LONDON'S COMMODITY EXCHANGES: AN INTRODUCTION

Graham L. Rees

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LONDON'S COMMODITY EXCHANGES

1. Why Futures Markets Exist: Price Instability

Futures markets organized by Commodity Exchanges - often called Terminal Markets in London, the terms being synonymous - exist, in essence, because of the volatile nature of primary commodity prices.[1] Commodity prices have always exhibited this instability. For example, The Economist index for all non-fuel commodities, which is available continuously since 1860, shows that the largest annual decline in commodity prices - no less than 33 per cent - occurred from 1920 to 1921 (40 per cent from 1920 to 1922). A few years later, starting in 1924, the largest and longest cumulative decline of which we have record took place. This lasted until 1932. During this period, commodity prices fell every year, declining in total by some 47 per cent. More recently, during 1981-82, there was a cumulative price decline of 25 per cent, in itself a fall exceeded only on the two occasions recorded above and during two other periods, viz. from 1864 to 1869 (28 per cent) and from 1951 to 1953 (26 per cent).

When we turn our attention to the period since 1957, we find that from this date to 1971, commodity price instability was relatively subdued, while from that date it increased very markedly. Historically, reference once more to the Economist index of commodity prices reveals that, while the instability for 1911 to 1956 - during which there were three major wars - was almost twice as great as that for 1957 to 1971, the instability from 1972 to 1982 was more than three times as great as

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1. This price instability may be defined as the average percentage deviation of the actual price from the trend for a certain period.

for the comparatively tranquil period of 1957-1971. This last span of years included a phenomenal increase in commodity prices during 1973 and 1974, when the overall index approximately doubled, before plummeting by 19 per cent in 1975. Clearly, this increased instability was connected with "post Bretton-Woods" instabilities in currency markets, interest rates, fluctuations in industrial production and world-wide inflation. However, though the fluctuations in the dollar exchange rate vis-a-vis other major currencies following the dismantling of the Bretton Woods system of stable exchange rates played its part in commodity price fluctuations, the conclusion that commodity prices were significantly less stable during this last period is unaffected when these prices are measured in SDRs, or deflated by the U.N. index of prices of manufactured exports of developed countries, i.e. in real terms. The conclusion is, furthermore, unaffected by whether the instability is measured around a long-term or a medium-term trend.

The increase in instability during the ten years to 1982 was true for all the major commodity groups. The instability around long-term trends was largest - fourfold - for food, among which cereals price fluctuations were greatest. For beverages and agricultural raw materials, price instability about trebled over the period, coffee and cotton being particularly affected. Metal price instability rose only by some 30 per cent.

The prices of primary commodities can, of course, be expected to fluctuate over time and, within broad limits, the price of primary goods taken together in relation to manufactures, manifest a cyclical swing. This is because, in general, they are related quite closely to periods of prosperity and recession in the developed world. The growth in industrial requirements gives rise to an increase in the demand for commodities, thus driving up their prices. These price increases eventually tend, in turn,

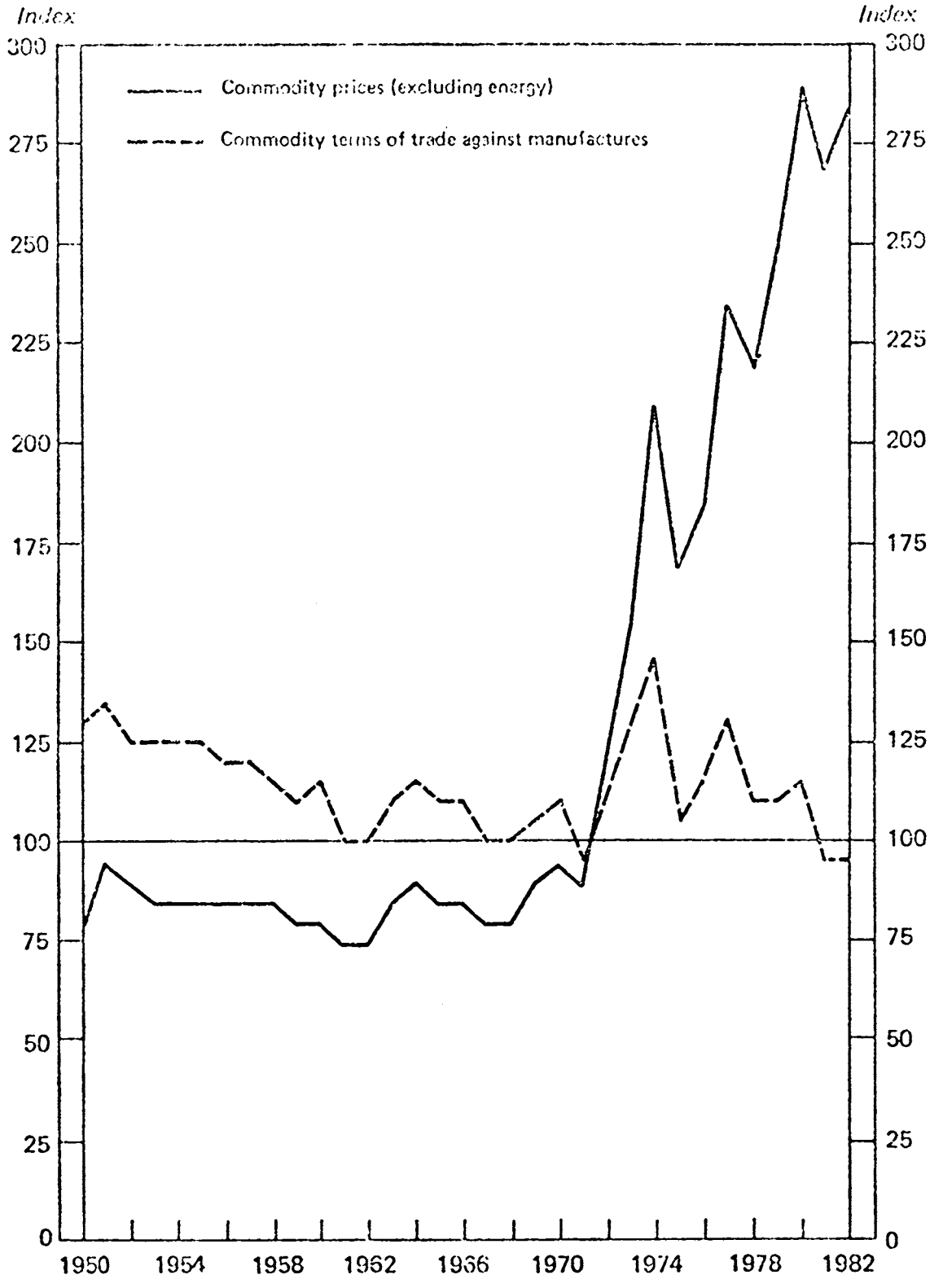
both to check industrial growth and to stimulate the production of primary goods, leading once more to a decline in the prices of the latter. The accompanying chart shows the consequent wave-like changes in the terms of trade between commodity prices and manufactures, reflecting this approximate process of checks and balances (Chart 1) (page 76).

Unfortunately, this process does not make the prices of individual commodities any more predictable, even when we are able to disentangle the different relationship of each of a broad group of commodities to changes in activity in the industrialized world. For example, the supply of many agricultural commodities, such as cocoa, coffee and sugar, respond to changes in their price only after a long period, when additional acreages have been planted. The metals, on the other hand, together with oil and rubber, respond much more quickly to demand changes. A final group, that of the precious metals, has no fixed pattern of price movements because the demand for them stems mainly from their role as alternative means of holding assets. Even this breakdown into commodity groups, fails, however, to result in predictable price changes for commodities, as is best illustrated by Chart 2 (pages 77-78) of the range of annual price changes for selected major commodities. As may be seen, these ranges are mostly very great, as prices over days, weeks and months, are influenced by currency uncertainties, interest-rate changes, crop reports or industrial and political unrest.

It is, then, this marked volatility of prices which is such a feature of commodity trade and the economic reason for the existence of futures markets, upon which traders seek to protect themselves from the losses which price changes may occasion, and on which financial interests - speculators - hope to participate gainfully. In fact, historically, the

CHART 1

Commodity prices and terms of trade,* 1950-1982
(1972 = 100)



UNCTAD Trade & Development Report, 1981.

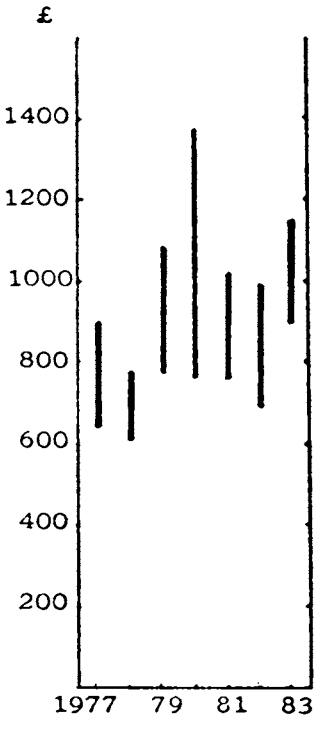
* *Excluding mineral fuels.*

CHART 2

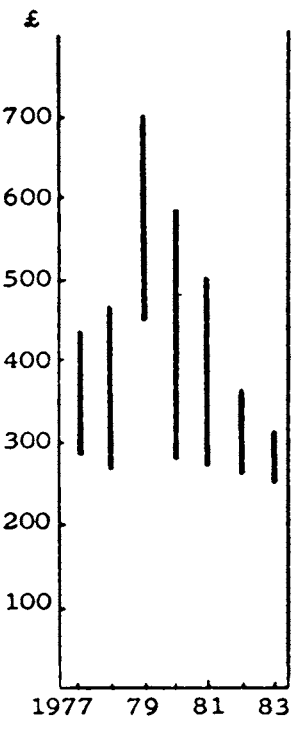
Commodity Price Changes, highest and lowest prices, 1977-83

(per tonne unless otherwise stated)

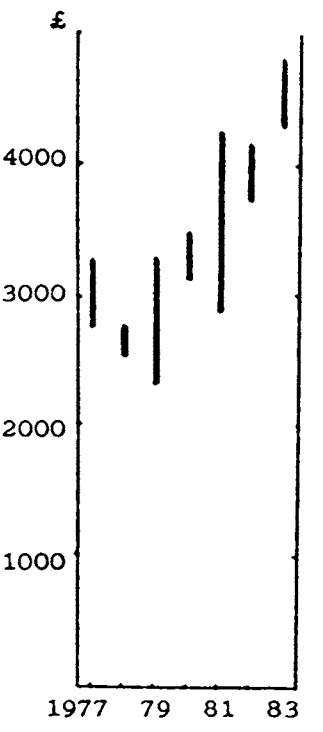
Copper



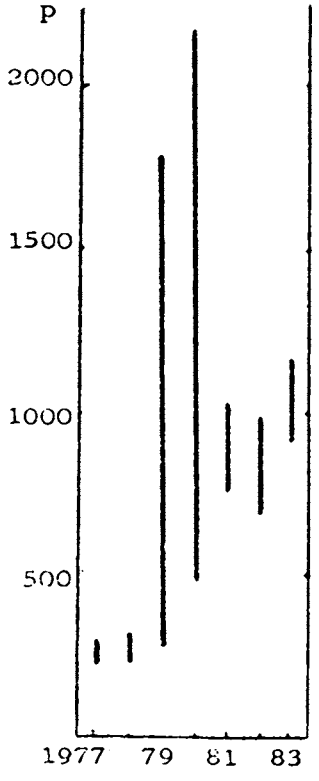
Lead



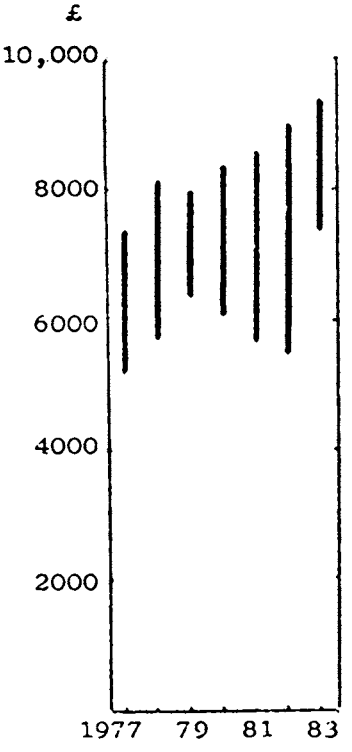
Nickel



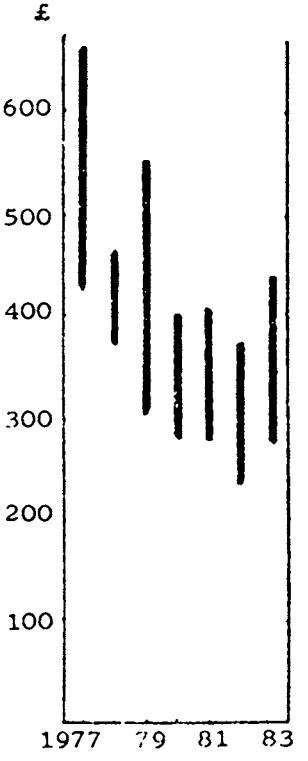
Silver (/oz)



