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CONTRIBUTION TO THE IMPROVEMENT OF THE FUNCTIONING OF COMMODITY MARKETS

Analysis of ways of improving the efficiency and use of existing mechanisms for the management of risks arising from commodity price fluctuations

Report by the UNCTAD secretariat

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INTRODUCTION

1. At the eighth session of UNCTAD, Governments recognized the importance of exploring new approaches to minimizing the risks arising from commodity market fluctuations. They recommended that, "where appropriate, developing countries should be provided with technical assistance and policy advice on mechanisms, such as the use of financial instruments, to manage price and other commodity-related risks." They also noted that "increased reliance on market forces to determine international commodity prices requires the efficient and transparent operation of price formation mechanisms. In particular, it is essential that both buyers and sellers have full confidence in the ability of commodity exchanges to form prices which reflect the basic supply/demand situation."[1]

2. In view of this, the Conference agreed that "the UNCTAD secretariat should explore various mechanisms, including market-linked price-hedging mechanisms, such as commodity futures, options, swaps, and bonds, obstacles to their potential use, including sovereign risk and problems of creditworthiness, and modalities for overcoming such obstacles and should provide information and assistance in this regard. At the level of governmental and non-governmental experts, an examination should be undertaken in UNCTAD of: (a) the conditions, both technical and regulatory, for encouraging maximum participation in, and usage of, commodity exchanges by both buyers and sellers of commodities and (b) proposals to address these conditions."[2] Subsequently, this agreement was reflected in the work programme of the Standing Committee on Commodities, which decided to analyse ways of improving the efficiency and use of existing mechanisms for the management of risks arising from commodity price fluctuations.[3]

3. In response to these mandates, the secretariat has prepared two non-sessional documents and the Secretary General of UNCTAD has convened a group of governmental and non-governmental experts. The first document[4] provided general background information on the different commodity risk management markets around the world and on the variety of instruments used to reduce commodity-related price risks. The second[5] discussed various technical and regulatory conditions affecting participation in commodity exchanges and usage of commodity futures and options contracts by buyers and sellers of

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1 "A New Partnership for Development: The Cartagena Commitment", TB(VIII)/Misc.4, paras. 205 and 206.

2 *Ibid.*, para. 213.

3 See TD/B/39(2)/4, Annex I, para. B.4.

4 "A survey of commodity risk management instruments", UNCTAD/COM/15 (15 March 1993).

5 "Technical and regulatory conditions influencing participation in, and usage of, commodity exchanges by both buyers and sellers of commodities", UNCTAD/COM/16 (22 April 1993).

commodities. The latter report provided the main input to the Group of Experts on Commodity Exchanges which met for its first session in Geneva from 24 to 27 May 1993. Discussion at that session focused on the major issues arising in the functioning of commodity futures exchanges. The second meeting of the Group of Experts, scheduled for September 1993, will take up the proposals for action formulated on the basis of the main findings of the first meeting.

4. The purpose of the present report is to offer Governments the essential material contained in the two background documents and to link this with the main findings of the first meeting of the Group of Experts on Commodity Exchanges. It is hoped that this synthesis will contribute to a better understanding of the potential of commodity risk management markets and instruments as well as the constraints and problems faced in this area.

5. In addition, in direct response to the UNCTAD VIII mandate the secretariat's technical cooperation activities are increasingly being focused on providing information, advice and training in the commodity trading area. These activities, which are linked with the UNCTAD "TRAINFORTRADE" programme, are directed to three categories of recipients: commodity exporters and importers at the operations level, senior executives of companies and institutions engaged in commodity trading, and policy makers in governments, including Central Banks and Ministries of Finance, Trade and Development Planning. Details on these activities are provided in the report on technical assistance under agenda item 8 of the provisional agenda of the second session of the Standing Committee on Commodities.[6]

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[6] "Technical cooperation in the field of Commodities - Identification for consideration of areas in which technical cooperation should be strengthened", TD/B/CN.1/12.

I. COMMODITY PRICE RISK MANAGEMENT: THE MARKET PLACES AND THE INSTRUMENTS

6. World market prices of primary products often fluctuate widely and rapidly. This poses a number of problems for commodity producers, traders and consumers, including processors, and for those with an indirect exposure to commodity price risks. Actual sales prices may turn out to be lower, or purchasing prices higher, than originally envisaged. The profitability of investments in commodity production or commodity processing is particularly affected, as it depends by definition on future prices.

7. Different actors in the commodities field have sought and developed instruments to cope with the commodity price risks to which they are exposed. These instruments include stabilization programmes and funds (at the international, national or company level), marketing strategies involving the timing of sales and purchases and long-term fixed-price contracts, as well as a number of market-based instruments, notably futures contracts. Since the beginning of the 1970s the importance of the latter in the trade of commodities for which they exist has been growing, both as hedging instruments and as mechanisms for establishing the international price of the commodities concerned.

8. There are several reasons for this. First, the increasing number of suppliers on commodity markets has led to a decline in the bargaining power of producers and in the number of long-term trade agreements with more or less stable administered producer prices. There was therefore a greater need for independent price discovery mechanisms. Furthermore, this evolution has resulted in greater volatility in commodity prices which has, on the one hand, increased the need for protection against price risks while, on the other, providing a sufficient degree of price fluctuation to attract liquidity to futures markets through the activity of speculators.

9. A second reason is that several national and international schemes for price stabilization had encountered difficulties. Commodity market participants therefore had to look for other mechanisms to protect themselves from excessive price risk. Thirdly, the high real interest rates of the early 1980s caused high storage costs. It was therefore much cheaper for commodity traders and consumers to obtain a claim on a commodity by purchasing a futures contract than it was to purchase and store physical materials. This changed the perception of commodity traders and consumers regarding the trade-off between holding commodities in store and using futures and options markets. Fourthly, the easier access to information and communications networks has greatly facilitated participation in the exchange markets for a large number of participants all over the world.

10. The growing importance of futures contracts has led to a dramatic increase in the kinds of market-based risk management instruments that can be used. It has also increased the flexibility they provide to potential users. This chapter offers a brief review of the range available.

A. Organized and over-the-counter markets

11. Market-based risk management instruments are available as standardized or tailor-made contracts. Standardized contracts are usually traded on commodity futures and options exchanges; these contracts (futures and options) stipulate the specific quality of a commodity, the specific volume, and specific delivery times and procedures. Tailor-made risk management contracts are created and offered by a range of commodity trading houses (including the trading arms of large petroleum companies) and financial institutions (brokerage companies and private banks). This market is called the over-the-counter market; the instruments offered include forward contracts, swaps, and commodity bonds and loans.

12. A commodity exchange is a financial market where different groups of participants (hedgers, that is, those covering price risks in physical transactions, and various types of speculators) trade commodity-linked contracts, either futures or options, with the underlying objective of transferring exposure to commodity price risks. Organized commodity futures exchanges have existed since the last century; organized options trade was introduced in the early 1980s. The world's most important commodity exchanges are located in developed countries, and they bring important invisible foreign exchange earnings to these countries. The main ones are the Chicago Board of Trade (CBOT), New York Mercantile Exchange (NYMEX), London Metal Exchange (LME), Tokyo Commodity Exchange (TOCOM), London Commodity Exchange (LCE), Commodity Exchange, Inc. (COMEX, New York), Tokyo Grain Exchange (TGE), International Petroleum Exchange (IPE, London), and the Coffee Sugar & Cocoa Exchange (CSCE, New York).[7]

13. There are also commodity futures exchanges in a number of developing countries. Brazil's Bolsa de Mercadorias & Futuros (BM&F), where, since May 1991, US dollar-denominated coffee, cotton and live and feeder cattle contracts are traded alongside several other commodity contracts denominated in local currency and financial contracts, is now the world's fifth largest futures exchange. Other exchanges can be found in Singapore (the Singapore International Monetary Exchange, SIMEX, and the Rubber Association of Singapore Commodity Exchange, RASCE) and in Malaysia (the Kuala Lumpur Commodity Exchange, KLCE), while smaller, mainly domestically oriented commodity futures exchanges exist in Argentina, China, Hong Kong, India, and the Philippines. Several other countries, including Chile, Indonesia, and Mexico, are envisaging the creation of their own exchanges. There are also commodity exchanges in the CIS republics, although only few of the auction-type market places existing in these countries have taken the step from spot-market trading to forward and futures market trade.

