching of a practical proposal with a theoretical ideal is the main plank of their policy.

The success of the intermediary scheme lies in the ability of the institution to persuade LDC governments and traders that they are being offered a realistic, low-cost and relatively risk free chance to cover some of their price risks. It cannot claim to do more than this as it not geared to do so, but if the pilot scheme is successful then there is a clear opportunity for commodity market policy to be transformed radically from its original interventionist roots. In doing so, it could provide the type of mechanism that would generate benefits for many producers in many countries, a prospect that many feared had been lost when former policy regimes collapsed.

REFERENCES

Claessens, S. and Duncan, R.C. (eds) (1993), *Managing Commodity Price Risk in Developing Countries*, World Bank, Washington D.C.

Debatisse, M.L., Tsakok, I., Umali, D., Claessens, S. and Somel, K. (1993), "Risk Management in Liberalising Economies: Issues of Access to Food and Agricultural Futures and Options Markets", World Bank Technical Development Report No. 12220 ECA.

Edwards, F.R. and Ma, C.W. (1992) *Futures and Options*, New York, McGraw-Hill.

Gemmell, G. (1985), "Forward Contracts or International Buffer Stocks? A Study of their Relative Efficiencies in Stabilising Commodity Export Earnings", *Economic Journal*, **95**, pp 400-417.

Gilbert, C.J. (1985), "Futures Trading and the Welfare Evaluation of Commodity Price Stabilisation", *Economic Journal*, **95**, pp 637-661.

Gilbert, C.J. (1993), "Domestic Price Stabilisation Schemes for Developing Countries" in Claessens, S. and Duncan R.C. (op cit).

Gilbert, C.J. (1996), "International Commodity Agreements: an Obituary Notice", *World Development*, **24**, pp 1-19.

Gordon-Ashworth, F. (1984), *International Commodity Control: a Contemporary History and Appraisal*, Beckenham, Croom Helm.

Hallwood, P. (1979), Stabilisation of International Commodity Markets, Greenwich: JAI Press.

Herrmann, R., Burger, K. and Smit, H.P. (1993), *International Commodity Policy: a quantitative analysis*, London, Routledge.

Keynes, J.M. (1938), "The Policy of Government Storage of Food-stuffs and Raw Materials", *Economic Journal*, **48**, pp 449-60.

Leuthold, R. M. (1994), “Evaluating Futures Exchanges in Liberalising Economies”, *Development Policy Review* **12**, pp 149-163.

Morgan, C.W. (1999), "Futures Markets and Spot Price Volatility: A Case Study", *Journal of Agricultural Economics*, **50**, pp 247-57.

Morgan, C.W. Rayner, A.J. and Vaillant, C. (1999), "Agricultural Futures Markets in LDCs: a Policy Response to Price Volatility?" *Journal of International Development*, **11**, pp 893-910.

Netz, J.S. (1995), "The Effect of Futures Markets and Corners on Storage and Spot Price Volatility", *American Journal of Agricultural Economics*, **77**, pp 182-93.

Sapsford, D. and Morgan, C.W. (eds) (1994), *The Economics of Primary Commodities*, Aldershot, Edward Elgar.

Telser, L.G. (1981) "Why there are Organised Futures Markets", *Journal of Law and Economics*, **24**, 1-22.

Thompson, S. (1985), “Use of Futures Markets for Exports by Less developed *American Journal of Agricultural Economics* **67** pp 986-991.

Varangis, P. and Larson, D. (1996), "Dealing with Commodity Price Uncertainty", Policy Research Working Paper 1167, World Bank International Economics Department, World Bank, Washington D.C.

World Bank (1994), *Global Economic Prospects and the Developing Countries*, The World Bank, Washington D.C.

World Bank (1999), "Dealing with Commodity Price Volatility in Developing Countries: a Proposal for a Market-based Approach", International task Force on Commodity Risk Management in Developing Countries, Discussion Paper (September), Washington DC.

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