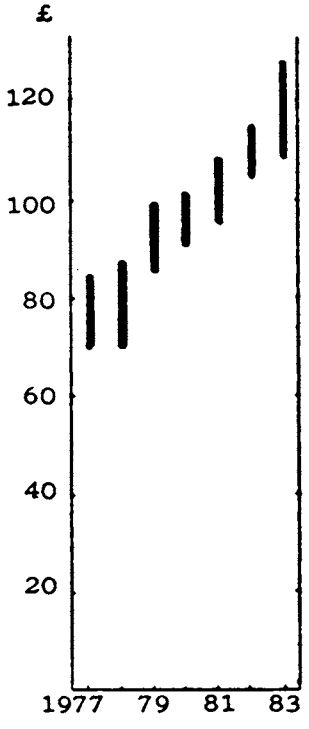
Tin



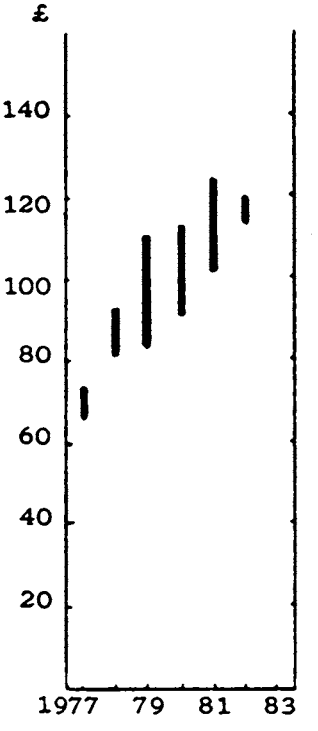
Zinc



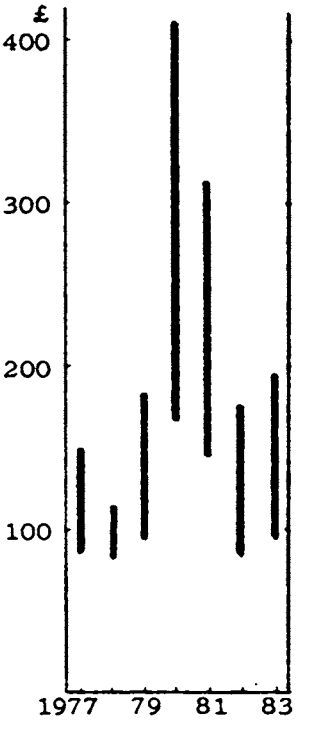
Barley (futures)



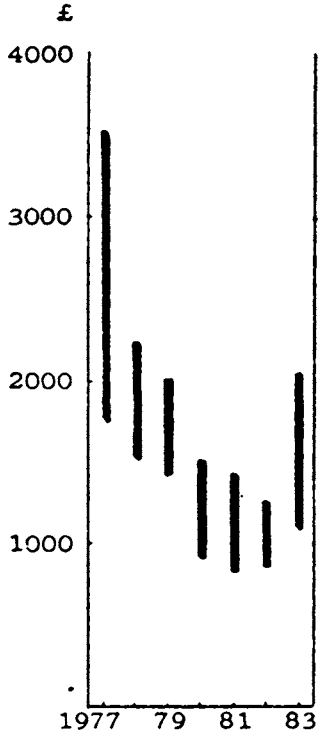
Wheat (American Hard Winter)



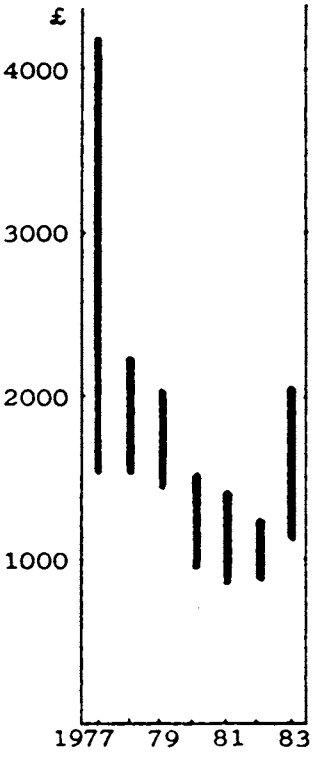
Sugar (Raw)



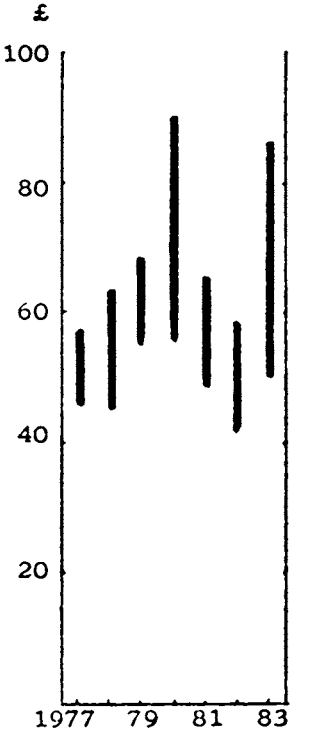
Cocoa



Coffee



Rubber (/kilo)



Source: Financial Times

initial inspiration seems often to have been this latter ambition. Moreover, unless both trade and non-trade interests are present, markets of this sort are not broad enough to flourish. The next stage in the analysis must, therefore, be to examine how traders attempt to safeguard their profit margins and prevent them from turning into losses due to adverse price changes, i.e. we need to know how the markets function.

2. How Market Users Seek to Protect Themselves Against Price Risk

(a) The Development of Forward Trading

Until the nineteenth century was well advanced, the predominant method of sale was of goods "on the spot", that is, which had already arrived in manufacturing or consuming countries. (Such transactions are still called "spot" sales). Most commodities reached the central markets via the following three routes: the consignment of shipments by producers themselves, by commercial banks with an interest in the commodity, or by shipping firms which, for the most part, established their headquarters in the principal market centres. Inevitably, the producer was separated from his market by middlemen since the alternative - not very realistic for most - was to provide the finance, and run the necessary risks, in order to market the commodity himself. In the market centres, stocks were held by market dealers and substantial merchants, while the brokers provided the link between buyers and sellers. For very many commodities this link was at one time between selling and buying broker, with the auction chamber as the venue for purchase and sale.

In earlier times many causes contributed to the predominance of sale after the arrival of the produce. The uncertainties of long-distance transport by sail meant that manufacturers and others needed to have stocks near at hand. The total amounts bought and sold, moreover, were

much smaller than is now the case. In order to establish a market price, under these circumstances, it was necessary to arrange for a good assembly of buyers and clearly, periodic auctions constitute the best method of ensuring this. Finally, public sales (i.e. auctions) continued to be a necessary method of distribution for most produce until accurate systems of grading developed. For raw materials, especially, the demand for reliability in this respect became more insistent with industrialization, for an even-running quality is usually more crucial for machine-production than for more primitive handicrafts.

Obviously, as far as transport was concerned, the most profound revolution occurred with the introduction of the steamship, the electric telegraph, and the opening of the Suez canal. Henceforward, the importer was able to order commodities for forward delivery in the reasonably secure knowledge that they would be delivered on the due date. With concomitant improvements in grading, moreover, he became increasingly confident of getting what he really needed, and so commodity trades evolved from sales by auction to sales by sample of the "lot" or "parcel" of produce concerned, and from that to sales by description based upon standard "type-samples" (as used for example in the rubber trade). Such samples could be appealed to in cases of dispute or else, where this method was inappropriate, to a further method which was developed, and is now widely used. This is the formula "fair average quality" (f.a.q.) which may well vary from season to season. The determination of f.a.q. involves the sampling of the bulk after arrival so as to ensure a standard of comparison in cases of dispute. This method is, for example, widely used in the grain trade. In fact, the effect of the changes detailed above was to eliminate, at an early date, the old system of consignment for spot sale upon arrival, in both the grain and the cotton trade and, in

time, forward trading became more general. (It should be noted that in these trades, such transactions for the delivery of goods at some forward date, is frequently called 'c.i.f. trade'. The term c.i.f., it will be recalled, relates to the inclusion not only of cost, but of insurance and freight also, in the quoted price. It therefore implies the purchase of the produce with the shipping documents as the proof of entitlement to the goods.)

In all trades the rapid and almost continuous links established between producer and consumer countries implied improved market intelligence. The demand and supply pressures thus focussed upon the central market became a more accurate record of the world situation for that commodity. Local shortages were less able than formerly to give rise to substantial price increases when supplies existed elsewhere: news of scarcity and, accordingly, a hardening of prices henceforward resulted in the transmission of this intelligence to producer countries and so, the assurance of additional supplies. Central markets thus became more truly world markets than they had ever been before. Clearly, however, the trader's ability to order confidently from producer countries meant that the merchant's need to hold stocks was reduced. To the extent that this happened, it diminished the importance of the merchant, who tended from this time to be replaced by firms of brokers, and with a consequent shortening in the channel of distribution between producer and consumer. In the sugar trade, for example, the chain of distribution through sugar factors and brokers to manufacturers gave way to the establishment of firms of international brokers, who dealt directly with the producers, selling for them in London and on other markets. Despite the reduction in the stocks which needed to be held at international market centres, however, the ability to absorb and produce supplies according to changes in demand and supply pressures continued to be an essential feature of

these markets. What happened after the introduction of steam and the cable was simply that the function of such markets as "reservoirs" applied, not to the total flow of produce from producer to consumer, but only to that proportion which did not find direct final purchasers. The London Metal Exchange, for example, still performs this function even though only a very small proportion of the world's output of the metals concerned actually passes through this market.

In summary, therefore, apart from the comparatively few commodities sold by auction these days, most produce is now bought on a c.i.f. basis; that is, bought forward, upon description according to trade. Transactions are therefore concerned with contracts in rights to the delivery of a commodity, rather than of the commodity itself, so that the market place can be far removed from the physical commodity. Indeed, the market has increasingly become one in which business is transacted by telephone, cable or telex etc., with brokers in "physicals", i.e. the actual commodity - where these intermediaries are still used - marrying up supply to demand from their offices. Few if any transactions in shipments of grain, for example, are now actually concluded on the floor of the Baltic Exchange. Similarly, provision on the floor of the London Commodity Exchange, where buyers and sellers of actual spices, jute, copra etc. could meet, has now disappeared.

In the meantime, the growth of trade led to an increase in specialization, and this encouraged many firms of brokers to establish Associations for the particular produce in which they specialized. In this way, organizations pertaining to tea, coffee, cocoa, hemp, skins, rubber, shellac, and a host of other commodities were brought into being. (For example, the General Produce Brokers' Association of London was

established in 1876). Thus, whereas previously each firm made its own conditions of sale and held its own auctions, frequently in its own saleroom, the Associations brought uniformity to the trades. Disputes concerning quality, compensation and other matters, which were becoming increasingly troublesome with the growth of trade, were dealt with in accordance with sets of rules devised by these organizations. Standard forms of contract were drawn up, and periodically revised, while arbitration panels were brought into being for settling disputes by reference to the defined standards which have already been alluded to. In brief, then, the functions of the Commodity Associations enabled forward trading (as well as spot transactions) to be reduced to determining a mutually agreeable price, the conditions governing delivery, quality and other pertinent matters having been made uniform throughout each commodity trade by standard contract forms - one of the prime responsibilities of these Associations.

Though it is useful, for purposes of exposition, to consider a "classic" pattern of commodity marketing from producers via shippers to merchants, brokers, and thence to manufacturers and consumers, this process has been much disrupted in a number of commodities, especially since World War I. In some cases, such as those of Canadian and Australian wheat, or West African cocoa, selling agencies have made their appearance. Other commodities, for example, American cotton, or shellac from India, have been affected from time to time by government price support or export-pricing programmes. Producer cartels have been formed (e.g. on more than one occasion in copper) which resulted in the markets being by-passed, though in some cases, despite intervention to fix prices (e.g. O.P.E.C. oil pricing) the distribution has remained in the hands of private firms. Not only do patterns of marketing and distribution vary from the producers' end, but also due to changes on the purchasers' side.

Considerable amalgamations sometimes take place, as for example among U.K. millers, or cotton spinners, which have led to the by-passing of brokers and merchant stock-holders of these commodities, in favour of direct purchases from large shippers, or marketing boards. Finally, as is well known, there has, in other cases, been backward integration to sources of supply (e.g. the development of plantations by Unilever, Tate and Lyle, Brook Bond, Dunlop, etc.) though for political reasons this is now mostly on the decline.

b) Hedging on Forward Markets

In the United Kingdom, futures, or terminal, markets are traditionally associated with goods from overseas. There are historical reasons for this, for when goods travel a considerable distance, this takes time, and whoever owns the produce is then a stockholder at the mercy of price fluctuations. Clearly, however, the commodities need not be afloat in order to constitute a risk of loss, for the same reasoning applies whenever produce has to be stored in warehouses, silos, etc. (American grain futures trading, for example, originated from such considerations). Thus, producers, importers, or others who possess stocks, stand to lose possibly very considerable amounts due to a fall in price. Similarly, on the other side of the market, merchants, manufacturers or others who, without having stocks of a commodity, and having promised to supply at some forward date at a price already fixed, stand to lose from a rise in price by the time they need to buy and deliver.

Producers, stockholding merchants, manufacturers and other traders are in business essentially as traders rather than as speculators. Their problem therefore is how to protect their legitimate profit margins

(remembering that, in the long run, prices must be sufficient to avoid losses, otherwise traders will go out of business and producers likewise, or else they become progressively poorer). Historically, the answer to this problem of protection against adverse price changes lay in the ability of producers and traders to "hedge"; that is, to enter into an offsetting transaction in the forward market. Such protection by hedging could therefore only be contemplated where forward markets had been established - and we have already examined the conditions which needed to be fulfilled for this type of trade to exist. The classic case in the commercial history of the United Kingdom is that of American cotton, and the trader who felt the need to hedge his position most keenly was the importer, "long" of cotton, being the owner of the produce for the six weeks or more during which the shipments made the journey by sailing vessel (while from 1840, samples and orders went via Cunard steamers, which took only about a week to cross the North Atlantic).