14. Trading on a commodity exchange can take place in a variety of ways, with open outcry being the most common one. In an open-outcry system, people authorized to trade assemble during a trading session on a market floor. They indicate by hand signals and by calling out (hence the name "open outcry") the orders they would like to place and the price. A trading session can last anywhere from five

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[7] See also UNCTAD/COM/15, annex table 2.

minutes to a few hours. During this period, prices move rapidly, rarely remaining stable for more than a few minutes. Information on prices thus formed is distributed almost instantaneously through national and international communications networks, and in many cases provide the national or international benchmark prices for physical trade in the underlying commodity.

15. For over-the-counter instruments, the market is "made" by intermediaries. They are the ones who decide which instruments are available, for whom, and at what price. These intermediaries include trade houses, brokerages and banks. In its simplest form, the over-the-counter market consists of an intermediary offering a client a particular risk management instrument for a certain price, presumably tailor-made to the needs of the client. A somewhat more advanced form occurs when a broker collects the quotes of a number of banks and trade houses, and is thus able to offer the most competitive quote to potential clients, sometimes by way of an electronic information service. All the companies offering over-the-counter instruments are risk-averse. They try to limit or even eliminate their risks when offering risk-management instruments by offsetting transactions, in the over-the-counter market, on a commodity futures exchange, or in physical trade. This has several consequences. One is that, as the possibility to offset swaps and similar mechanisms by physical transactions improves an intermediary's capacity to offer different instruments, several investment banks have found it attractive to become involved in physical trade. Another consequence is that organized commodity exchanges and the over-the-counter market are interrelated and complementary rather than competitive: the use of over-the-counter instruments usually induces an increased use of the futures market.

B. For which commodities do market-based risk management instruments exist?

16. Futures and options contracts exist for most of the main primary commodities traded internationally.[8] Several contracts are available in the fuels sector and for cocoa, coffee, cotton, live animals, maize, orange juice, palm oil, rubber, silk, soyabeans, soyabean oil, sugar, wheat, aluminium, copper, gold, lead, nickel, silver and zinc. However, it should be noted that not all contracts can be considered as providing a suitable risk management instrument for all of the trade in the respective commodity: many contracts are mainly used for domestic purposes; others, even though they are used for world market trade, do not cover price risks for all the grades of the relevant commodity or for all the regions in which they are traded. For example, the existing cotton futures contracts are of little use for exporters of longstaple cotton, while the New York crude oil contract is of little relevance for oil trade in East Africa and parts of Asia.

17. The over-the-counter market only fills some of these gaps, as most of the instruments that they offer are based on exchange-traded contracts. At times, they can build on these contracts, for example by offering a crude oil swap specifically tailored to prevailing prices in the South-East Asia region. Only in rare cases does the over-the-counter market offer instruments for commodities for which there is no

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[8] See UNCTAD/COM/15, annex table 3, and UNCTAD/COM/16, annex table 1.

futures market; this is the case in particular for coal and woodpulp, commodities with an active physical market and reliable independent price reporting.

C. Forward contracts

18. Forward contracts are agreements to purchase or sell a specified amount of a commodity on a fixed future date at a pre-determined price. Physical delivery is expected. If, at maturity (the future date that has been agreed to in the contract), the actual price (the spot price) is higher than the price in the forward contract, the buyer makes a profit, and the seller suffers a corresponding loss. If the spot price is lower, the reverse occurs. Nevertheless, having a pre-determined price eliminates the risk of price changes for both the buyer and the seller.

19. There are different forms of forward trade. A number of organized forward markets exist (e.g. in China, India, Indonesia, Russian Federation). However, most forward trade is conducted over-the-counter, with transactions made directly or through brokers and dealers by telephone, telex and fax. These forward contracts, often negotiated on the basis of the prices formed on commodity futures exchanges, were until recently widely used for all commodities and in all regions. With the liberalization and resulting fragmentation of the marketing systems in many agricultural commodity-exporting countries, use has apparently declined, as small local private exporters, unlike marketing boards, tend to sell spot.

D. Futures contracts

20. Futures contracts are, in subtle ways, different from forward contracts. Like forward contracts, they are agreements to purchase or sell a given quantity of a commodity at a pre-determined price in the future. But, unlike forward contracts, physical delivery is not necessarily implied: the contract can be used to make or to take physical delivery, but usually, it is offset by a financial transaction on or before maturity (the closing date of the contract) making an equivalent reverse transaction.

21. Like forward contracts, futures contracts more or less lock in the price a user will receive or pay, but this time the mechanism is indirect. To hedge, a seller who has agreed to deliver a specific quantity of a commodity in the future at the price prevailing at that future time would, simultaneously, sell a futures contract or contracts for the same quantity at the current price for future delivery. When he actually delivers his physical good, he also buys back his futures contract. If the market price on the day of delivery is lower than the price in the futures contract, the loss on the physical market is compensated by the higher price on the futures contract (he buys back the contract for a price lower than the one at which he sold it). On the other hand, if the price in the physical market is higher than that for which he sold the futures contract, the gain on the physical market is offset by the loss on the repurchase of the futures contract.

22. One important difference with forward contracts is that futures contracts are "marked to market" every day: if the futures price moves adversely for a holder of a futures contract, that holder is obliged to pay into the clearing house (which guarantees the exchange's contracts) a sum equal to the value of the adverse movement (a margin call). This prevents users of the market from carrying large unrealized losses over a long period, and thus reduces the risk of default. However, this practice can create liquidity problems for market users as margin calls usually have to be covered within 24 hours. Although such margin calls do not represent losses for hedgers for whom adverse price movements in the futures market should coincide with favourable price movements in the physical market, most banks and other providers of credit are often somewhat wary of providing the required credit lines, in particular in the case of developing country companies. Futures contracts are automatically liquidated when margin calls are not met; therefore, companies without ready access to a sufficient amount of convertible currencies often prefer to use the futures market indirectly, through physical trade contracts such as "executable orders".[9] In this case, the contract partner (normally a trade house) takes responsibility for margin payments.

23. Developed country companies still account for the bulk of commodity exchange futures activity, be it for speculative or hedging purposes. Use by developing countries and Central and Eastern European countries of the exchanges directly or through intermediaries is rather limited, although it would seem to be growing. A very small number of developing country companies, all in the metals area, are members of developed country exchanges.

E. Options

24. Options are risk management instruments that protect those who buy them against unfavourable price movements while maintaining the possibility to profit from favourable ones. The cost of buying an option is called a premium. Put options provide protection against price declines, call options against price increases. Buyers of options are not exposed to any margin calls. Selling options, on the other hand, is a complicated and risky business, and sellers of options have to cope with possible margin calls. (At least for options traded on the organized exchanges, there is also an active over-the-counter market.)

25. The introduction of options on exchanges is fairly recent. It has followed a fast expansion in the over-the-counter option market during the 1970s. The first exchange-traded commodity option contract (since options had been banned in the 1930s) was for sugar in 1982 on the CSCE. Commodity exchange option trade is now active for a number of commodities - but mainly for short maturities, with few transactions extending beyond one year. Options on futures are traded actively for oil, gold, silver, coffee, cocoa, sugar, soyabeans, cotton, aluminium and copper. Over-the-counter, an active trade in options of up to three years is developing.

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[9] See UNCTAD/COM/15, paras. 62-64.

26. Like futures, options are still predominantly used by developed country companies - trade houses, developed country producers and consumers, and companies specializing in arbitrage between the futures and option markets. Some developing country companies and institutions, mainly in Latin America, use put options as a protection against price declines for their exports and call options as a hedge against an increase in their import bill.