In principle, of course, all that any trader had to do in order to hedge on forward markets was to enter into a transaction which offset that which put him at the risk of price movements. Thus, any importer who owned stocks tied up as they would be on-board ship, i.e. who was "long" of the commodity, would hedge by appearing as a "short seller" on the forward market, i.e. would sell contracts to deliver forward at the same time, and therefore for approximately the same price, as his purchases. Suppose the price of cotton fell before he got his cotton to the Liverpool market. Clearly, the straight-forward sale of his produce would result in a loss. However, having also sold for forward delivery some six weeks previously, at the higher price, all he had to do was to deliver his cotton in fulfilment of his contracts to supply. Having both bought and sold at approximately the same price he would not therefore need to fear a price fall. Similarly, for any trader without stocks (i.e. "short" of the

commodity) but committed to supply at a future date at an agreed price. To hedge his commitment, he would need to enter the forward market on the "long" side, i.e. to buy contracts for future delivery at the same time, and therefore for approximately the same price. Without hedging in this way, were prices to rise above the agreed price before he fulfilled his contract to deliver, he would clearly lose on the transaction. As it is, however, he would be covered by the contracts which he had purchased at the same (lower) price at which he had entered into the commitment to supply. His action then would simply be to take delivery of the produce against these contracts, and pass the goods across to the manufacturer or to whoever he had undertaken to supply. It should be noted, incidentally that, in addition to covering himself against risk of loss through price movements in this way, his hedge also has the effect of precluding his making any windfall gains through what would, without his hedging action, have been a favourable price movement.

(c) Shortcomings of Forward Markets

What, then, is amiss in continuing to use forward contracts in this way as a hedging medium? One reason is that operations on forward markets are closely circumscribed by the particular collection of quantities, qualities and delivery dates of available contracts. In brief, a producer or trader, say, seeking a suitable contract, might not be able to match up his risk with suitable cover for it. Forward markets, moreover, do not provide complete security for transactors. (For example, were the price of the produce to fall significantly before delivery, the question arises as to whether the producer or the seller can always be assured of the buyer's integrity. If, for example, the price of the commodity falls before delivery is made, the buyer may attempt to repudiate the

transaction. Again, he may, for example, while wishing to take delivery, have run into financial difficulties in between agreeing to buy and taking delivery. However, perhaps even more serious for the producer selling his crop, for example, is that a crop failure might force him to buy his way out of a forward contract at a loss. The implication, when output risks are considerable, is, then, that forward sales - where they are undertaken at all - have to be limited to a portion only, of the expected output.

Accepting that speculation is necessary in order to broaden the market, the further shortcoming of forward markets is that, being essentially markets in actual produce, it is less easy to operate on them without some expertise in the physical produce. This is very inhibiting to financial interests which therefore makes for a narrower market. Moreover, whereas there is nothing to prevent speculators from buying produce in the hope of a subsequent rise in its price (i.e. "bull" speculation) "short selling", i.e. selling contracts in produce which the seller does not possess, in the hope of a subsequent fall in price (sometimes known as "bear" speculation) is extremely risky on forward markets. This is especially true when commercial stocks of the commodity are not very high. This is because it is easy in these circumstances for other market traders to buy up such stocks as exist in order to create an artificial scarcity which drives the price up, that is, the wrong way for the bear speculators. The bears then have to cover themselves at a loss, while the operators who have imposed the squeeze make profits. There are, however, many examples from earlier times, especially, when those who have "squeezed the bears" have in turn come to grief because the stocks which they needed to buy to impose the squeeze to increase the price, have eventually to be disposed of, which drives the price back down again against them; unless that is, they are very lucky and market conditions

have moved in their favour in the meantime.

(d) Futures Markets

Clearly, then, hedging on cash forward markets (as they are sometimes called) provided - as indeed they continue to provide - valuable benefits to producers and other sellers and buyers, especially since such transactions in the physical commodity enabled the contract terms to be devised so as to suit the producer's and purchaser's exact requirements. These markets can, however, present difficulties for the contracting parties, as already described, which have led, over the years, to the development of futures markets.

In brief, futures markets enable a greater integrity of contracts, and permit widespread accessibility at low cost. This is achieved through the purchase of standard contracts on an organized commodity exchange. It is possible for anyone to enter into a contract on a commodity exchange through the acknowledged channels, and then to offset this when appropriate by entering into an opposite contract. A futures contract is, then, simply a forward contract traded under the rules of an organized commodity exchange, the delivery terms and methods of trading being highly standardized. The contracts are, in other words, promises to deliver a commodity of a stated grade, with an undertaking to deliver at a named location, with specified accompanying services, a unit quantity of a commodity, during a named future period, at a price which has been agreed between buyer and seller. The price is, in fact, the only matter which has to be decided between the buyer's and seller's agents on the trading floor, all other conditions of sale being standardized and therefore not part of the "higgling of the market".

Such a degree of standardization obviously makes the futures markets widely accessible, even to those with little knowledge of the physical commodity. Markets are thus broadened out, it is argued; the speculative interest so engendered making it more effective for hedging purposes. Clearly, therefore, these terminal markets are "paper markets", having perhaps, on first encounter, little to do with the physical processes of growing or mining commodities, storing, processing, and then distributing them. This, however, would be a mistaken view. Financial markets, too, deal in promises (as an examination of say, a tl note will verify!). And like the indispensible instruments traded on financial markets, the crucial element is that futures contracts are in effect saleable to third parties on organized exchanges. However, the very ease with which anyone may enter into the standardized promise which is of the essence of a futures contract, implies a possible shortcoming for the individual transactor. This is that such contracts may quite often not describe exactly the produce which the producer wishes to deliver, or that the buyer wishes to purchase. This is why futures contracts are usually liquidated before maturity; that is, offsetting futures commitments are entered into, to close an "open" position. Futures markets are not, therefore, primarily delivery markets.

Normal hedging action can, however, involve some risk. This is that the price which may have to be paid for a futures contract to liquidate the position, may not correspond to the price for which the seller can sell his physical commodity. This price disparity is known as a "basis risk", which will obviously affect the transactor's return. In seeking to divest himself of price risk, therefore, a producer, for example, has to weigh up the advantages of using the cash forward market against those of the futures market, while considering the disadvantages for his purpose.

By using the forward market he avoids "basis risk" and may find a purchaser who wishes to purchase exactly what he wishes to sell, in terms of time, place and quality. On the other hand, this might prove difficult and, even should such a purchaser be found, the problem arises of ascertaining his creditworthiness. Against this, he has to weigh the far greater integrity which a suitable transaction on the futures market provides, as an accompaniment to concluding a deal in the "actuals" market.

In addition to the use of organized commodity exchanges for purposes of hedging and speculation, the prices established on futures markets are also useful to non-participants in the market. This is because these markets enable the achievement of "price discovery", that is, the determination of prices under competitive conditions, for forward "positions", (i.e. for forward delivery months) up to a year, and sometimes more, ahead. Closing prices are announced by the Exchange authorities each day. Thus, for sugar, for example, during April, prices would be quoted for May, July, September, November, January, March and May. This "price discovery" function of the terminal markets facilitates the scope for "pricing options", i.e. for deferred pricing, a procedure whereby buyers may select, for physical transactions in many commodities, a particular day on which the price is fixed by a formula after the contract has been entered into. Formulas of this sort are often based upon futures market prices, being priced at so many points premium above the relevant futures position to allow for the various transactions costs associated with the sale of the physical commodity.

3. Market Organization

Each market in a commodity exchange is organized by a Terminal Market (i.e. Futures Market) Association of elected members and paid officials, for each of the "soft" commodities (i.e. non-metal commodities) while the London Metal Exchange (L.M.E.) has its own Committee responsible for the conduct of business. One of the main issues for all these bodies must, clearly, be the suitability of the contract. A futures contract must, as previously mentioned, be highly standardized, and transactions in it have to be closely circumscribed by various rules and safeguards. Thus, the contract must not be exclusively for one quality or grade of a commodity, but, rather, what is known as a "basis" contract which permits delivery of qualities other than the standard grade, at an appropriate premium or discount. It is also devised, when appropriate, so as to cover a range of places for possible delivery and considerable latitude as far as period of delivery is concerned; usually a delivery month, except for L.M.E. contracts.

Such considerations are obviously important because futures markets are highly developed and dependent on specialized trading procedures, and so subject to abuses. The prevention of difficulties, such as "corners" and "squeezes" should there be an artificially contrived scarcity of supply is obviously an important issue. The right to tender the actual commodity, or to demand it in fulfilment of a futures contract, is - as it must be - a feature of every futures market, since it is by this means that the price of "actuals" and of futures are kept in an appropriate approximate relationship with each other. This right to tender the actual commodity in fulfilment of a futures contract, or to demand delivery, may create some difficulties, as has already been mentioned. It is, however, one of the functions of the market clearing

system to arrange for the disposal of such tenders, should the brokers acting for their clients not do so. Clearly, then, the committees of the Associations responsible for each market, which draw up contracts and deal with grading issues, are essential to organized commodity exchanges, as are their arbitration panels which settle disputes as to the quality of the commodity tendered, and so forth.

The market Associations are also responsible for the regulation of admission to the exchange floors. The purchase or sale of futures contracts is effected through broker firms who are members of the exchange. Trading on the floor of the exchange is conducted by floor traders who trade for their own account, and by floor brokers who execute orders on behalf of their clients. Bargains are struck by "open outcry" of these floor traders - bidding, counter-bidding and accepting at astonishing speed, often amidst a frantic uproar - around a trading ring (known as a "pit" in Chicago). For the purposes of such trading, numbers have to be limited, and it is the Association concerned which decides upon the floor membership. These "seats" as they are sometimes called, are bought from the organization and are resold by retiring members.

The Associations prescribe the hours of trading, and supervise the "kerb trading" which takes place outside the official market times, whether on or off the floor. Most markets are 'called over" once or twice a day by a chairman or an equivalent controller, hence the term "Call Markets" sometimes used to describe this form of trading. The bargains struck during ring trading are illuminated on a display panel and also available in brokers' offices and further afield on video screens. Thus, information concerning latest prices and quantities sold for each forward position can be perused at a glance both on and off the market floor. As previously remarked, official closing prices, as determined by a sub-

committee of the Association concerned after the market has been "called over", are particularly important and are often widely used, as described, as a guide for pricing transactions in physical commodities.

Even more important is the function of official prices for purposes of market clearing. A clearing process is obviously an essential and integral feature of a futures market. When, exceptionally, a contract is allowed to run to maturity rather than liquidated by traders, the clearing organization, as mentioned, arranges for settlement by delivery of the actual commodity. Other than this, the main function of clearing is to calculate the difference in price of matching purchases and sales to be settled, and to effect such settlements. In essential particulars, all clearing processes operate in this way, for which purpose the announcement of official prices on which these calculations must be based, is evidently essential.

Beyond these features, common to all clearing organizations, two different types of market organization may be distinguished, namely clearing-house markets and principals' markets. As will be explained in more detail in connection with a description of London's terminal markets, the International Commodities Clearing House Ltd. (I.C.C.H.) is the clearing house for transactions in "soft" commodity futures. By contrast, the London Metal Exchange is a principal's market, having implications for the system of clearing, which is a separate one.

It is the practice on clearing-house markets not only for brokers, but also their major clients, to become members of the clearing house. "Original deposits" (called "initial margins" in the U.S.A.) usually of no more than 10 per cent, are required from all clients when they buy or sell

a contract through their floor members. When it is desired to control speculation, however, larger deposits may be required. When prices move adversely for a client, the clearing house will call for a "variation margin" from him to cover changes in the price of his "open" contracts (i.e. contracts which he has not "closed-out" by means of an offsetting transaction). Should a contract not be kept "fully margined" by the client when these additional margins are required by the clearing house, it is terminated by this body which, if the margins already paid by the client are insufficient to re-imburse the other party to the contract, must itself supplement the outstanding sum. Conversely, when prices move favourably for a client, his margin deposits will be reduced by the amount of his variation margins, though an amount equal to the original deposit will always be retained in case of default. By this method of operation, the clearing house is able effectively to guarantee the performance of the contracts which it clears. These features obviously represent a considerable advance over the use of forward markets as a secure means for both hedging and speculating.

On principals' markets, by contrast, no guarantees against default are provided by the market organization, members themselves being fully responsible for their own contractual obligations. No variation margins are required between ring-dealing members, since each contract is guaranteed by them as principals (though their clients will usually be asked for margin payments). On principals' markets, therefore, entrants are required to provide proof of satisfactory financial standing before acceptance. The number of ring-dealers on such markets has to remain small in order to retain confidence in one another's ability to honour contracts. As already noted, the London Metal Exchange is the best known principals' market, on which the maximum number of dealers is restricted to forty, though at present the actual number is less than this. (Though

it still remains a principals' market, the procedures of the L.M.E. have been modified somewhat of recent years to enable the trading positions of members to be monitored on behalf of the Exchange, by I.C.C.H.).

4. Trading on the Commodity Exchanges

Introduction

There is no straightforward answer to the question "Should I be using the futures markets?" or to that of "How should I best use the futures markets?". As far as individual producers or traders are concerned, the answers will depend upon their outlook. Thus, some may feel that they can best use their particular skills if they are spared the problems which arise from price changes, even if this means that favourable, as well as unfavourable, changes are avoided. Others, by contrast, may view price fluctuations not as a problem to be avoided but as something which can be turned to advantage through accurate anticipation; the latter preferring, in other words, to back their judgement against the market. Even though these may for example be producers or merchants, such individuals then become speculators. Unless they are protected by some other means, in other words, every producer, merchant, manufacturer, etc. who has not hedged his stocks or fixed-price commitments, is arguably - and however unwillingly - a speculator.