F. Swaps

27. Swaps were developed as a long-term price risk management instrument to complement futures contracts which, until recently, were only available for up to 18 months forward and which in most cases are not very liquid beyond six months. A commodity swap is a purely financial agreement covering a specified volume of a commodity. Two prices are involved. One is variable and usually expressed in relation to a published price index such as the price of a futures contract; the other is fixed at the time of the agreement. Producers and consumers still buy and sell the physical commodity in the open market, but under the swap the participants pay, or are compensated for, amounts related to the difference between the fixed and the variable price so that they have locked in the price for the commodity at the time of the swap agreement. In effect, swaps are long-term custom-designed hedges which improve the ability of a company to repay a loan or to pay a dividend. Swaps are therefore attractive to lenders and investors as they ensure the cash flow of the company to whom they are providing finance.[10]

28. Commodity swaps were developed in the mid-1980s and had become quite important by the late 1980s. The commodity swap market was estimated to have some US$ 40 billion outstanding in late 1991, compared with close to US$ 2 trillion outstanding on interest rate and currency swaps.[11] Initially, banks and a number of trading companies (generally with production and/or refining interests which allowed them to offset risks by commercial operations) were the only ones providing swaps. They are still the main participants, but a number of swap brokers, traditionally active on the financial swaps market, have begun entering the commodity field. Most of those active in promoting swaps act only as intermediaries, minimizing their risks by offsetting swaps (a swap with a consumer being arranged back-to-back with an identical reverse swap with a producer) or futures transactions. Compared to a swap agreement directly between a consumer and producer, the use of an intermediary lets the intermediary carry all risks associated with performance of the swap (the counterpart risk, which includes the sovereign risk factor

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[10] Examples of the operation of swaps can be found in UNCTAD/COM/15, paras. 80-82.

[11] Until 1991, about 100 commodity swaps were completed each year, but the number is reported to have increased considerably since. The overwhelming majority of these swaps (approximately three-quarters of the market) concern petroleum or petroleum products. Some commodity swaps have also been negotiated for non-ferrous metals, such as copper, aluminium, zinc, lead, nickel, platinum, gold and silver, and for coal. There have been a few swaps for agricultural commodities, such as wheat, paper pulp, orange juice, coffee or sugar, while swaps for a wide range of other commodities such as maize, cocoa, natural gas and chemicals are being actively considered.

- see chapter III). The maturity of most commodity swaps is between one and seven years. Shorter-term swaps can be arranged when futures or forward markets do not exist to hedge the exposure (e.g. for products not traded on exchanges). In some rare cases, swap deals are as long as 25 years.

G. Commodity bonds and loans

29. Commodity bonds and loans are a complicated set of risk management instruments, which have as their goal the management of the financial risks of the lender/investor in addition to that of the company or country that issues the bonds or receives the loans. They are usually linked to investment projects or debt reschedulings in order to obtain access to capital on more favourable terms, and are not designed to manage price risk in commodity trade. Most commodity bonds issued so far have been linked to gold, silver and fuels; some have also been linked to aluminium, copper, nickel, coffee and cocoa. The use of such bonds expanded throughout the 1980s; the approximate value of public issues as of 1991 totalled around US$4 billion; the value of private issues, in particular in the fuels area, is probably much larger.

30. Most commodity-linked deals have so far been done in developed countries.[12] The earliest deals involving developing countries were designed to raise finance on domestic capital markets.[13] Recent examples of raising finance on international markets include the underwriting of a small palm-oil-price-linked loan in Malaysia by Citibank, the financing of a copper investment with copper-price-linked finance in Papua New Guinea by Metallgesellschaft, and gold loans to Brazil and Ghana.

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[12] For instance, a major part of the expected gold production for the next two to three years in Australia, North America and South Africa is covered by gold loans, and several Western oil companies have issued commodity-linked bonds.

[13] Mexico's state-owned oil company, Pemex, had used oil-price-linked bonds, denominated in pesos, as its main source of finance in the early 1980s. Both interest and principal payments on the bonds were tied to export prices for Mexican crude oil. This gave Pemex considerable protection during times of low prices, albeit at a high cost. In 1988, Brazil's state-owned mining company, CVRD, issued two- to four-year bonds, worth US$ 268 million in local currency, tied to gold prices.

II. TECHNICAL AND REGULATORY CONDITIONS INFLUENCING THE FUNCTIONING OF COMMODITY EXCHANGES AND THEIR ROLE AS PRICE DISCOVERY MECHANISMS

31. This chapter briefly describes the main issues involved in the functioning of exchange-traded commodity futures contracts affecting their use by buyers and sellers of commodities. These issues were discussed by the Group of Experts in May 1993. The chapter also reports on the Group of Expert's main findings in respect of these issues. Proposals by the Group of Experts to address the problems identified are to be discussed in September 1993 and will be reported to the Standing Committee on Commodities separately.

A. The role of exchanged-traded futures contracts in the pricing of physical trade, and conditions for futures contracts to be viable price discovery mechanisms

(1) Exchange-traded futures and options contracts: for which commodities are they feasible?

32. The primary conditions for the existence of an exchange-traded futures contract for a specific commodity is that the commodity should have a certain degree of homogeneity and storability and that its trade should be of a sufficient volume. In discussing this issue, the Group of Experts found that while commodity-specific characteristics could provide a barrier to the development of futures contracts, these barriers were likely to be overcome if there were sufficient incentives: problems such as lack of homogeneity or poor storability characteristics were likely to be open to such solutions as better grading procedures, improved storage,[14] adapted contract specifications including index-based and differential contracts,[15] and cash-settled contracts. The Group of Experts further noted that futures contracts should be designed in such a way as to maximize liquidity (i.e., with large volume of transactions and a large number of participants) including that provided by non-trade related participants. The success of a contract often depends as much on publicity and its psychological attraction to all types of participants as on its economic rationale.

33. However, the Group of Experts agreed that there were a number of other aspects influencing the viability of a commodity futures contract. These concern, in particular, industry and market structures,

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[14] The problem of limited storability can be overcome for some agricultural commodities by trading them in processed or frozen form such as fishmeal or frozen orange juice concentrates. When such a change occurs in the physical trade, a futures contract becomes feasible.

[15] Index-based or differential contracts include the "Brazil Differential Coffee Futures Contract" introduced on the Coffee, Sugar & Cocoa Exchange(CSCE) in June 1992 and the cash-settled cotton contract based on the so-called "Cotlook-A index" introduced on the New York Cotton Exchange (NYCE) in October 1992. The Chicago Board of Trade (CBOT) is considering launching a "world edible oil index" futures contract.

segmentation of markets, and government trade policies.[16] Viable futures and options contracts require a diversity of unrelated users to be present on both sides of the market. Highly oligopolistic or oligopsonistic market structures or a high degree of vertical integration in a commodity industry may prevent the development of exchange trading. This was the case in aluminium and fuels until the 1970s. The subsequent emergence of futures and options trading for aluminium and fuels points to the fact that growing market shares for independent producers and traders can, in addition, lead to exchange-trading replacing producer price formation mechanisms.

34. The Group of Experts also noted that physical trade in most major mineral commodities is commonly conducted directly between producers and processors. The successful development of futures contracts is possible with this type of market structure when the number of buyers and sellers is sufficiently large. By contrast, physical trade in most agricultural products commonly passes through traders; futures contracts for these products are usually set up to serve the needs of these traders. In this situation increased direct trade between producers and consumers, such as has happened in rubber, is likely to lead to a bypassing of the futures contract, at least in the short and medium term.

35. A related aspect is the division of a commodity market into different segments for reasons of geography, administrative measures[17] or differing consumer tastes.[18] Segmentation can reduce the volume of trade which underlies a futures contract and so affect its viability. Furthermore, administrative measures such as trade agreements or price controls can eliminate price risk, thus precluding the need for hedging - and hence futures and options contracts - for the countries or regions to which they apply. The European Community's Common Agricultural Policy is an example. However, as these characteristics of the physical commodity market usually affect only part of the world market for a commodity, regionally oriented contracts or contracts oriented at only a segment of world trade are still possible when the volume of trade is large enough.[19]

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[16] Other relevant policies of the government of the country where the exchange is located and policies of the government in the countries of users of the exchanges are discussed in Chapter III.

[17] Administrative measures in the United States have led the CSCE to operate two raw sugar contracts, one for the domestic market and another for international use.

[18] The CSCE tried to solve the problem of regional price differences for coffee by introducing the "Euro-Differential Coffee Futures Contract" in April 1991.

[19] The sugar trade agreement between the countries of the European Community (EC) and the ACP countries, for example, means that sugar exporters from ACP countries do not incur any price risk when they export to EC countries. This has, however, not prevented the trading of futures and options contracts for sugar on a number of exchanges, including CSCE, London Commodity Exchange (LCE), the French MATIF and several Japanese exchanges.

36. Given these characteristics, the potential role of exchange-traded contracts in price formation of many commodities is necessarily limited; other types of price formation mechanisms such as price negotiations in long-term contracts, auctions, intra-firm deals, forward markets and spot or terminal markets will continue to be important.