There are, of course, a number of sound reasons for not using the futures markets. In the first place, there are some acceptable alternative ways of avoiding price risks, though some will be unable to make use of these. The chief possibility is for a trader to so adjust his commitments and orders as to reduce or eliminate any price risk. An extreme example of such behaviour would be the ability on the part of a merchant to negotiate the purchase and subsequent sale of a parcel of a

commodity so that both prices are tied to the price ruling on a particular day. By so doing, the merchant would be assured of his margin and thus faces no price risk. However, all that has really been accomplished is the transfer of the risk either to his supplier or to his customer. In effect, the merchant will have assumed the role of a broker. A less extreme possibility is evidently that of ensuring that the volume of stocks on which there is a price risk is as small as possible. Unfortunately, it is likely that in both cases the trader will lose much flexibility in operation and this may affect his business adversely.

A further alternative to the use of terminal markets is the adoption of various accounting methods to average out price fluctuations over a long period. In essence, however, these are only book-keeping exercises to spread out price risks, and cannot alter a trader's real cost or competitive position.

Even if a trader is unable to take steps to avoid price risk, it does not necessarily follow that he should make use of the futures markets. Their use carries certain disadvantages and, though their importance will vary in the assessment of different individuals, these may be felt to outweigh the benefits derived from using the markets. The principal disadvantages are as follows:

(a) The pecuniary costs which will be incurred from two sources:

(i) Brokerage charges,

(ii) Original margins and subsequent margin calls.

Though (ii) itself does not represent a true cost, since any amounts deposited are used to offset the final settlement, provision of the necessary capital does, of course, involve a real

cost.

(b) A user of the terminal market will have to carry out a certain amount of research to begin using the market, and to keep abreast of developments, market intelligence, etc., and this in itself constitutes a cost.

(c) Few hedging operations are ever perfect, so it must be accepted that the use of futures will result in incomplete cover. Clearly, the degree of imperfection relative to the risk of price fluctuations will determine the usefulness of the market in a particular case.

It will be evident that (a) and (b) above may be regarded together as the cost and inconvenience of using the futures market, while (c) arises from the imperfections of the market itself. In the case of a particular market user, (a) and (b) are to some extent quantifiable at the outset, but (c) will generally remain uncertain.

Types of Futures Market Operation

(a) Conventional Hedging

This is the type of activity with which any introduction to this subject must be mainly concerned, in addition to which it forms the basis for certain other forms of hedging. As explained above, the essence of conventional hedging is to match every physical commitment with an exactly opposite futures commitment, in the expectation that the parallelism of the two prices will eliminate price risk. The accompanying table shows how this might be achieved. In this example, the spot and futures prices were not equal either at the start or finish of the transaction, but because the basis was the same throughout it constitutes a perfect hedge.

(The "basis", it will be recalled, is the price disparity between the physical and the futures price, which is £5 per tonne in the example in Table 1 on page 99.)

By contrast, Table 2 (page 99) shows a less than perfect hedge, due to the change in basis between the start and finish of the transaction. Though in this case the "imperfect" hedge resulted in a profit of £200, this could equally well have been a loss of £200, so that imperfect hedges should generally be regarded as unfavourable.

(b) Carrying-Charge Hedging

Hedging of this type is appropriate to a market user who holds a commodity for profit. Unlike conventional hedging, which relies for its effectiveness on the parallelism of spot and future prices, the essence of this type of hedging is its reliance on changes in these relative prices. Consider the following examples.

Example 1

Suppose that in, say, October, a grower or a merchant has a stock of some commodity for which the spot price is £50 per tonne. He intends to retain the commodity until January, for which month, the forward futures price is £40 per tonne.

Clearly, the spot price is at a premium to the futures price. (This situation is referred to as a "backwardation", and the basis is referred to as a "risk premium".) It is to be expected that by maturity the two prices will be equal; this may be achieved by a fall in the spot price, by an increase in the futures price, or a combination of both. Suppose

TABLE 1

An Ideal Conventional Hedging Transaction

		Futures Market Transaction	Physical Market Transaction
Month 1			
(i)	Purchase 100 tonnes of the physical commodity at £60 per tonne		£6,000
(ii)	Sell 100 tonnes of futures in the commodity at £65 per tonne	£6,500	
Month 4			
(iii)	Sell 100 tonnes of the physical commodity at £55 per tonne		£5,500
(iv)	Purchase 100 tonnes of futures in the commodity	£6,000	
		+ £500	- £500

TABLE 2

An Imperfect Conventional Hedging Transaction

		Futures Market Transaction	Physical Market Transaction
Month 1			
(i)	Purchase of 100 tonnes of physical commodity at £60 per tonne.		£6,000
(ii)	Sell 100 tonnes of futures in the commodity at £65 per tonne	£6,500	
Month 4			
(iii)	Sell 100 tonnes of the physical commodity at £55 per tonne		£5,500
(iv)	Purchase 100 tonnes of futures in the commodity at £58 per tonne	£5,800	
		+ £700	- £500

that this last possibility prevails. The situation is then as summarized below:

Spot Market		Futures Market	
Stock held on 1st October tonne	£50 per tonne	Futures sold on 1st October	£40 per tonne
Stock sold on 1st January	£45 per tonne	Futures bought on 1st January	£45 per tonne
Loss on spot	£5 per tonne	Loss on Futures	£5 per tonne

Thus, by storing the commodity, the grower or merchant has lost £10 per tonne.

Example 2

If, however, the spot and futures prices in January had been reversed, that is, £40 and £50 per tonne respectively, the situation would have been very different. In this case the futures price is at a premium to the spot price, the difference being referred to as the "carrying charge". Once again it is to be expected that the two prices will equate as maturity approaches, and the situation is as follows:

Spot Market		Futures Market	
Stock held at £40 per tonne		Futures sold at £50 per tonne	
Stock sold at £45 per tonne		Futures bought at £45 per tonne	
Profit on Spot	£5 per tonne	Profit on Futures	£5 per tonne

Net Profit = £10 per tonne

In this example, because the spot-futures basis represented a carrying charge the merchant was assured of a profit, provided that the two prices equated as maturity approached. Note that the profit does not depend upon an increase in the spot price. The same result would have been achieved if the spot price had fallen, provided the spot and futures prices had ended up equal. This is illustrated by the third example.

Example 3

Assume spot price to fall to £35 per tonne.

Spot Market		Futures Market	
Stock held at £40 per tonne		Futures sold at £50 per tonne	
Stock sold at £35 per tonne		Futures bought at £35 per tonne	
Loss on Spot	£5 per tonne	Profit on futures	£15 per tonne

Net Profit + £10 per tonne

It is clear, therefore, that regardless of what happens to absolute prices, it is possible to hedge profitably provided that relative prices are favourable, the profit being equal to the carrying charge when the hedge is placed. Obviously, then, for a grower, trader, or financial institution wishing to store for a profit, the correct course of action is straightforward: if there is a carrying charge basis of sufficient magnitude, the grower or merchant simply needs to store and hedge. Should the carrying charge not be of sufficient size, he - or the organization holding the commodity - would be well-advised to sell.

(c) Operational Hedging

Unlike carrying charge hedging, the essence of operational hedging is

that it is carried out incidentally to some other activity, such as manufacturing, milling, grinding, fermenting etc. It is distinguished by the fact that because each hedge is assumed to be placed and lifted within a fairly short space of time, it should be possible to ignore changes in the basis and hence the undesirable effects which these bring. Because the length of each hedge is short, the absolute price risk will generally be small, and so this alone may be insufficient to explain this type of hedging. Of considerable additional advantage, however, is the fact that such hedging will enable the grower or trader to ignore absolute price levels when making his regular purchases or sales. Instead, he can concentrate on the price of the commodity relative to the futures price. Thus, even if purchases are made at a time of very high absolute prices, a hedge should provide protection against any price decline before the sale of the processed commodity, thereby facilitating regular purchases.

(d) Selective or Discretionary Hedging

As the title suggests, this type of hedging is characterized by its intermittent incidence. The trader, or grower etc., in other words, hedges, or refrains from doing so, according to his view of the market, i.e., his hedging is selective. For example, a grower or fabricator say, who is "long" of a commodity (i.e. who holds stocks) may welcome price changes when the trend is upwards, and will therefore not hedge. But when he anticipates a price fall, he will wish to avoid losses by hedging if no other means - such as a reduction of stocks - are available. Thus, the purpose of this type of hedging is to avoid loss rather than to avoid or reduce risk. Clearly, selective hedging is essentially similar to conventional hedging and will depend for full effectiveness on the parallelism of spot and futures prices.

(e) Anticipatory Hedging

All the futures market activities considered so far have assumed that the trader has some firm (short or long) physical commitment which he wishes to protect. However, circumstances may arise where a trader has no such present commitment but foresees purchase or sales requirements which could most favourably be transacted at current prices. One solution is to enter into a futures contract as a temporary substitute, thus securing the benefits of present prices. An example of this would be a grower (or a selling organization) with a crop yet to be harvested, who feels that present prices are higher than those likely to be obtained at harvest. By means of sales of futures approximately equal to his estimate of the likely harvest, he can "lock-in" to the present price. Once again, this operation obviously depends, for full effectiveness, upon the parallelism of spot and futures prices.

(f) Procurement or Disposal

As will already be clear from the description of the regulations governing the trading of futures contracts, it is possible to use terminal markets to procure or to dispose of physical commodities. All that is required is to enter a futures commitment in the usual way and to omit to "close-out" the contract before maturity. If the transaction involved was the sale of a futures contract, then clearly, it would be necessary to deliver the physical commodity in fulfilment. Conversely for the purchase of a futures contract: failure to "close-out" will result in the tender of the commodity to the holder of the "open" position at the maturity of the contract.

Obviously, growers or traders wishing to dispose of a commodity via the terminal market will be in a much more favourable situation to use

this facility than traders using the market for procurement purposes. This is because, in the case of disposal, delivery can be made of the available grade of the commodity, at the most convenient delivery point (where a choice of points is specified on the official association contract forms). Where the terminal market is used for procurement, therefore, the obverse side of this coin is that a trader may well receive what is for him an inappropriate grade of the commodity in fulfilment of such a "basis" contract. Nevertheless, as previously indicated, procurement and disposal on futures contracts remains an important potential function because it provides the essential link between the physical and futures markets. In addition, to tender or to accept delivery of a physical commodity in fulfilment of a terminal market contract may be a useful possibility which in certain circumstances may prove the most profitable alternative.

How the Futures Markets may be used by Primary Producers

Extractive industries are not affected by the seasons, whereas many crops are harvested so that markets are affected by peaks and troughs of supply. Notwithstanding this, farmers, cooperatives and other marketing institutions can use the futures markets throughout the year. It is, of course, important to realize, particularly because most hedges are imperfect, that the use of the terminal markets will not relieve producers of all uncertainty, but they should enable them to ensure an acceptable minimum price for their crops or other commodities, under market conditions.

Let us consider a harvested crop, firstly in the pre-harvest situation. For a grower (or his cooperative, etc.) to achieve an acceptable return, the crop will have to be sold for a certain minimum price. However, in the absence of a futures market (or forward

contracting) there is no way in which a farmer can be sure of receiving this price. By using the futures market for anticipatory hedging, a minimum (or "target") price can be assured. For example, a grower with a crop in the ground which is expected, say, to yield 500 tonnes, may need to receive a price of £57 per tonne in order to make a satisfactory return. If he, or his agency, knows that in normal circumstances he would be able, at harvest time, to sell his crop for, say, £1.50 per tonne below the prevailing price for September futures - or whatever happens to be the harvest month - then at any time before harvest that the September futures price rises to £58.50 or above, he has only to sell a total of 500 tonnes of futures to ensure the minimum price of £57. If, after he has done this, prices for the new crop fall, the farmer (or agency) can plainly be seen to have acted wisely.

Suppose the price for the new crop falls to £55 per tonne, and the produce is sold at this price. As expected, the futures price also falls, to £56.50, and the futures are bought back at this price when the physical produce is sold. Thus, on the futures transaction he makes £2 per tonne and this, added to the price received for the physical commodity, gives the desired return of £57 per tonne. Should it transpire that, at harvest, spot prices are depressed relative to futures, the farmer has the option of tendering under the futures contract instead of selling on the open market. With a price decline he obviously acted wisely, but what if prices had risen? If the produce had sold at harvest for £60 per tonne, he would have had to buy back the futures at £61.50. This would entail a loss of £3 per tonne on the futures which, subtracted from the physical price, still leaves the desired return of £57 per tonne.

The above example serves to illustrate that, using this simple method

of hedging will only ensure a minimum price; it cannot maximize returns in the sense of ensuring that the best possible price is received, and does not therefore remove all uncertainty.

A modification of the simple hedging procedure is to reverse the original transaction as soon as it appears that prices are rising. In the last example the grower, as soon as he realized that prices were on an upward trend, could have bought back the futures, say at £59.50. This would have meant a loss of £1 per tonne on futures, but when the crop was sold for £60 per tonne the net return would have been £59, i.e. £2 per tonne better than had futures been held until harvest.

While the simple hedge required a certain amount of judgement to decide when to enter the transaction, the use of a policy of reversals requires an even sharper appreciation of price trends. The reversal procedure could, of course, be carried out more than once in response to changes in expectations, but to do so too often leaves the grower acting more like a short-term speculator than a hedger, and may still not result in any particular advantage.

Secondly, we consider the grower's position, or that of the agency which sells his crop, after it has been harvested. The choice here is between selling the produce immediately or storing it for later sale. Normally, this decision will depend on (i) availability of storage facilities, (ii) price expectations, (iii) the grower's liquidity position.