(2) Conditions relating to price volatility

37. The price volatility of a physical commodity and its corresponding futures contract determine whether the futures market can serve a useful hedging function. A futures contract can only function if there is sufficient short-term volatility in physical market prices for the commodity concerned. Low price volatility in the physical market means little need for hedging, as the costs of hedging would outweigh its benefits in terms of risk reduction. Such may be the case when the price of a commodity is depressed over a long period, as is presently the case for a number of soft commodities. Conversely, futures markets also lose much of their hedging function when the price of the futures contract is too volatile. Excessive short-term volatility in futures market prices may cause the relationship between physical and futures market prices to change very frequently, thus exposing hedgers to large basis risks (the risk that price developments on the futures market and the physical market of relevance for the hedger diverge) and higher transaction costs.

38. The Group of Experts noted that research shows that the existence of futures contracts can reduce the seasonal volatility of commodity prices while short-term price volatility was likely to be increased and long-term price trends by and large unaffected. They reiterated that commodity futures markets were not a means to stabilize or increase domestic or international commodity market prices, as had been envisaged under international commodity agreements or stabilization schemes; rather, they would offer individual participants the possibility to manage the volatility of the commodity market prices to which they were exposed. Excessive volatility of futures prices was recognized as damaging to the reputation of futures markets and as harmful to trade-related market users. However, the Group of Experts agreed that most measures used to reduce futures price volatility, such as increased initial, special or variation margins, had resulted in higher, rather than lower volatility, because they have added costs to futures market participation, forced participants out of the market place and raised bid-ask spreads. Many felt that it was best to let futures markets operate freely - market forces would be the most effective means to bring down excess volatility.

(3) Conditions for futures contracts to be viable price discovery mechanisms

39. The continued and increased use of futures contracts, and related options contracts, by commodity buyers and sellers for hedging and price discovery purposes requires the trading of these contracts to generate price signals that are representative of current and expected supply and demand in the underlying physical market. This link to the physical market also induces use of commodity futures markets by non-trade-related participants such as managed funds and institutional investors seeking to diversify their

investments, as commodity price developments do not usually move in parallel to those in financial markets. If buyers and sellers perceive that price signals from futures contracts are unrelated to their fundamentals then they will not use them and this, in turn, will weaken the link. Buyers' and sellers' confidence in using futures contracts for hedging and price discovery depends on fulfilment of four general conditions, as outlined below. Problems relating to these conditions are discussed in more detail in the remainder of this chapter.

(a) The contracts traded on futures and options exchanges must be in conformity with conditions in the underlying physical market, and limit the possibilities for price distortion. Aspects of this conformity concern, in particular, quality specifications, delivery conditions (timing and location), and option conversion procedures.

(b) Futures and options contracts must be traded on liquid markets, i.e., markets where users can easily find a counterpart to their transactions. As the volume of trade-related business alone is not always sufficient to ensure market liquidity, users with non-trade-related interests are needed. On the other hand, futures and options contracts are representative price discovery mechanisms only if participation in the commodity exchange is balanced. This means that non-trade-related market participation should be present but should not dominate trade-related business. The latter should involve a diversity of market participants on both sides of the market.

(c) Futures and options trading must be transparent so as to limit the possibility of market distortions. This requirement includes publicly available information on the structure of market participation, on the activities of groups of participants and on the way an exchange is governed, as well as clear, equitable and well-established rules and regulations for its operation, including treatment of manipulation.

(d) The commodity exchange marketplace needs to be reliable. This is ensured through the clearing house and regulatory system, both of which increase the costs of use of the market and impose conditions on users such as being able to meet financial standards and reporting requirements (the costs which create user-related problems are discussed in detail in chapter III, Section C).

B. Contract specification procedures

40. Over the years, problems with contract terms have arisen. These include most frequently quality specifications and delivery locations. Quality specifications must ensure that the commodity deliverable to the exchange is standard, widely traded and acceptable to the physical market as delivery. If the quality specified in futures and options contracts is lower than the standard quality in trading on the physical market, users of exchanges will be unwilling to take delivery. This will lead to growing stocks and exert a downward pressure on prices. If the specified quality is too high or the range of qualities that can be delivered to the exchange is too narrow, the quantity available for delivery will be low with the result that

cornering the exchange will be easier.[20] In this regard there are differences between perishable and non-perishable commodities: while the futures markets for the latter have seen a continuous upgrading in contract quality specifications, the markets for the former have kept low-quality specifications and so function as a market of last resort.

41. The terms and conditions of contracts must result in a deliverable supply that is not conducive to price manipulation and distortion, i.e., which is tradable at its market value in normal cash marketing channels. While most futures contracts are offset through a financial transaction, the rules of most commodity contracts take into account the possibility of delivery to ensure that the physical and futures markets move in line with one another. Apart from considerations regarding the balance of participation in the trading of a contract (see below), one of the conditions necessary for such a situation is that the warehouse(s) specified for delivery is (are) located close to the market for physical trade. Users of futures exchanges who have to take or make delivery can then respond quickly enough to prevent a single market participant from gaining control over supply or demand.[21]

42. Conversion procedures for option contracts are also important. If a great number of option contracts reach maturity at the same time and the specified period of delivery of the underlying futures is relatively short, pressures on price may arise unrelated to the situation of supply and demand on the physical market.

43. Many of the problems which appeared with contract terms have been resolved, often through intensive contacts between the exchanges and the industry, although there have been considerable time-lags during which many industry participants have found it difficult to use the futures contracts properly.

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[20] Quality specifications have been a frequent source of problems for metals. For example, on the LME all the major base metal contracts have seen at least one quality upgrading, with an older contract with lower quality standards being phased out. The necessity of adapting contract specifications to changing industry standards can be illustrated by the experience of copper producers in the late 1970s. Copper cathodes had become prevalent in physical trade, while copper wirebars remained the standard for the LME copper contract. When there was a short period of oversupply of copper, producers were not able to deliver copper cathodes to the exchange, and had to sell them on the cash market at a large discount. The copper contract has since been adapted, after consultations between LME and the copper industry. Another example of a contract that does not fully fit market conditions is the New York world sugar contract, which is plagued by recurrent backwardation (i.e., prices for spot-month contracts or futures contracts close to expiry are higher than those for futures contracts with a longer period from expiry). This is the result of artificial shortages made possible by the politically motivated exclusion of sugar of Cuban origin for delivery to the exchange, Cuba being the only large raw sugar supplier in the western hemisphere.

[21] In the United States, the Commodity Futures Trading Commission (CFTC) proposed in September 1991 that CBOT change the delivery points for its maize and soyabean futures contracts; due to the declining role of Chicago as a cash market, manipulation had become too easy, hence new delivery points were needed. See CFTC, Kalo A. Hineman delivery issues symposium, Washington, p. 159, September 1991.

These time lags often occur where stocks are at high levels and are related to vested interests of exchange members in existing specifications as the value of their stocks would be affected when these became non-deliverable. Developing new contracts or adapting existing contracts is costly and time-consuming and only a small percentage of proposed contracts or contract modifications are successful. There are several different consultative processes. In the United States, CFTC regulations require exchanges to conform with a set of rules and to take specified procedures before a new contract can be approved or an existing contract modified (including the possibility for all concerned to give their comments after publication of the contract proposal in the Federal Register). In Europe, no formal rules on contract development or modifications exist - exchanges make their decisions independently of any formal supervision, after informal consultations with the industry. The Group of Experts felt that the existing consultative processes were by and large adequate, independent of whether they were formalized in regulations or not. It was noted that consumers often had considerable influence over quality specifications as their standards were usually more inflexible than that of other market participants. The major problem in this area was that use by interested parties, particularly producers, of the consultation procedures was often not sufficient. The Group of Experts felt that producers should try to become more involved in the consultations on proposals for new or modified contracts for their commodities, for example by becoming more vocal in the meetings of exchanges with the industry and, in the case of United States futures exchanges, by commenting on contract proposals published in the Federal Register, for example.

C. The influence of different types of participants

(1) Number, size and type of futures and options market participants

44. A large number of actors can be active, directly or indirectly, on commodity futures exchanges. The partially overlapping categories include producers, consumers, processors, trade houses, independent floor traders, brokerage companies, banks, managed funds, institutional investors, large private investors and firms specialized in arbitrage transactions. Only some of these are members of exchanges; moreover exchange members do not necessarily execute all their transactions themselves, since their actions are often less transparent if part of their buying or selling orders are passed through others (usually independent floor traders).

45. Producers, consumers and processors can be directly active on the exchange and a few such companies are exchange members. However, it is usually not very attractive for producers or consumers to incur the expenses associated with full membership of an exchange and in most cases they deal through trade houses or brokerage firms. If they do not have any client business themselves, operating directly implies that their actions are quite transparent to other participants. Trade houses have traditionally been major players on commodity exchanges as they are exposed on an ongoing basis to price risks associated with their buying and selling activities. The market power of trade houses has increased as the number of trade houses per commodity has declined in recent years. Some major players have disappeared, and a limited number of very large international multi-commodity trade houses now account for the bulk of

commodity trade and have as well a major share in commodity futures and options turnover. Their large role on exchanges can be partially attributed to an expansion in the types of physical trade contracts which make trade houses the intermediaries for the risk management activities of their trade partners, as well as to trading on their own account to hedge on price risks. As trade houses have preferential access to information, and thus may be in a position to anticipate market movements, they also engage in speculative activities, often on their own account. A few have even created their own managed funds.

46. Independent floor traders (locals) are usually only active in one commodity (generally in either futures or options) and provide a major part of intra-day activity on many exchanges, particularly in the United States. Brokerage houses (also called commission houses or futures commission merchants) act basically as intermediaries, working on fixed commissions. Several also run their own managed funds. Many brokerage houses are active on a large number of commodity and financial futures exchanges and stock markets, and undertake related banking activities, often worldwide. Banks also act as brokers, but they have become more important for their OTC-related activities, mainly as major swaps dealers. Banks (and a few trade houses) normally prefer to match swaps back-to-back, but as long as no fully matched deals have been concluded, the price risks inherent in swaps are usually laid off through the use of futures contracts.

47. The Group of Experts, while recognizing that there is often an imbalance in the participation of trade-related parties on commodity futures markets in terms of their numbers and size, felt that this usually reflected the structure of the physical market and did not create serious problems for the functioning of the futures market. They noted that such imbalance could be a normal seasonal phenomenon with, for example, the majority of trade-related interests being sellers in the immediate post-harvest period and buyers in the pre-harvest period. They also noted that use of futures markets was determined by a participant's risk exposure, his level of sophistication and the regulation to which he was subject. This has often meant that traders were the first users, followed by end-users and then, if at all, by producers. The Group of Experts felt that there was a serious problem concerning a lack of understanding of the instruments, as well as of expertise in their use, hindering the possible participation of many buyers and sellers. Moreover, government regulation in the country in which the user was located was often not conducive to the use of commodity futures and options.

48. With respect to the involvement of large trade-related participants, such as multinational commodity processors, the Group of Experts observed that such firms adjusted the size of their transactions to the liquidity prevailing in the specific futures market. This was done because they must always eventually reverse their position, i.e., find a counterparty. This implies that large trade-related participants (whether producers or users of a commodity) rarely abuse the market power they have through the futures market. It was also mentioned that size attracts size so that exchange trading by one relatively large participant can attract the participation of other large participants and thus raise liquidity of the contract. The Group of Experts also addressed the concern that futures trading for some commodities could be imbalanced because of extensive use by many small suppliers who were dependent on that commodity and no, or very

limited, use by large buyers for whom the commodity was a relatively minor input into their processing activities. They reported that the latter group does use the exchange as large buyers make hedging decisions based on the need to maintain their competitiveness rather than on the relative costs of inputs. The Group of Experts pointed out that transactions in one direction by a major visible trade-related participant can initiate a bandwagon effect as others engage on the assumption that such transactions indicate an anticipated change in fundamentals.

49. There are different types of non-trade-related large speculators. The most important are the investment funds, of which there are two sorts: managed funds and institutional investors. Managed funds consist of funds put together by individuals or institutions for the purpose of undertaking futures market operations. They are run by professional money managers. Institutional investors are mainly pension and insurance funds using commodity futures markets with the aim of improving the composition of their investment portfolio.

50. In most commodity futures markets, the role of investment funds is increasing. The large majority of investment fund activity is concentrated in the nearest futures contracts, with most of the remainder in the next maturity. They are scarcely active in the longer contracts and are only starting to engage in the options markets. The size of the individual funds is generally very large compared to the turnover on, in particular, agricultural futures markets, and only the near futures contracts offer a volume in which they find it easy to trade. Investment funds shift easily between financial markets and commodity futures markets as well as among commodity futures markets. Because of their size, such shifting can have a major influence on prices.

51. A related problem arises from the fact that a large majority (over 80 per cent) of investment funds rely on technical analysis systems for their investment decisions. The most important systems used are trend-following. They are all quite similar, in that certain "trigger signals" may cause a massive run into or out of a particular futures market. For example, a commodity price decline which triggers sales by one investment fund would be reinforced by this fund's sales, and thus trigger sales by others, or vice versa. This snowball effect is feared by commercial interests as such transactions do not necessarily reflect any change in fundamentals.

52. The Group of Experts recognized that the increased participation of large non-trade-related participants (investment funds) reflected the desire of these funds to diversify. The effect of this participation was that price formation on commodity markets was influenced by developments in the world economy in general.[22] The activity of funds on commodity exchanges was an extension of the institutionalization of trading on stock and financial markets. The Group of Experts felt that the impact

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[22] This means, for example, that investors in financial markets who need cash for margin payments may be forced to close out their positions in commodities markets or that those withdrawing from financial markets because of problems in that area may flood commodity markets with funds.

of the activity of investment funds on price movements was mainly to add to day-to-day volatility but did not extend to long-term price developments although this aspect needed more study. Some expressed the view that fund activity could contribute to the unpredictability of short-term price movements and render hedging decisions more complicated. The fact that investment funds brought liquidity to markets was seen as attracting increased use by buyers and sellers.[23]

2. Problems of manipulation

53. The Group of Experts agreed that there was a clear conceptual difference between speculation and manipulation. Speculation involves trading based on anticipated future price movements brought about by market forces whereas manipulation involves attempts to move prices in the reverse direction to what the spot market would dictate. They pointed out that for regulators it was often difficult, in practice, to draw the line between these two concepts. They stressed that the activity of speculators on futures exchanges was necessary so as to ensure liquid markets; however, some trade-related entities engaged in large-scale speculation might be tempted into trying to manipulate the market.

54. Most manipulation attempts involve simultaneous transactions on the physical and the futures markets. Manipulation is possible whenever one entity acquires excessive control over demand or supply and when other suppliers or users cannot respond quickly enough to deliver or receive quantities in a specific location within the specified time. The ease with which trading in a commodity futures contract can be manipulated depends partially upon the delivery terms specified for that futures contract. Manipulation is easier the more restrictive the limitations upon acceptable grades, origins, delivery points and alternative delivery procedures, the tighter the delivery times and the shorter the period of notice before delivery upon expiry of the contract.

55. The Group of Experts, while recognizing that the existence of manipulation attempts, which were mainly focused on spot month contracts, caused market disruption and hurt certain users, felt that the efficiency of the price discovery mechanism usually was not severely affected. They noted that most market participants, especially participants using the markets for price fixing, could usually avoid becoming victims of manipulation attempts by being especially careful in their trading strategy, in particular in terms of any activity in the spot month, as well as by scrutinizing whether price movements were justified by fundamentals.

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[23] If the trade in a futures contract for a certain contract month is liquid, those wishing to buy or sell can trade easily at little cost - that is, the difference between the price paid for a contract and the price that it would fetch when sold (the bid-ask spread) is minimal. If the trade in such a futures contract is not liquid, manipulation of prices is easier. Transaction costs then include a high bid-ask spread and, as there is little competition, prices offered may not reflect economic realities. Markets that are liquid can easily absorb large offers without prices being unduly affected; in a market that is not liquid, large-scale hedgers have to space their transactions carefully to prevent unnecessary losses.

56. The Group of Experts also felt that, in general, manipulation was not a deterrent to participation in the market by buyers and sellers of commodities who had some exposure to the workings of the market. In most cases manipulation attempts did not succeed. However, manipulation was often perceived by potential new users as an important problem.