In this situation, conventional hedging of a stored commodity will achieve nothing, except to ensure that the present price is obtained when the produce is eventually sold. Clearly, since some return from storage

is to be expected, this is not acceptable but a satisfactory return can be ensured by embarking on carrying-charge hedging. As an example of this, assume that in September, say, (after the crop has been collected) the spot price is £57 per tonne, and March futures stand at £63. Even if it is known that futures usually close at £1.50 above local prices for this particular grade of the commodity, a return of £4.50 per tonne can still be made by storing the produce until March, provided relative prices behave as expected, and regardless of whether spot prices rise or fall. If this is considered an acceptable return, the produce should be stored and hedged; if not, it may well be best to sell it. Note that hedging of this sort is what economists call satisficing behaviour; a fixed return is guaranteed by foregoing the possibility of a higher - or lower! - return from unhedged spot price changes. A grower seeking to maximize his return on the commodity would have to decide on price trends and use his judgement as to when to sell.

Anticipatory hedging might be employed where produce has to be sold immediately due to lack of storage space or because the cash is needed, but where the grower judges that prices will rise substantially. In this case he may buy futures to replace the physical crop, in anticipation of the rise. Since this holding is not matched by any physical commitment, it serves to illustrate the indistinct nature of the division between hedging and speculation.

Hedging a stored or growing crop may also help improve a grower's liquidity position by making finance more easily available. Offsetting this, however, are the costs of using the market; margins in particular may present problems because with a selling hedge in a rising market they may amount to a considerable sum. An additional difficulty is that when

hedging before harvest, the quantity to be hedged is - within certain limits - uncertain, due to the variability in yields. There is ample evidence that when growers do make use of hedging before harvest in the way suggested (as for example many grain farmers do in North America, Britain and elsewhere) their use of the futures markets is combined with a large element of judgement, so that hedging as such is only actually used when harvest-time price expectations are relatively poor.

Futures Markets' Use by Merchants or Shippers

As is the case with growers, many variations of ways that merchants can use terminal markets exist, but we will deal only with the principal types of transaction.

For merchants, futures market uses will generally be of the conventional or operational hedging type, though there may be some carrying-charge hedging. Essentially, a merchant using the futures market will wish to divest himself of price risk (which may arise in a number of ways) by hedging his commitments. Thus, for example, suppose a merchant agrees to buy forward from a grower, prior to harvest, at a fixed price. This relieves the grower of any price risk, but the merchant, of course, now faces the danger of a fall in price before he can find a buyer, a situation which he overcomes by hedging in futures. If the produce is sold again immediately, the hedge can be lifted, but if not, the hedge will be maintained until the produce is eventually sold.

Conversely, a merchant may agree to supply a commodity, which he does not at the time possess, at a fixed price, in which case he is once again carrying a price risk. As soon as the transaction has been entered into, the merchant can cover his risk by buying futures, which he would normally hold until he has bought the physical commodity with which to honour his

agreement.

In both these cases the merchant has succeeded in divesting himself of price risk (in the one case of a fall, in the other of a rise) so that he could then concern himself with a satisfactory margin by buying and selling at the appropriate differences from the futures price, and watching for changes in the basis.

Going a step further, prices may be explicitly fixed relative to the futures prices, so that customers could be offered the price at which to conclude a transaction.

More generally, merchants may wish to hedge stocks of the commodity which they hold, whether on a short- or long-term basis. If a merchant stores produce specifically to make a profit from storage, he may wish to ensure a satisfactory return by employing carrying-charge hedging. He will then decide whether to store by reference to the basis.

Naturally, the extent to which a particular merchant uses the market will depend on a number of factors, in particular the size and nature of his trade. Thus, for example, a large merchant who typically carries extensive open positions in a physical commodity (i.e. is either "long" or "short" of it) may feel a strong need to hedge, while a small merchant with no large stock or open commitment will suffer little price risk. Again, a merchant may hedge only when he expects a fall in price; he may only partially hedge open positions in the physical produce or, again, seek to adjust his timing in placing and lifting hedges so as to obtain maximum benefit.

In practice many large merchants do make considerable use of terminal markets; indeed, in many trades it is suggested that merchants represent the largest category of users.

In essence, the futures transactions of commodity shippers is similar to that of merchants.

Futures Markets and Processors

Manufacturers and processors, i.e. crushers, millers, grinders, compounders, smelters, fabricators, etc., have available to them, two broad ways of using the markets though, once again, there can be many variations on the basic methods.

Firstly, it is, obviously, desirable to purchase raw commodities for processing at times when prices are low, but at such times supplies are often likely to be difficult to obtain since suppliers will be reluctant to sell if they expect a rally. Under these circumstances, futures may be bought as a temporary substitute for the physical commodity. When supply becomes easier, the commodity can be bought and the futures sold out, with the net result that the purchaser secures the commodity at a lower price. For example, assume that prices generally are depressed, with the physical commodity at £60 per tonne and the "near-month" futures contract at £65, but with supplies difficult to obtain. Futures can be bought at £65 and then sold at some later date when "actuals" (i.e. the physical commodity) are more readily available. Assume that, when this happens, actuals are £63 per tonne and futures are £68. A profit of £3 per tonne will be made on the futures transaction, which will cover the extra £3 per tonne which had to be paid for the physical supplies. Clearly, this type of hedge depends upon the basis remaining constant.

The second type of use provides for the possibility that, after the commodity has been purchased but before it can be processed and resold, prices fall. This will inevitably exert pressure on the final product price, and if it falls, profit margins will, naturally, be reduced. By hedging purchases, either on a regular basis or only when price falls are anticipated, this risk can be avoided.

In practice, there are a number of considerations which will determine the degree to which this type of hedging is utilized, as follows:

(i) Rigidity of the final product price. If this does not fall in the short-term in line with the price of the primary products being utilized, no loss is suffered.

(ii) Volume of primary product held in relation to turnover: the higher the volume of raw materials held, the larger the potential loss.

(iii) Length of the manufacturing process: a long process, with a considerable volume of work in progress, will mean a larger price risk.

Futures Markets' Use by Livestock Rearers

Rearers of livestock not only face a price risk with their finished product, but also with their raw materials, i.e., their feedstuffs. The possibilities of hedging clearly depend upon the availability of terminal markets in both livestock and feedstuffs, matters which will be briefly examined in the next section.

An important consideration for the rearer is that he will be disadvantaged by a fall in the market price of a large stock of feedstuffs, since his animals may have to compete with animals fed at lower cost by rearers who did not carry a large stock and so could benefit from the lower prices. It will be possible, where feedstuffs are related to grain prices, to hedge stocks of the former on grain futures markets. It then becomes a simple matter of lifting the hedge progressively as the feedstuffs are consumed.

An alternative scenario is that the rearer may make purchases over the production cycle, in which case there is a risk that prices may rise and so increase budgeted costs. The strategy to overcome this by means of the use of the futures market is to purchase futures equivalent to total feed requirements for a particular batch of animals, and then to progressively lift the hedge as the feedstuffs are bought.

Finally, futures can be used as a temporary substitute for the physical commodity when prices are low but difficult to obtain.

i. London's Commodity Exchanges

Until the recent past, London's commodity markets were almost entirely concerned with imported goods, many of which at one time served a significant re-export trade. Clearly, this is not a necessary relationship, but in part the outcome of Britain's commercial history, and in part the result of the growth of specialization in exporting manufactures and the consequent need to import food and raw materials. (Many markets in the U.S.A., by contrast, have always been of mainly domestic interest.) However, while history may provide the basic framework for London's commodity exchanges, new developments, some of

which have led to the establishment of entirely new exchanges, have transformed the scene over the past decade or so. We examine these institutions in turn.

(a) The London Commodity Exchange

The commodities grouped under the umbrella of the London Commodity Exchange Co. Ltd. (L.C.E.) stem mainly from the growth, over a very long period, of a wide variety of tropical and semi-tropical produce. In time, some of these trades, for reasons adumbrated above, developed futures markets. At present the most important of these are sugar, cocoa, coffee, wool and rubber, with vegetable oils having a more chequered history. These markets are organized by their respective trade associations, namely:-

The Coffee Terminal Market Association of London Ltd.

The London Cocoa Terminal Market Association Ltd.

The London Rubber Terminal Market Association Ltd.

The London Vegetable Oil Terminal Market Association Ltd.

The United Sugar Terminal Market Association Ltd.

The London and New Zealand Futures Association Ltd.

The last-named Association supervises a crossbred wool contract set up jointly by the London Wool Terminal Market Association and the New Zealand Crossbred Wool Terminal Market Association. (At the time of writing, however, some difficulties are emerging in this interesting joint-venture.)

Other semi-tropical imports do not have terminal markets, but transactions are concluded, usually by means of c.i.f. contracts, drawn up

by such bodies as the General Produce Brokers' Association. Tea is, of course, very much a separate market, though - despite a number of proposals from time to time - it has no futures market. Both private and public sales (i.e. auctions) come under the surveillance of the Tea Brokers' Association which, together with the offices of some of the brokers and dealers etc., and the auction chamber, are housed separately at Sir John Lyon House, in Upper Thames Street. The London Commodity Exchange Co., many member brokers' and dealers' offices, and the trading-rings for the commodities already mentioned, are situated in Cereal House, Mark Lane, in the City.

The International Petroleum Exchange (I.P.E.) came into being as recently as 1981 as, with the onset of recession and increased output from non-member countries, the Organization of Petroleum Exporting Countries (O.P.E.C.) found it more difficult to dictate world oil prices. The use of producer contracts has consequently diminished dramatically in importance in favour of a far greater use, these days, of the Rotterdam spot market, on which prices fluctuate unpredictably. Though the I.P.E. is called an exchange, it actually operates under the aegis of the L.C.E. Its trading-rings (because more than one type of contract is traded) are situated at Dunster House, Mark Lane, across the road from Cereal House.

(b) The Baltic Exchange

As the nineteenth century progressed, and Britain became increasingly dependent upon imports of basic foodstuffs, London grain and shipping interests forsook their coffee house origins to amalgamate as The Baltic Mercantile and Shipping Exchange Co. Ltd. - popularly known simply as "The Baltic" - built at St. Mary Axe in 1902.

At present, this very large Edwardian exchange-floor houses futures

markets for E.E.C. barley and wheat, pigmeat, potatoes, soyameal and freight futures. Some of these activities are organized by the Grain and Feed Trade Association (G.A.F.T.A.) which has offices adjacent to the Exchange itself. Recently, however, a separate Meat Futures Exchange was brought into being to administer both the pigmeat (carcase) contract and a more recent live-pig futures contract. (The contract unit for the latter, i.e. the "lot", is for 50 pigs of 65 kg. average weight.) Meanwhile, plans are afoot to establish a contract in beef sides.

Thus, whereas the G.A.F.T.A. Futures Association is responsible for the grain contracts, The Soyabean Meal Futures Association and The London Potato Futures Association oversee the contracts in the other commodities. The genesis of the soyabean-meal contract owes not a little to Britain's membership of the E.E.C. and the peculiarities of this organization's Common Agricultural Policy (C.A.P.), the U.S. Government's intervention policies and, of course, the vagaries of the weather. It was this last cause, also, which gave rise to potato futures trading on The Baltic, following the U.K. drought of 1975 and 1976, together with the abnormally severe winter of 1981-82. Potato processing has, too, become an increasingly important industry in the United Kingdom.

Shipping freight transactions have a long history associated with The Baltic, and even ships themselves are, from time to time, bought and sold there. In addition to being a pre-eminent market for marrying-up cargoes with cargo-space availability, since World War II the air-freight market established there has become increasingly important. However, perhaps the most interesting development of all has been the very recent inauguration of the Baltic International Freight Futures Exchange (to be known as Biffex) which has announced the commencement of trade in a freight futures contract from May 1985.

Biffex is interesting in a number of respects, not least because it is the fruit of cooperation from a number of quarters. Bargains - by traditional "open outcry" - are to be concluded on the basis of a Freight Futures Index, the property of The Baltic Exchange itself. The London Commodity Exchange has provided advice from the wide experience of its members; G.A.F.T.A. for its part advised from the standpoint of the commodities handled by it (and which constitute so much of the bulk cargo business) while the International Commodities Clearing House has agreed to act as market clearer - thus adding a further futures market to its clientele. (I.C.C.H. provides clearing facilities for all the London futures markets with the exception of grain futures and the London Metal Exchange. In addition, it has associated companies serving futures exchanges in Hong Kong, Kuala Lumpur, Paris and Sydney.)

The Baltic International Freight Futures Exchange is not unique in employing an index as the basis for transactions, since this is also a feature of some financial futures contracts, as we shall have occasion to remark below. It has, however, taken considerable ingenuity to develop as a useful instrument for present purposes, for the index has been calculated from 13 individually weighted dry bulk-cargo voyages, chosen for their representative character. (The actual or estimated rates for every voyage are supplied by each of eight shipbrokers daily.) Should the contract prove a success, futures contracts for tankers and other freight rates will almost certainly follow. The 30 floor members will trade by buying and selling the index, with premiums or discounts reflecting market expectations of whether the Baltic Freight Index (B.F.I.) will rise or fall from the current spot level. Contract units are for up to two years ahead, with four delivery months annually. The index will also be used,

obviously, to calculate cash payments due on any outstanding contracts to buy or sell that have not been closed-out by the four settlement dates each year when the monthly positions quoted expire. This is only expected to happen infrequently, since the purpose is to provide a hedging medium against adverse changes in freight rates. However, since any futures contract has to have the facility either for physical delivery or an equivalent cash settlement, the Index is vital in providing a basis for cash settlement (since freight rates are obviously not deliverable!).