57. All exchanges and regulatory authorities have established methods and rules to detect and punish manipulation. However, these have sometimes not been viewed as equitable by market users, some of whom remain sceptical about the consistency and fairness of the application of the rules. One reason advanced for this was that manipulation attempts have not been treated uniformly: treatment depended both on which exchange was involved and on which user of the exchange was attempting manipulation. This concerned the regulatory rules to which the exchange was subject, the efficiency of its monitoring system and the composition of its supervisory committee. Particular problems arose when the firm attempting to manipulate the market was an important member of the exchange or when there was a conflict of interest between the trading activities of a firm and its role on the committee dealing with a manipulation attempt. So as to maintain confidence in the market it was essential that there be clear and equitable rules allowing no preferential treatment while penalties and enforcement of proper contract execution had to be well-defined, strong, fair and transparent.

(3) Regulatory conditions affecting the role of different types of participants

58. The role of regulation of futures and options markets is to ensure openly competitive, transparent, efficient and liquid markets through a framework of binding rules. As the original purpose of commodity exchanges was mainly to develop an efficient hedging mechanism for physical trade, regulation was designed to protect the interests of traders, producers, processors, and consumers using the exchanges for trade-related reasons. Another objective of regulation, especially in the United States of America and the United Kingdom, is to protect small private investors from fraud. More recently, regulators have also taken into account the needs of large institutional investors. While the existence of a clearing house and a regulatory system ensures reliability of an exchange, this raises the cost of, and puts conditions on, use of the market. Regulators face the problem of choosing the "right level" of regulation: too much regulation would raise costs to the point where it would erode participation in the futures and options markets (speculators would prefer trading in stock markets and physical trade interests would be tempted not to hedge price risks); too little would allow fraud and manipulation to occur and discourage confidence and participation in the markets.

59. Various levels of regulation of futures and options markets usually exist. First, regulation by the exchanges themselves is used to guarantee financially safe and fair trading as well as market credibility and integrity on a day-to-day basis. Secondly, different forms of government regulatory mechanisms

installed in countries where futures and options markets are located are aimed at ensuring the orderly functioning and reliability of the markets in general. On a third level, the government determines the tax reatment of hedging transactions.[24]

60. The structure of exchange committees determines who decides the rules for exchange operations. Usually committee members drawn from the membership of an exchange. The cost of membership directly influences who decides on contract specification, rules and by-laws. The membership of most major exchanges has changed considerably over the last few years because of two developments. First, the number of members has declined because of an erosion of commission fees, which has made it less costly to trade through brokers and thus less attractive to be an exchange member oneself. Secondly, participation in commodity trade has changed from specialist traders to financial intermediaries, leading to a decline in the number of trade houses that are members of exchanges. At the same time, there has been an increase in the membership of brokerage firms and banks. The structure of exchange committees can also have a bearing on the perception of users about the equity of exchange rules. If, for example, no producer is represented on an exchange committee, the administration of the exchange may not take producer interests sufficiently into account; because of their role in the price discovery process, exchanges have substantial implications for the financial situation of producers.

61. Exchanges in the United States have been required by the Futures Trading Practices Act 1992 to have a specific minimum representation of farmers, producers, traders, and exporters on exchange committees as well as representatives from outside with expertise in futures trading or other eminent qualifications making such persons capable of contributing to board deliberations. The rules on avoiding conflicts of interest have also been strengthened: a member of a committee or board of an exchange must abstain from voting on any matter if he has a direct financial interest in the subject concerned. In other countries regulators seem not to have set any specific rules with respect to the composition of the board of directors.[25] It appears essential that buyers and sellers should be adequately represented.[26] Developing countries wishing to participate in futures exchange trading should therefore become more vocal in this respect, be it through the trade houses with whom they deal or by becoming exchange members themselves.

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[24] See UNCTAD/COM/16, chapter III, for a more detailed discussion of regulatory issues.

[25] On the LME, for example, the board is composed of elected officials from the ring dealing community but there are no rules concerning its composition.

[26] According to Peter Kooi, president of Cargill's Commodity Marketing Division "... it would be helpful ... if more people with an understanding of the underlying cash markets were involved in the self-regulatory process. The Chicago Board of Trade needs to consider the views of commercial hedgers, and not just write up their comments as a footnote labelled "minority views" in the official minutes. It needs broader representation in the selection and election of CBOT directors. It needs to involve more trade and producer groups in discussions about cash-market conditions and farm and agricultural trade policies that could affect performance of contracts." Quoted in CFTC, ibid, p. 569, September 1991.

62. The level of transparency of exchange trading is determined not only by frequent and wide distribution of information on prices but also by transparency regarding the types of market participants and their activities. All national regulations of exchanges contain rules on reporting on exchange activity including requirements for audit trails, i.e., some procedures for tracking each customer order from placement with the financial intermediary through execution. These reporting requirements ensure that aggregated information on total volume of trading, total quantity of exchanges for physicals, total gross open contracts, and highest and lowest price of offer are usually publicly available. This information helps market participants to assess the degree of liquidity, the extent of non-trade-related business and the prevailing price volatility on a contract. In this context, the Group of Experts stressed that the flow of information needed for trading decisions was best obtained from active involvement in the market, a network of reliable trade contacts for understanding the mood of the market and sound analysis of the information received. This required continuity in trained personnel. They noted that real time information on prices and frequent reporting of stocks, turnover or open interest was available from a number of exchanges through worldwide data vendor systems and that other rapid forms of information distribution services were also being developed. They recognized that there were gaps in coverage globally, that the information provided was not uniform over exchanges and, at times, not at the level of detail needed for making sound hedging decisions.

63. A key problem in the area of reporting requirements is the difficulty of identifying the relative size of major groups of market participants. The Group of Experts noted that information on the structure of participation in futures markets by main categories of users (trade houses, large end-users, brokers, banks and investment funds) was incomplete or opaque. This did not concern distinguishing between hedgers and speculators, as hedgers often also speculate, but rather the functional relationship between users and the commodity traded. These groups had different motivations for trading, different levels of staying power and different trigger levels for their trading decisions. Reporting information on groupings of participants was also a common good - useful to exchanges for their business decisions and useful to those making trading decisions - but such information was often difficult to collect because of private interests of firms. The Group of Experts believed that more work was needed on how to provide adequate public reporting on the structure of exchange participation, in order to bolster the confidence of potential users who are buyers and sellers of commodities, without infringing on a firm's right to privacy, and that ways and means of standardizing improved reporting requirements among commodity exchanges worldwide should be sought.

III. TECHNICAL AND REGULATORY CONDITIONS INFLUENCING THE USE OF COMMODITY EXCHANGES BY BOTH BUYERS AND SELLERS OF COMMODITIES

64. In suitable circumstances, and properly used, futures and options and over-the-counter instruments can provide a welcome means of coping with the price volatility and uncertainty inherent in transactions on many commodity markets, and allow access to capital on better terms than otherwise possible. However, there are many valid reasons why financial instruments of this sort have not been incorporated into the standard armoury of trading techniques employed by producers, consumers, traders and others exposed to commodity price risks. Some of these reasons are linked to the functioning of exchanges - factors discussed in chapter II. Others are more user-related. These reasons are discussed in this chapter.

A. Domestic marketing structure characteristics influencing the use of commodity price risk management instruments

65. Possibilities for producers, consumers and traders to use commodity price risk management instruments are often related to the economic size of the participants and the conditions under which they operate. Small independent farmers or miners are not in a position to make use of risk management instruments offered by international commodity exchanges, being unlikely to have direct access to even a domestic commodity exchange. Such problems would be rare for large producers, processors/consumers or cooperatives.

66. In the case of internationally oriented traders, size and a good track record are definite advantages. Small traders will usually not have a sufficient volume of business to warrant the expenses involved in using futures markets. Brokers will not usually handle futures market operations for unknown traders, except on a pre-paid basis. Moreover these traders will not have access to the over-the-counter risk management market as they are not acceptable counterparties. In this respect, the conditions for use of risk management markets by exporters from developing countries and CIS republics have deteriorated in recent years, with the liberalization and consequent fragmentation of the marketing systems in many countries. Where previously marketing boards or centralized marketing organizations had direct access to commodity exchanges, and in many cases had an active risk management strategy (including through forward sales and executable orders), the new, usually small and unexperienced, exporters who have taken over from them are in many cases limited to selling spot. This situation is not expected to change soon: it takes years to build up experience and a good track record. In such cases there is a clear need for action which will allow these exporters easier access to the existing range of commodity marketing instruments. This can take the form of government support or guarantees, and/or of self-organization of exporters into associations or larger firms.