(c) The London Metal Exchange

As domestic non-ferrous metal ore supplies were depleted in Britain with the progress of industrialization, more especially because of the increasingly voracious demands of the "new technologies" of electricity and the internal combustion engine, so U.K. imports grew. The London Metal Exchange, dealing (with some variations over the years) mainly in copper, tin, lead and zinc became correspondingly more important as traders and manufacturers sought to divest themselves of the increased price risk due to overseas supply uncertainties.

Following its release from the control exercised by the U.S. Treasury over silver during the 1960s, a silver contract was introduced on the London Metal Exchange (L.M.E.) in 1968. More recently still, the growing importance of aluminium and nickel and the increase in the volatility of their prices led to the introduction of contracts in these metals on the L.M.E. in 1978 and 1979 respectively. However, despite much opposition to the introduction of the aluminium contract, it has flourished and is now the second most important metal on the Exchange (after copper) in terms of turnover.

Following the pressures which resulted in the abandonment of a fixed

price for gold by the end of the 1960s, and the abandonment of the Bretton Woods exchange-rate arrangements a few years later, transactions in this metal have been subject to considerable risk due to price fluctuations. Accordingly, a joint venture was set up between London gold bullion interests and the L.M.E., to establish a London Gold Futures Market, with a contract traded on the floor of the L.M.E. Unhappily, however, the contract has not found favour, as the result of which negotiations are in train at the time of writing to wind up this market.

Of the commodity markets in London, the Metal Exchange is probably the best known, and the most international. As already remarked, it is a principals' market, with no clearing house as such, though I.C.C.H. these days monitors transactions. It is, moreover, used as a procurement and delivery market to a greater extent than the other London exchanges, an activity more acceptable to participants than would be the case for most "soft" commodities because grades of the physical commodity tend to be fewer in number, making delivery more acceptable.

After very many years at Whittington Avenue, the London Metal Exchange is, these days, housed at Plantation House in Mincing Lane. This is a commodity trading centre originally built for rubber trade interests in the 1930s and which became, for some years after World War II, the scene of the activities of the London Commodity Exchange markets.

(d) Options, Currency Risks and the London Markets

Options are a form of trading which the commodity markets have in common with The Stock Exchange and - from June 1985 - the London International Financial Futures Exchange (L.I.F.F.E.), though this type of bargain has so far remained a minor feature of the commodity scene.

The traditional option contract - and they are still sometimes referred to by the older description as "privileges" - have a very long history indeed. An option confers the right, i.e. the privilege, (but not the obligation) to the buyer to buy or to sell (i.e., to "call" or to "put") the underlying commodity at a price agreed when the bargain is struck, within a specified time limit. For a small premium, the producer, merchant, etc., can lay-off a risk or else speculate on market movements. Let us suppose that a producer who is "long" of a commodity, has straightforwardly hedged the risk of a price fall by selling futures. He can, in addition, grant (i.e. "write") an option which will allow the purchaser, in return for a premium, to "call" the commodity (i.e. to purchase it), at the previously agreed price. The "writer" of the option gains the premium paid to him for the option whether the option contract is abandoned by the purchaser or, alternatively, the seller is called upon to deliver either a futures contract or the physical commodity against it. A trader who purchases an option does so in the knowledge that the premium represents the extent of his possible loss. An option to "put" or to "call" thus acts as an insurance at times when future commodity prices are particularly hard to discern. In London, the traditional type of option contract has long been available for all the soft commodities, with I.C.C.H. both guaranteeing and clearing the contracts.

It is exchange-traded options which are comparatively new. The notion of a traded option in a financial instrument, having been established in the U.S.A. during the 1970s, then crossed the Atlantic and was introduced on The London Stock Exchange in connection with transactions in shares. By this time, however, it has been extended to cover bonds, precious metals, stock indices and foreign currencies. Traded commodity options were first introduced in the U.S.A. towards the

end of 1982 and, during 1983, the London exchanges made a start with the Raw Sugar contract, followed by option trading in copper. To date, however, this form of activity remains a very minor feature of the markets.

The exchange-traded option is a transferable option, which thus permits the development of a free secondary market. This market then determines the changing value of the contract, according to changes in market conditions, until it expires. With the non-tradeable contract, the purchaser's maximum loss is limited to the buying price of the option. By contrast, when the option is transferable even this loss may be reduced by resale. It is likely that most options will be closed-out by offsetting purchases or sales and this possibility may well, in time, attract considerable additional liquidity into the market, but this is not happening as yet. It is argued that exchange-tradeable options clearly have a very significant attraction for the small investor nervous of additional margin calls when he trades directly in futures contracts.

With the breakdown of the Bretton Woods exchange-rate arrangements during the early 1970s and the floating of the world's leading currencies, the costs and risks of trading internationally in primary commodities has obviously increased. It has, moreover, worked particularly to the disadvantage of producers. Following these changes, it became much more difficult to find some unit in which to quote world commodity prices, and more necessary to cover exchange risks. The cost of laying-off such risks, however, increased with the greater instability in exchange rates as exchange rates became quoted with larger forward spreads, while dealing margins, too, tended to increase. These changes have borne particularly hard upon primary producers if, by selling in many markets they need to

cover exchange risks in a larger number of currencies than purchasers do. Moreover, the tendency is for developing country producers to have less expert representation in the world's main financial centres, thus adding further to their difficulties.

Quite simply, then, in summary, volatility in exchange rates implies that the producer selling on international markets without protection can not be sure as to the returns he will obtain for his produce, while the buyer faces the uncertainty of not knowing precisely what he will be called upon to pay when it comes to buying foreign currency to do so. Both, in other words, need to protect themselves, ideally, against swings in the price of money, as well as of commodities. As ever, the actual scenario is somewhat different from the theoretical picture. In practice, most of the international trade in commodities is invoiced in U.S. dollars, regardless of the currency in which market prices are denominated in individual countries (though there are, of course exceptions, such as tea, and wool). Because of this, commodity prices the world over change to reflect the price in the base currency [1] with, of course, leads and lags, since the process is not perfect. Recent experience suggests very strongly that when currency prices are sufficiently volatile, they dominate other influences which go to determine prices. Thus, on markets around the world, the crucial issue for commodity prices at the time of writing appears to be the likely future exchange-rate of the dollar.

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1. An example serves to illustrate the point. In London, three months copper was about £1,000 a tonne at the start of 1984, and £1,150 per tonne a year later. In March 1985 it peaked at just under £1,300 a tonne and, as sterling appreciated, fell back again to £1,200 by early April. In New York, price movements were almost exactly the reverse of this over the same period. They declined from 65.75 cents a pound when the London prices were rising, and, with the subsequent appreciation of sterling, then recovered to 65 cents a pound.

Traditionally, the method of laying-off currency risks is through the forward exchange market. The commercial banking system provides this service for clients. The banks themselves, in their turn, use the London interbank forward currency market, which is very well developed. However, of recent years even more sophisticated methods of laying-off currency and interest rate risks have become available. The institutions which provide this facility are The Stock Exchange and the London International Financial Futures Exchange (L.I.F.F.E.) which opened in the Royal Exchange in September 1982, having been inspired by the financial futures contracts introduced in the early 1970s by the Chicago Board of Trade and Chicago Mercantile Exchange.[1]

The techniques involved in financial futures trading are essentially similar to those of commodity futures trading. The contracts consist of standardized amounts of a specific financial instrument, for which the parties enter into a simultaneous right and obligation to buy/sell at a price agreed between them. Contract units of £25,000 in the case of the

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1. The London International Financial Futures Exchange is an organized market for which I.C.C.H. provides the clearing. The contracts consist of standardized amounts of financial instruments. There is, for example, a Eurodollar contract (trading units $1 million). A "long-gilt" is also traded, the underlying "commodity" for which is a basket of gilt-edged stocks of between 15 and 20 years to maturity, any one of which is deliverable. Trading is conducted in terms of a notional 20-year stock with a 12 per cent coupon, and £50,000 nominal value. To allow for differences in maturity and coupon from the notional stock, each stock in the "basket" has a "price factor" which, when multiplied by the futures price, gives the quantity required for delivery.

   L.I.F.F.E. and its contracts are evolving rapidly. Thus, for example, a Stock Index Futures has recently been introduced, reminiscent of the Baltic Freight Index described above. Unfortunately, a full discussion of the uses of L.I.F.F.E. takes us far beyond the subject-matter of the present study.

currency contract, with standardized maturity dates, means that they are readily tradeable and hence highly liquid. A currency futures market is - as is true for commodities - thus more sophisticated than a forward market, the forward contracts on which can not always be readily unwound (i.e. tradeable), since they may be for any quantity of money and for any date. Cancelling the transaction on a forward market requires agreement with the original contracting party, whereas the standard futures contract can be sold to a buyer other than the one with whom it was first concluded. The upshot of this greater sophistication should, among other things, clearly be keener rates.

All currency contracts, viz. for sterling, deutchmarks, yen and Swiss francs, are expressed in U.S. dollars and, as previously mentioned, much trade in raw commodities is also transacted in dollars. The producer/exporter may, for example, consider that he is taking an unjustifiable risk that his profit margin may be eroded should there be a decline in the price of dollars viz a viz, say, sterling by the time he receives his money. If so, he can hedge his position. Suppose, for example, that an exporter sells commodities for an agreed sum of $300,000 in February, but is nervous about the value of the dollars he is due to be paid in April. With each contract unit at a standard value of £25,000 and a dollar value of $37,500 (£1 = $1.50), he accordingly buys 8 contracts, with a sequence as follows:

Cash Market	Futures Market
10 February	
Commodity exporter sells goods for an agreed sum of $300,000. Spot Exchange rate is £1 = $1.50 Sterling equivalent = £200,000	Buys eight 4 June sterling futures at £1 = $1.50 for a cost of $300,000 = £200,000.
10 April	
Exporter receives $300,000 Exchange rate £1 = $1.45 Sterling equivalent = £206,896	Sells eight 4 June sterling futures at £1 = $1.45 for $290,000, i.e. a loss of $10,000, or
Gain = £6,896	Loss = £6,896

As will be evident from this example, his fears were not realized, for the dollar hardened against sterling between February and April, from £1 = $1.50 to £1 = $1.45. Thus, with his $300,000 he makes a gain on the cash sale, of £6,896. This, in the usual way, is offset by a loss (of £6,896) on the futures market. In the example, the hedge is a perfect one, so that his final position is one of zero gain (or loss) but he has safeguarded his margin on the physical trade. As will be recalled, an imperfect hedge owing to a change in basis results in either some residual gain or loss on a hedge.

In the summer of 1985, L.I.F.F.E. hopes to introduce traded options for some financial futures contracts in which it deals, starting with the dollar. (Currency options trading already exists in North America and the Far East.) Again, the principles of operation are identical with the traded options in commodities already described. For a small premium - much less of course than the cost of the underlying financial commodity (i.e. the currency involved) - a participant can either divest himself of (most of the) risk involved in fluctuating currencies, or else speculate upon market movements. For this premium, the trader buys the right either to "put" (i.e. to sell) or else to "call" (i.e. to buy) the currency concerned at the exchange-rate agreed when the bargain was entered into. While the investor may lose his premium should he decide that it would be unprofitable to exercise his option, the advantage of protecting himself in this way is that he knows from the outset what his maximum loss can be. On the other hand, should market movements prove profitable for him, he stands to earn possibly several times his outlay on the option premium. In brief, while the downside risk is limited (and more easily quantifiable than the margin requirements of futures contracts) the upside potential is unlimited.

Up to the time of writing, however, currency futures contracts themselves have not been a notable success on L.I.F.F.E. Despite this, it is to face competition from the London Stock Exchange (L.S.E.) from May 16th 1985, when the L.S.E. starts trading on its new Currency Options Market, thus stealing a march over L.I.F.F.E. which is not due to open its currency options market until June 17th (Life Options p.l.c.). Both start with a dollar-sterling contract. It remains to be seen, therefore, whether tradeable currency options will be successful. They appear to be making progress on the Philadelphia Stock Exchange which originated them (in December 1982) and on the International Monetary Market (part of the Chicago Mercantile Exchange). The latter trades a dollar-deutschmark contract, while The European Options Exchange at Amsterdam trades a dollar-guilder contract.

In the meantime, some banks in both London and New York have stepped into the breach by writing currency options for their corporate customers. This is not, of course, the same operation as trade in a standardized contract on an organized market, but has, nevertheless attracted a very considerable demand.[1]

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1. The first banks in this field include Barclays and Hambros, Hill Samuel, Citibank, Lloyds, Bank of America and International Treasury Management (a joint venture between the Hong Kong and Marine Midland banks).

   Like those already described, these options can be either to "put" or to "call". Moreover, a distinction is made between a "European" option and an "American" option. The former generally has a fixed exercise (i.e. expiry) date, whereas the latter can be exercised at any time up to its expiry date. (Banks are prepared to consider writing options over different periods, whereas on the exchanges, contracts are for three, six, or nine months.) These institutions will quote for either "European" or an "American" type of option, as well as for any reasonably widely traded currencies.

   The institutions striking the option bargain must decide where to pitch the strike price, and whether to base it on the spot or forward rate. This will partly depend upon the volatility of the exchange rate, and normally takes into account the risk felt to be involved. The life of the option is another factor in the evaluation, for the longer the option has to expiry, the greater the risk to the writer.

6. Trends and Prospects

(a) International Competition

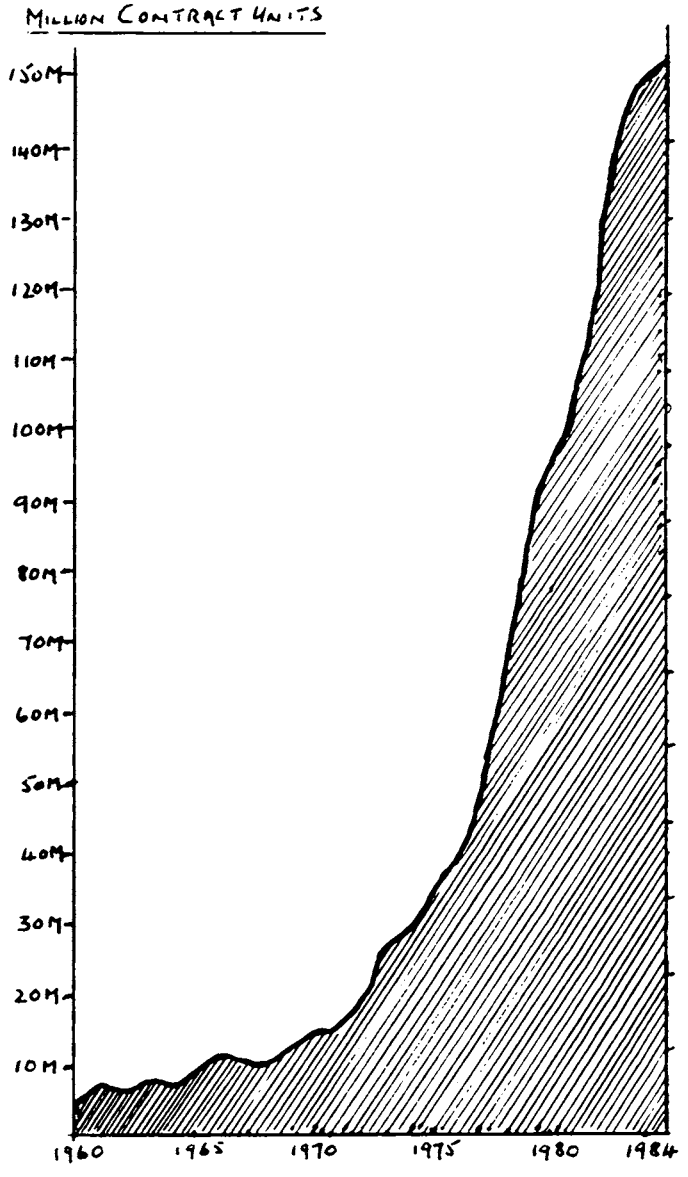
As we indicated in Part 1 of this study, the decade of the 1970s was a period of inflation, of increased exchange-rate and interest-rate instability and commodity price volatility. Because of this growth in uncertainty, business was correspondingly brisk on the world's commodity exchanges, as traders sought to lay-off risks and speculators were attracted towards active markets. The figures on the accompanying tables provide some illustration of the present size of the markets.

During the 1980s, however, the situation has been changing quite rapidly. World trade has been in recession and inflation in all the major trading countries has been reduced to more manageable proportions, though the uncertainties surrounding interest- and exchange-rate movements are as impenetrable as ever. As far as the future of London's exchanges are concerned, clearly, recession is an adverse influence for the level of turnover, with uncertainty playing the opposite role. These, however, are not by any means the only considerations involved for London itself, which has to face considerable competition from other commodity exchanges overseas, notably in North America, but increasingly, too, from the exchanges in Asia and elsewhere. The phenomenal growth of the U.S. markets is indicated in Chart 3 (p.127); Table 3 (pp.128-130) shows the present size of some other overseas exchanges as well as of the London market.

Any detailed examination of the U.S. exchanges would obviously take us far beyond the remit of the present study. Very broad orders of magnitude may however be gleaned from the following figures: in 1983, if we subtract the financial futures - which started much later in London - commodity futures market turnover in London was some 9.2 million "lots" and 88.8 million "lots" on the U.S. exchanges. A detailed examination

CHART 3

VOLUME OF FUTURES TRADING IN THE U.S.A.



Source: Futures Industry Association.

The graph shows a vastly increased rate of growth since c.1970, to reach 149.4million for 1984. The figures include financial futures turnover.

TABLE 3

London Commodity Market Trading Volumes:

Turnover for 1984

(a) L.C.E./G.A.F.T.A./L.G.F.M.

	Lot Size	Lots
Cocoa	10 Tonnes	1,317,706
N.Z. Crossbred Wool	2,500 Kilos	31,720
Robusta Coffee	5 Tonnes	948,117
Gas Oil	100 Tonnes	535,495
Raw Sugar (No. 4 Contract)(1)	50 Tonnes	87,610
Raw Sugar (No. 6 Contract)	50 Tonnes	663,750
White Sugar (No. 5 Contract)	50 Tonnes	16,546
Rubber	15 Tonnes	9,565
Rubber	5 Tonnes	1,687
Potatoes	40 Tonnes	196,581
Soyabean Meal (100 Tonne £ Contract)	100 Tonnes	19,321
Soyabean Meal(2) (U.S. $ Contract)	100 Tonnes	29
Soyabean Meal(3) (20 Tonne £ Contract)	20 Tonnes	27,938
Pigmeat(4) (50 carcases each of 65 Kilos)		24,263
Gold (U.S. $ Contract)	100 oz. Troy	93,266
		3,973,594

Notes: L.C.E. = London Commodity Exchange; GAFTA = Grain and Feed Trade Association; L.G.F.M. = London Gold Futures Market.

(1) Raw Sugar No. 4 Contract expired 30/4/84.

(2) The Soyabean Meal U.S. $100 Tonne Contract expired 22/8/84.

(3) The Soyabean Meal 20 Tonne £ Contract commenced trading 8/5/84.

(4) Pigmeat commenced trading 16/3/84.

(b) L.I.F.F.E.

	Lot Size	Lots
F.T. - S.E. Indicies[1]	£25,000	73,590
3 Month Euro-$ Interest Rate	U.S. $1 million	1,027,269
3 Month Sterling Interest Rate	£250,000	304,831
20 Year Gilt Interest Rate	£50,000	777,722
Sterling Currency	£25,000	146,065
Deutsch Mark Currency	D.M. 125,000	28,425
Swiss Franc Currency	S.Fr. 125,000	12,708
Yen Currency	Yen 12.5 million	11,898
3 Month Sterling Interest Rate[2]	£500,000	37,297
U.S. $ Treasury Bond[3]	U.S. $100,000	168,142
		2,587,947

Notes: L.I.F.F.E. = London International Financial Futures Exchange.
(1) Commenced 3/5/84.
(2) Commenced 26/1/84.
(3) Commenced 21/6/84.

(c) London Metal Exchange

	Lot Size	Lots
Aluminium	25 Tonnes	1,224,881
Copper H.G./W.B.[1]	25 Tonnes	1,303,665
Copper S.C.[2]	25 Tonnes	17,813
Lead	25 Tonnes	537,547
Nickel	6 Tonnes	258,706
Silver	10,000 oz Troy	132,802
Silver	2,000 oz Troy	719
Tin (Standard)	5 Tonnes	218,502
Tin (High Grade)	5 Tonnes	43,219
Zinc (Standard)	25 Tonnes	404,966
Zinc (High Grade)	25 Tonnes	1,584
		4,144,409

(1) H.G. = Higher Grade copper; W.B. = Wire Bars.
S.C. = Standard cathodes.

Overall Total Turnover, 1984, London Terminal Markets	10,705,945

(d) Sydney Futures Exchange

	Lot Size	Lots
Greasy Wool	1,500 Kilos	9,257
Trade Steer	10,000 Kilos	20,788
Gold	50 oz Troy	2,299
90 Day Acceptance Bills	Ans $500,000	172,607
U.S. Dollars	U.S.$100,000	60,131
Fat Lambs	260 live lambs	9
Fat Lambs (Revised Contract)		477
Silver	1,000 oz Troy	1,741
All Ordinary Share Index		237,011
2 Year Treasury Bonds		10,788
10 Year Treasury Bonds		1,917
All Industrial Share Index		123
Metals and Minerals Share Index		228
		517,376

(e) Hong Kong Commodity Exchange

	Lot Size	Lots
Cotton (Contract suspended)	2,500 lbs	
Raw Sugar	50 Tonnes	167,524
Soyabeans	15,000 Kilos	372,352
Gold	100 oz. Troy	5,845
		545,721

(f) Kuala Lumpur Commodity Exchange

	Lot Size	Lots
Palm Oil	25 Tonnes	50,757
Rubber	75 Tonnes	168
Rubber	25 Tonnes	12,507
		63,432

(g) Bermuda International Exchange

Gold	100 Troy oz.	9,695

obviously serves to reveal great differences in relative significance. Thus, the London Metal Exchange is the world's premium market in the non-precious metals, while some of the major London Commodity Exchange contracts in "softs", especially sugar, cocoa and coffee, can still be accounted major markets when comparison is made with their U.S. counterparts. Clearly, the U.S.A., being a much larger country - indeed a sub-continent running through many climatic zones, and with a very high national income per head - inevitably has a greater assortment of markets.(1)

There are "rival" Commodity Exchanges also in other developed countries. The Sydney Greasy Wool Futures Exchange, for example, has now become the Sydney Futures Exchange, trading a wider range of commodities. Thus, in addition to wool, live cattle, silver and fat lambs, gold futures are now traded. The New Zealand Futures Association's responsibility for wool contracts has already been mentioned. The Paris market, on the other hand, trades principally in robusta coffee, cocoa beans and white sugar but remains a very small centre in international terms. (For 1984, for example, the turnover in the three contracts mentioned accounted for only 8.2 per cent of international trading, with London, by comparison, accounting for 25.9 per cent and New York 65.9 per cent.)

Meanwhile, in Asia, new futures contracts continue to make their appearance. Thus, the Singapore International Monetary Exchange (Simex) has introduced financial futures. Gold and rubber futures are already traded in Singapore (though the focus for rubber is now moving to Kuala

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1. Those of international significance (the statistics for which are reported in the world's press) include the following:
New York: Aluminium, Cocoa, Coffee, Copper, Cotton, Crude Oil, Gold, Heating Oil, Orange Juice, Platinum, Silver, Sugar.
Chicago: Live Cattle, Live Hogs, Maize, Pork Bellies, Soyabeans, Soyabean Meal, Soyabean Oil, Wheat.

Lumpur) with talk of opening an Energy Exchange. Meanwhile, as mentioned, The Kuala Lumpur Commodities Exchange trades a rubber contract but owing to defaults the palm oil futures contract has not, at the time of writing, been instituted. It is hoped, nevertheless, to introduce both tin and cocoa futures in the near future. In Hong Kong, the Commodities Exchange has been re-organized and re-named the Hong Kong Futures Exchange, but it has not, at the time of writing, been opened. Financial futures, including currency futures contracts, are planned, with contracts for metals and some agricultural products also mooted.

Japan already has very well developed futures markets in a number of commodities, traded altogether on nineteen exchanges. However, Japan's presence on the world scene is not yet as significant as the number and size of its exchanges would suggest, since the Ministry of International Trade and Industry (M.I.T.I.) has deemed that its terminal markets should be opened to overseas participation only gradually.

Clearly, the picture which emerges even from such a brief description as the present one, is of razor-sharp international competition. London remains a very important centre, aided by the fact that its exchanges are all in one city. The ambition is, moreover, that by the beginning of 1987, all of them will be housed under one roof in a purpose-built edifice near the Tower of London. The other point traditionally made in favour of an optimistic outlook for London's markets is that it is very conveniently situated in the international time zones. It is also argued to be useful to U.S. traders for arbitrage trading. With the advance of information technology, however, these can be argued to be a less crucial factor than formerly, since international exchanges between U.S. exchanges and others other than London are now becoming common, with moves in some cases to

enable cross-clearing of contracts to take place. At the moment, such factors, together with the remarkable burst of innovations of recent years on U.S. Exchanges - especially in financial futures - imply that London can have no grounds for complacency, even though it remains the most important international commodity exchange centre outside the United States.

However, such considerations mainly affect the possibility of "market shares" as between competing exchanges, though the bouyancy of world trade and the extent of the uncertainties which plague traders are obviously influences which, in their different ways, will affect all markets. Can we usefully say anything further concerning changes in general conditions which are likely to modify in any way the attractions of commodity markets and the way in which they conduct their business?

(b) Market Interventions

From time to time interventions have been made in the market which have sought to restrict, or even to prevent, commodity price movements at all. As a result, they can have a major influence on the use made of the commodity markets. Such interferences with the price mechanism may take the form of inter-governmental agreements, i.e. International Commodity Agreements (I.C.A.s); of price fixing by producers (who may, in certain countries be represented by their governments) or, finally, by partial or complete circumvention of the markets by modern variants of bilateral barter, commonly called countertrading.

Most I.C.A.s have as their object a reduction in the exposure to the considerable fluctuations in price to which the exports of primary producers are subject. More ambitiously, such interventions sometimes

aspire to eliminate long-term adverse price trends. At the extreme end of the spectrum, some inter-governmental agreements, in which consumer interests have played little if any part, have sought to raise price significantly above marginal production costs. The OPEC cartel is, obviously, the classic case of this type of agreement.

When there has been some reconciliation of the conflicting interests of producers and consumers - usually after protracted negotiations under the aegis of UNCTAD this past 20 years or so - an I.C.A. has resulted which seeks to limit the range of price fluctuations. The techniques usually involve export limitations, possibly production quota limitations, and sometimes stockpiling. However, if appreciable deviations are permitted from the mid-range price, then clearly, the commodity markets can live with this state of affairs. Even so, success will depend upon the re-negotiation from time to time, of the absolute levels at which the permitted bands of price fluctuation are pitched. For some strategic commodities such as tin, moreover, the markets are rendered more unstable by the unpredictability of the actions of governments, especially those of the U.S. General Services Administration (the G.S.A.) in selling from, or buying for, its stockpile. The same is true of U.S.S.R. and other Eastern-bloc countries' sales (e.g. gold) on Western markets.