B. Contract specification and basis risks

67. The contracts on developed country commodity futures exchanges have been primarily intended to meet the demands of developed country traders, consumers and producers and thus reflect traditional commodity trade flow patterns. Consequently, contract specifications do not necessarily take into account the needs of companies in other countries, especially in terms of delivery specifications. Of the main commodity contracts, only sugar can be delivered from developing country ports. All other commodity futures contracts specify delivery in a developed country consumer market (United States, Europe or Japan), although this may no longer properly reflect real flows of commodities, with the increasing role of South-South trade. Lack of correlation between supply and demand conditions in one market, and the conditions on the relevant exchange introduces large basis risks, and therefore complicates hedging decisions or makes hedging too risky.

68. Among the potential solutions to these problems is the adaptation of contract specifications (see chapter II, section B.). The Group of Experts of Experts stressed that another solution may lie in the creation of new domestically or regionally based contracts; e.g. for South-East Asian robusta coffee, Turkish cotton, or Pacific shrimps. Such contracts could be traded on new exchanges in developing countries. Apart from providing a new hedging vehicle, such exchanges could offer a number of additional benefits to countries' economies (see Box). The Group of Experts underlined that such new exchanges should be viewed as adding to, rather than replacing, existing exchanges.

C. National regulations and policies

69. Many policy makers, and not just in developing countries, lack familiarity with risk management markets and view them unfavourably. Partly as a result, several regulatory and policy barriers to the use of risk management markets exist at the national level, ranging from outright bans, absence of clear regulation to indirect inhibiting factors.

70. In some cases, the use of risk management instruments is explicitly forbidden.[27] In a number of countries, companies and others are banned from using certain foreign risk management products in the

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[27] In Argentina, the National Grain Board is not allowed to hedge (like the Canadian Grain Board) - hedging is seen as speculation by the lawmakers. In Brazil, until August 1993 companies were not allowed to go into commodity swaps, except through setting up an offshore company. In Colombia, a ban on the use of market-based commodity price risk management instruments was removed only in 1992; in Mexico, since 1992 banks have been allowed to use over-the-counter instruments to hedge their own or clients' risks.

THE DEVELOPMENT OF DOMESTIC AND REGIONAL EXCHANGES

One century after their creation, it appears that commodity exchanges are going through a new expansionary phase. The last few years have seen the creation of many commodity exchanges in countries such as Hungary, Poland and Romania, the CIS republics, and China, while a number of larger developing countries have also created or are considering creating new commodity exchanges.

The Group of Experts found that in many instances a strong case could be made for the development of nationally or regionally oriented exchanges, both for strengthening internal marketing and for supporting international trade. Such exchanges were seen as having a number of economic rationales:

- They would improve price discovery for the local market, improve the internal marketing system, and introduce new risk management facilities;
- They would allow for an easier use of physical stocks for collateralizing loans, thus opening up new sources of finance for domestic producers and exporters;
- They would help to keep trading activity (and related service payments) within the country;
- The could attract international speculative funds to a country, bringing additional capital into its economy;
- They would have valuable spillover effects for the domestic capital markets;
- Markets in time zones where no other futures markets covered the same commodities might prove attractive for international trade houses and others active in commodity markets on a 24-hours basis.

Nevertheless, policy makers should avoid establishing commodity exchanges as a symbol of modernity. In effect, a number of conditions needed to be fulfilled before the development of organized exchanges became feasible:

- The physical spot market in the country or region should be well developed for the underlying commodities;
- There should be sufficient potential liquidity and a sufficiently large number of potential market participants. This implied that the form of involvement of foreign capital should be considered;
- Strong support by the Government and the local business community, especially the commodity production, processing and trading community in terms of using the contract for hedging purposes, is essential. Government support had to be perceived as stable;
- The government policy framework, including in terms of currency controls and trade policy, should be supportive of the functioning of a commodity exchange, and enable the private sector to use this exchange properly.

New exchanges should be developed taking into account the specific situation of the country or group of countries in question; copying the regulation of more advanced countries may result in problems. In cases where the conditions (especially in terms of liquidity and number of participants) for setting up a commodity futures exchange could not be met, it would be easier to consider setting up organized forward exchanges, which offer advantages similar to commodity futures exchanges, that is, price discovery, provision of a hedging mechanism, and credit enhancement.

The Group of Experts believed that electronic trading systems might provide a relatively cheap means of developing domestic exchanges. Such systems could also facilitate the introduction of a network of exchanges in regions where the potential market participation in each of the countries individually would be too small; such regional exchanges are now being considered in Asia and Latin America.

belief that the market where these products are offered does not function well - the authorities thus hope to protect these companies from loss.[28] The sale of options is forbidden in many countries.

71. Government regulations in respect to foreign exchange controls, pricing policies, trade policy and taxation rules have great implications for the viability of using market-based risk management instruments by companies. For example, if access to foreign currency is difficult, foreign commodity exchanges are out of reach. If domestic prices of exports are controlled, the Government takes on most price risks itself; sufficient incentives may not exist for the private sector to manage its risks. If trade policies interfere with the flow of exports, either in terms of price controls or quantitative restrictions, hedging may be impossible. If taxation rules do not properly account for the link between the physical side of a deal and its risk management component, companies risk to pay inordinate taxes. In practical terms, in many countries a lengthy process of discussions between potential users of risk management instruments and different government departments (including the Central Bank, the Ministry of Finance, the tax authorities and the Ministry of Trade) will be necessary before the use of risk management instruments becomes possible. Companies will then have to keep abreast of further developments in their country's regulatory structure in order not to be caught in difficult positions if regulations change.[29]

72. National Governments have a double responsibility in this respect: they have to facilitate an appropriate use of risk management instruments, while limiting their potential for misuse. Such misuse may range from employing risk management instruments to circumvent national taxes or exchange regulations or to engage in uncontrolled speculation. Tax authorities may have a list of risk management operations which are acceptable as valid hedging operations for tax treatment and likewise financial regulators (at the level of the Central Bank or the Ministry of Finance) may specifically list the risk management instruments that national companies are allowed to use.

73. The Group of Experts stressed that Governments should be aware of the costs to market users as a result of frequent and/or unpredictable regulatory changes. This is true for Governments of countries where users are located. Also Governments of countries where exchanges are located have strong and, in effect, often international responsibility to avoid such changes, as these can hurt not only domestic, but also foreign users. The Group of Experts stressed that there was a great need for enhanced information and advice to Governments on regulation-related matters, and for a sharing of experience among

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[28] Such was the case until October 1992 for LME options in the United States: use of these options was banned, except for companies directly active in the production, trade or consumption of the commodity involved. In Japan, the Ministry of Finance had for a long time banned institutional funds from using commodity futures and options; only since mid-1992 have insurance companies been allowed to invest a small part of their portfolio in commodity funds.

[29] This applies equally to all Governments: for example in the United States, changes in trade policy for wheat and tax laws have interfered with the use of futures markets.

Governments. International forums such as UNCTAD and the World Bank held a comparative advantage in this area and hence their related activities should be strengthened.

D. Margin calls and other cash-flow problems

74. A large obstacle to the use of risk-management tools, especially for smaller firms and government institutions, is the need for foreign exchange to meet deposit margins, commissions and margin calls.[30] While margin calls are, apart from foregone interest on the amount of money used, not a cost, in that for hedging operations the size of margin calls should be parallel to that of unrealized profits on physical transactions, they do create a cash-flow problem, because ready access to foreign currency or sufficiently large credit lines is necessary. Many companies in developing country are viewed as being too large a counterpart risk to obtain good credit lines, while their access to foreign currencies may be, in general, restricted by a number of domestic regulations and practices. Further problems may be posed by accounting procedures for recording offshore transactions (especially in the case of a loss on futures trading). All these restrictions influence the possibilities for hedging commodity price risks as well as currency risks - the latter often being at least as important for exporters.[31]

75. The Group of Experts noted that efforts could be made in a number of areas to alleviate this type of problem. First, access to credit lines could be improved, for example, by encouraging the active involvement of the local financial community or by developing locally based warehouses able to issue warehouse receipts as a guarantee for credit lines. Secondly, developing country Governments should be helped in identifying and removing the regulatory barriers faced by their exporters in seeking to use risk management instruments, including access to foreign exchange. A comparison of experience in this regard was called for. Thirdly, providing support to developing country companies through a local or international financing or insurance facility for margin calls merited further study.

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[30] Initial margins are often around 5 to 10 per cent of the value of the underlying commodity. If a country wants to hedge, for instance, sugar exports of 100,000 MT, it would have to deposit an initial margin of around $US 2 million. Margin calls depend on the price movements after one has bought or sold a futures contract; in this example, for every cent that the sugar price increases, the country would have to pay in a margin call of another US$ 2 million, in either cash or securities (in the latter case, one profits from interest payments; nevertheless, many companies seem to pay their margin calls in cash).

[31] To give some examples: companies in the West-African franc CFA zone, with a currency that is, in theory, fully convertible into the French franc, are confronted with the fact that the Central Bank needs up to a week to process a request for currency conversion. In Thailand, exporters need specific permission from the Central Bank every time they want to pay margin calls. In Costa Rica, the Central Bank allows companies to use hard currency reserves only for covering margin calls resulting from the use of futures for a period of up to four months, although many companies prefer to be able to hedge for at least a one-year period.

E. Company organization and control issues

76. Not all companies were equally able to gain access to the use of risk management instruments as the organization costs involved could be considerable. First, prospective users of risk management instruments had to have an unimpeded flow of communication with markets, and an accommodation with exchange trading hours, specifications and delivery rules. The first necessity - an unimpeded flow of communication with markets - often proved too difficult for a company in a country where the means of communication were poorly developed, and where the information services available in developed countries were mainly absent. For example, several companies offering over-the-counter products have withdrawn from the African market because of communication problems.

77. Secondly, companies have to train their personnel, and, as stressed by the Group of Experts, take measures to assure that trained personnel will remain attached to them in a function at least similar to the one for which they were trained. This gives companies an additional benefit in that they can build up a network of contacts in the trading community, and so to improve their trading and pricing decisions. This requires commitment on the part of the company management as well as by the personnel involved. In the case of government companies, with salaries which are often much lower than in the private sector, continuity may be difficult to realize.

78. Thirdly, companies have to adapt their structure to reflect risk management activities, not just in accounting practices but to ensure proper management control over risks. Accountancy systems need to reflect the link between physical activities and risk management activities, allowing speedy, in-depth control of company risk exposure. Risk management activities which have got out of control have cost several developed and developing country companies and institutions very large sums.

79. Certain, in particular larger, developing country companies have already taken steps in this direction. Such a process has been underway over the course of several years following a sequence which led from analysis to trial efforts through actual use of risk management instruments, then gradually expanding the types and volume of instruments used. A number of companies, exchanges and institutions, including UNCTAD and the World Bank, now undertake training activities for prospective users of risk management instruments.[32] However, the need for such training by far exceeds supply. Especially in the area of training for company executives, very little is currently being done. The Group of Experts found that, in particular, training in the areas of accounting and company control systems needed to be strengthened.

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[32] See also TD/B/CN.1/12, "Technical cooperation in the field of commodities: Identification for consideration of areas where technical cooperation should be strengthened", for a description of these activities.

80. The Group of Experts also stressed that, so as to promote greater use of commodity futures and other risk management instruments by both buyers and sellers of commodities, company executives and government policy-makers had to perceive the internal control structures of companies as being sufficiently efficient to prevent large-scale abuse. They urged exchanges, intermediaries (such as brokers) and the international community to help developing country companies with the design of such control structures; they proposed to explore further, as an interim measure, the introduction by exchanges of systems providing an early warning to company management on unauthorized trading by their staff.[33]

F. Commercial, country and sovereign risk factors

81. In general, loans and other transactions with a credit component involve three levels of counterpart risk: commercial risk, country risk and sovereign risk. Commercial risk consists of everyday business risks, which owe nothing to the location of the enterprise. Country risk represents the risk inherent in conducting business in any individual country, such as policy changes, political instability, etc. Sovereign risk, which is the major risk which financial intermediaries have difficulties in measuring, is the assessment of the possibility that a Government will interfere with the honouring of payments by companies within its borders to external counterparts (for example, payments to a lender under a swap agreement).

82. These types of risks not only act as important obstacles to physical trade but also to the use of risk management instruments. In organized markets such as commodity exchanges, counterpart risks are, in theory, insured through an exchange clearing house. However, users often depend on the willingness of an intermediary to provide them with credit lines to meet payment of margins and margin calls, and the risks inherent to provision of credit are not covered by the clearing house. In the over-the-counter market, intermediaries rely on the reputation of their counterparty. When a company is considered a poor counterpart risk, it will have little or no access to credit lines for the use of commodity exchanges, and gain access to the over-the-counter market only when it can put up sufficient guarantees. One problem that arises is that the credit rating of developing country companies (especially of small private exporters which have taken over exporting commodities after liberalization of internal marketing) is difficult to assess, because of limited previous trading history and weak accountancy practices.

83. An additional problem is that, even if a company is viewed as sound with a very good credit rating, the fact that this company is based in a country that is deemed a poor risk may impede access to risk management instruments. For those instruments offered over the counter, banks as well as trade houses have country-specific exposure ceilings which are a function of the perceived sovereign risk in dealing

[33] MATIF, the French futures exchange, now has such a system in place: when transactions by a company which is a member of MATIF surpass a certain maximum risk exposure (initial deposits exceed 20 per cent of the company's capital base), the exchange directly contacts the company's senior management to make sure that they know what is happening.

with the country concerned. For most developing countries, this exposure ceiling may be as little as US$20 million to 100 million. The credit exposure implicit in over-the- counter instruments can be considerable. Over-the-counter deals can be blocked simply because a swap-linked exposure is larger than the country ceiling approved by a credit committee. There are some possibilities to reduce total exposure, such as taking out insurance, obtaining collateral, obtaining control over export proceeds or obtaining guarantees, but these are still rather limited. A number of other actions could be envisaged,[34] but further study of this aspect is clearly needed.

84. Until the high level of sovereign risk is overcome, most enterprises from countries outside developed market economies will not be able to use many of the newer over-the-counter risks management instruments. The Group of Experts found that the problems involved and the search for ways to overcome them merited serious consideration at the international level.

[34] Among others, a number of international organisations is interested in overcoming the problems linked to sovereign risks. The International Finance Corporation, part of the World Bank group, has already interposed itself as a guarantor in a number of currency, interest rate and commodity swaps for developing country companies. The European Bank for Reconstruction and Development, as well as the African Development Bank are reported to be pursuing similar approaches.

CONCLUSION

85. The increasing reliance on market forces to determine international commodity prices requires the transparent and efficient operation of world market price formation mechanisms. In this regard, commodity futures markets have an important role to play. However, the findings show that they do not offer a universally applicable solution. As trading of many commodities is characterized by an oligopolistic or oligopsonistic market structure or a high degree of vertical integration market segmentation due to geography or differing consumer tastes, or such administrative measures as preferential trade agreements or price controls, it is not viable to develop futures contracts for all major commodities. In addition, as the development of a commodity futures contract is a costly and time-consuming procedure, the value and volume of trading of many minor commodities is probably not high enough to make exchange trading in these commodities common. The potential role of exchange-traded contracts in price formation of many commodities is thus necessarily limited; other types of price formation mechanisms such as price negotiations in long-term contracts, auctions, intra-firm deals, forward markets and spot or terminal markets will continue to be important.

86. Even when futures contracts are traded for a commodity, price quotations for these contracts are not necessarily the outcome of an adequate process of price discovery. Several conditions have to be fulfilled in order to ensure that the trading of futures contracts generates price signals reflecting the current and expected supply and demand situation in the underlying physical market. These conditions include a sufficient degree of price volatility in the physical market, appropriate contract specifications regarding grades, origins, delivery points and alternative delivery procedures to restrict market manipulation difficult, a sufficient degree of market liquidity, and exchange regulation that provides for both reliable market places and transparent trading.

87. These conditions are not always met. Commodity futures markets, while by and large serving a useful function, are not yet fully efficient. Among other things, contract specifications do not always meet the needs of a large number of buyers and sellers of commodities. In the domain of market transparency, improvements seem to be required to allow market participation on a more equitable basis. Moreover, the somewhat limited use presently made of risk management markets is partly linked to a lack of confidence on the part of buyers and sellers of commodities in the proper functioning of the exchanges, reflecting, in particular, the frequency and treatment of manipulation attempts and the lack of understanding of influence of investment funds on price formation, and in part the many barriers faced by buyers and sellers when they decide to use these markets. The Group of Experts on Commodity Exchanges convened by the Secretary-General of UNCTAD will be proposing appropriate actions in these areas when they meet in September 1993.