The extent to which price has been permitted to fluctuate in past agreements has varied quite considerably. Thus, it has been one of the reasons for the comparative success of the successive sugar and tin agreements that the permitted range of price fluctuations has been liberal. Even so, the history of I.C.A.s is littered with lapses and failures. Thus, the International Sugar Agreement collapsed in 1984 and has now been replaced by a pact without any price or supply provisions. (There is now merely a centre for collecting and disseminating statistics and other market information.)

The International Cocoa Agreement is due to expire in October 1986. Negotiations failed (for the third time) early in 1985. There are to be more talks later in 1985, but with the U.S.A. having decided definitely to stay out, it is not possible to be sanguine as to the outcome. The existing Agreement, meanwhile, exerts little influence on the world cocoa market, for its buffer stock has run out of cash, having bought over 100,000 tonnes of surplus cocoa. Prices are now below the floor of the Agreement, and so stocks cannot be disposed of.

The International Tin Agreement survives, but only just. It has, at the time of writing, however, accumulated no less than 38,000 tonnes of the metal, together with another 23,000 tonnes carried over from a previous pact. This total, at present worth $7.8 billion, is a depressing influence upon prices into the foreseeable future, even though there are stringent export controls in force in producer member countries.[1]

The International Coffee Agreement can claim to be effective at present. It controls the market by using export quotas linked to trigger price levels, so that prices in member countries are some 50 per cent above those in non-member countries. However, it is reported that resentment is directed towards the rigidity of quotas, which are not freely transferable among the producing countries. As a result, the

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1. Since the above was written, there has been a major debacle in the tin market. This occurred when the manager of the buffer stock declared that the International Tin Council had run out of funds, and was therefore unable to honour existing commitments, much less support the tin price. As a result, a financial crisis among tin traders was precipitated and the L.M.E.'s tin market was declared closed. These events provide a dramatic instance of the arguments deployed in the text. The price levels set by the sixth Agreement of the I.T.C. in 1982 for the buffer stock's interventions to maintain the agreed ceiling and floor prices were inappropriately high. Tin thus became uncompetitive with substitutes in prevailing world demand conditions; the I.T.C.'s support funds dwindled to exhaustion, while new producers outside the I.T.C.'s quotas were encouraged. Meanwhile, the I.T.C. experienced considerable difficulty in raising the additional finance from its member countries, necessary to repay some dealing members of the L.M.E., who appeared to have loaned money to the buffer stock manager to enable him to buy tin from them.

prices of some types of coffee are being maintained at an artificial differential. European consumers are more restive than those of the U.S., which is widely known to wish to maintain the Agreement for political reasons. (Latin America produces most of the world's coffee.)

Finally, the International Wheat Agreement has no price or supply provisions. It merely serves as a forum for discussion for grain producers.

Thus, with the exception of the successful Coffee Agreement, perhaps, I.C.As seem unlikely to pose a serious threat to business done on the world's commodity markets.

Producer cartels also seem destined, ultimately, at least to weaken sufficiently for the existence of a commodity market to be eminently worthwhile. As previously remarked, despite the continuing relative strength of O.P.E.C. and its posted prices a focus of the world's attention as far as oil prices are concerned are the free markets, for as world demand fluctuates, a number of O.P.E.C. members are inclined by economic necessity to "break rank" and exceed their quotas. As a result, Gas Oil and Heating Oil futures contracts on the New York Mercantile Exchange have been one of the great successes among recent developments, while the International Petroleum Exchange in London, though newer and less successful to date, seems set fair to continue, and possibly to flourish ultimately.

A number of commodities are, of course, still traded on long-term contracts, even though these do not account for the entire trade. (Examples include iron ore, copper concentrates, bauxite and alumina, phosphate rock, some sugar and rubber, meat, wheat, rice natural gas,

nickel uranium and coal.) However, not even the contracts which the U.K. concluded shortly after World War II could run their full course without price adjustments although, seen in retrospect, this was a period of comparatively modest inflation, and of currency stability. These conditions no longer hold, so, not surprisingly, there has been of recent years a trend away from fixing prices at the outset. Indeed, some contracts do not fix a price at all, but refer to the market price (which, of course, presupposes the existence of a market). Copper concentrates, for example, are sold on the basis of the prices of copper metal established on the L.M.E. Thus, unless producers can remain in a very dominant position indeed, markets survive, though their turnover can obviously be adversely affected for an appreciable period on occasion. It must therefore be concluded that there is a far greater compatibility between contractual arrangements for commodity trading and the continued use of futures markets than might initially be imagined.

(c) Countertrading

A further method of concluding transactions, potentially more threatening to commodity-market turnover, has made a strong appearance over the past two years. This is known as countertrading, though there are a number of variants of the basis of these transactions which is, in essence, barter. Very frequently, however, the transactions are much more sophisticated than is currently implied by the term barter, so that institutions are developing to provide expertise in negotiating the deals. If such a trade has a centre of origin, it would be in European banking centres, but particularly Vienna. Within the recent past, however, professional provision of services has spread to London and New York, with Hong Kong and Singapore probably poised to participate, especially since it is proving particularly useful in the growing trade with China and Indonesia. Further factors which have given ah impetus to the development

of countertrading of recent years are firstly the enormous accumulation of debt by the world's developing countries, leading to more stringent exchange controls and tending to close avenues to traditional forms of credit. Secondly, there are the gyrations of the world's leading trading currencies in relation to one another. Thirdly, the onset of recession in the early 1980's, depressed the prospects for exports and frustrating attempts to reduce the level of indebtedness. In brief, countertrading can be seen as a means of circumventing the expenditure of scarce foreign exchange and promoting sales abroad.

According to Frank Gray of The Financial Times, for the big transnational corporations and trade brokers engaged in countertrade, there are at least half a dozen techniques of trade - and many more intermediaries - utilized, in order to close what is essentially a bilateral trade deal. The key phrases used in countertrade provide a flavour of the sorts of activities involved.

(i) Barter: this corresponds to the sort of transaction with which everyone is familiar, viz. a straightforward exchange of goods and or services. Its use is comparatively rare.

(ii) Counterpurchase: this is the description for the type of transaction engaged in. In essence, the exporter is required to accept part-payment in kind in return for his goods. Money is therefore involved, and the goods offered are often quite unrelated to those provided by the exporter. Sometimes, the deal requires the involvement of third - and often many more - partners. The use of counterpurchase has long been used between the West and the Comecon bloc, but is now increasingly a feature of trade with the developing world also.

(iii) Buy-back: this, too, is a familiar form of trade between the West and the Eastern bloc. It is a form of long-term barter, with repayment

often in terms of the output of any investment involved. It is often possible, by this means, to establish a presence in a market with long-term potential.

(iv) Offset: a technique often used for transactions between industrialized and developing countries. It involves an "offsetting" investment by an exporter in an importer's country, in order to foster more employment and so help provide the importer with the means to pay for the goods (often used in commercial aircraft and defence deals).

(v) Switch Trading: a technique employed to correct imbalances in long-term bilateral agreements. Thus, one nation's trade surpluses with a partner country can be utilized by third parties.

(vi) Evidence Accounts: these enable the exporter to debit its own counterpurchased imports and credit its exports over a period of time rather than counterpurchasing goods on an item-by-item basis to match the exports. The aim is to maintain the evidence account in balance year by year.

Estimates of the growth of countertrading vary from some 8 per cent of world trade to more than double that proportion. Moreoever, though it may be viewed as an emergency solution to currency and financing problems, now that some major institutions have become deeply involved, these forms of barter trading are as unlikely to disappear in the short term as are the enormously inflated debts owed by the third world which have partly inspired the emergence of those techniques. As such, they clearly pose a

threat to any growth of turnover on the commodity markets on the same scale as during the 1970s.[1] (Financial futures, of course, are another matter altogether.)

Meanwhile, some of the more innovative traders in raw materials have been quick to seize opportunities in the field of countertrading. Metallgesellschaft of West Germany is a prime example. It recently established a countertrade partnership linking it with First Boston (the U.S. merchant bank) and Louis Dreyfus, the French commodities group. Advertisements in the financial press reveal other famous institutions anxious to provide intermediation in this field. They range from well-known names in the merchant banking field, such as Kleinwort Benson, to a consortium of four leading British banks, viz. Lloyds, Barclays, National Westminster and Midland, which have joined two Belgian trading houses to set up Bastis, an international clearing house for countertraders. There are many other examples.

(d) Information Technology and the Commodity Markets

A large firm of London brokers will by today expect to spend well over £250,000 a year in rent to providers of information. Reuters will often take a large slice of this money, providing in return, information on about 100 video-screens in the dealing room. This information will include data on foreign exchange movements, stocks and shares, the money

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1. Not only does countertrading imply that more commodity transactions by-pass the markets, but it appears at present as a development which is eroding the cohesion of O.P.E.C. At the time of writing, Nigeria argues (Times report, 10 May, 1985) that the oil involved in its counter trading should not come from its OPEC-agreed quota of oil exports. The first deal of this kind - also outside quota limits - was made by Saudi Arabia in 1983, when it bought ten Boeing jumbo jets in return for oil. Countertrading transactions as between commodities are by no means rare, of course. Thus, for example, New Zealand is to sign a barter deal with Iran through which it will trade 30,000 tonnes of butter, for oil. This follows two previous oil-for-lamb deals between N.Z. and Iran.

markets, and commodities. In the same vein, Reuters international network can flash a message across the world in about one and a half seconds (compared with about thirty seconds to connect a telephone call to, say, Australia).

Reuters started the world's first international securities/commodities service in 1964, with close-of-trade details. At present it has some 20,000 subscribers in 100 countries, with more than 50,000 terminals in all. As far as U.K. commodity information is concerned, Reuters now has competition from the U.S. giants in the form of Quotron, an enterprise in a joint-venture with Associated Press and Dow Jones, and Telerate, backed by the same companies, which specialize in foreign-exchange and the money markets. Quotron has recently opened a computer centre in London to link with its centre in New York, and will serve a network of computers in the rest of Western Europe.

These networks, moreover, can be inter-active, i.e. they can provide two-way communications so that dealers outside financial centres can buy and sell electronically. Reuters has run a two-way system of this sort for gold and currency dealing for some time, called Monitor Dealing. This is, however, "hard-wired". The stage has now been reached where a computerized trading system with built-in clearing facilities will become a reality. The start point here appears to have been McGraw-Hill's "Emis" (i.e., Electronic Information and Marketing System) used by oil traders and petrochemical feedstock traders since 1981. This system, however, required traders to provide or accept delivery. The Emis System is in four basic parts. It allows users to do trades; it broadcasts market activity to all subscribers; it has a break-in news capability which feeds off the McGraw-Hill news-gathering network, and it can process deals down into graphic form (with the software automatically taking a weighted

average of all completed transactions). This "electronic broking facility thus lies halfway between a trading and an information service. The commodity trade is, then, catching-up with electronic dealing in securities in the U.S.A. where the National Association of Security Dealers' Automatic Quotation System (N.A.S.D.A.Q.) has been providing dealers nationwide with an over-the-counter service for their clients for some years by this time.

These developments pose an obvious question: is information technology (I.T.) going to make the commodity market floor obsolete in the foreseeable future? The drift is clearly in that direction, and, some would argue, sooner rather than later. Others, however, are of the opinion that there is no substitute for the reactions from a throng of traders all in one place around a trading-ring or pit, when the volume of trade is high. They already concede, on the other hand that, when the volume is modest, computer trading can be very effective. It is, moreover, anonymous and lessens the chance of errors in the execution of orders (that is, of "out-trades", where two traders' records of the same deal fail to match, for the computer would provide an immediate record).

The test for the complete computerization of commodity exchanges will be provided by "Intex", the international futures exchange based in Hamilton, Bermuda, which goes far beyond the international electronic links already established between many exchanges (mainly for arbitrage purposes when there are price discrepancies between markets). This is an even more ambitious "follow-on" from the entirely computerized World Energy Exchange opened in Dallas in 1983. "Intex" was initially designed to achieve round the clock trading by means of an automated commodity exchange linking desk-top terminals to data centres, initially in New York and London, and later Chicago and the Far East. The data centres would be

linked to the central computer at Bermuda via dedicated telephone lines running to mainframe computers in London, Virginia or Vienna. I.C.C.H. has secured the business of guaranteeing and clearing the contracts which are to consist, at first, of gold, followed by a long-term U.S. Treasury bond contract, a silver contract and a freight-rate index (i.e. the B.F.I.).[1]

Of an estimated membership total of some 600 envisaged, some 265 have already paid subscriptions, though fewer than this will have active video screens. A trader's screen displays, for each price close to the current market level, the total volume of bids and offers put into the system by all trading members. The computer matches them and provides a record for each side, but does not disclose the identity of the one to the other.

Will these major new devices persuade market traders to abandon market floors completely? It is doubtful whether this will happen in the near future to the world's major trading floors. On the other hand, information technology has undoubtedly made a major impact by increasing the flow of information. Moreover, it would not be too surprising to see some of the lesser futures markets become fully automated within the next few years.

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1. As of mid-1985, there were 45 trading stations linked to Intex, doing an average of 300 contracts a day in gold futures. Since 1 May 1985, when Intex started trading an ocean freight rates contract - an identical one to that of "Biffex" in London - turnover has been some 200 contracts a day, well above expectations. In August, Intex will start trading a stock index futures contract based on the Financial News Composite Index (FNCI, pronounced "fancy"). This is expected to be very successful, with 4,000 a day turnover predicted and adding about another 30 trading stations. Intex is also about to lease its system to outside users. They will then put their own name to it and reimburse Intex according to the volume traded.