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The relentless progress of commodity exchanges in the establishment of primary commodity prices☆

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ABSTRACT

A continuously expanding group of commodities are being priced on commodity exchanges. This paper explains the causes to the increasing preference of exchanges as pricing instruments. It also provides the detail of the shift in the 1970s and 1980s from producer determined prices to prices set by commodity exchanges for three major commodities—aluminum, nickel and petroleum.

Introduction

The thesis of the present study is that commodity exchanges have proliferated over time as tools for primary commodity pricing. The detailed purpose of my deliberations is to explain how and why this development has taken place, and more specifically to have a careful look at the process through which pricing of three major commodities, aluminum, nickel and crude oil, was shifted some decades ago from a regime where the leading producers from time to time announced prices at which they were prepared to sell, towards the quotations established in deals transacted on commodity exchanges. The pricing of iron ore has recently been subject to fundamental change whose ultimate outcome is not yet clear. A follow-up question addressed at the end of the paper is if pricing of iron ore, too, will end up on the exchanges.

Before venturing into each of the three commodities, in turn, I find it useful to provide a context by reviewing the major alternative trading arrangements and pricing systems employed in primary commodity markets. I then turn to a detailed review of the materials under scrutiny, and inquire about the inevitability of the events that took place, their major drivers, and the motives of the parties on both sides of the transactions that permitted the shifts to take place.

A final part of the study comprises an evaluation of the main benefits and costs to the involved parties of the shift in pricing system for the three materials under review, as well as in more general terms. Issues like price instability, price transparency, facilities for trading and inventory holding and shifting distribution of benefits from trade are given consideration. A brief concluding section summarizes the producers' and consumers' sentiments towards using exchanges for pricing primary commodities.

Alternative trading arrangements and their implications for price formation in primary commodity markets[1]

A myriad of arrangements are being practiced for pricing primary commodity trade, so the discussion in the present section must be selective. My ambition is to classify the trading and pricing arrangements into a few major forms, to indicate some of the markets in which they are practiced, and to point to the major implications for the sellers and buyers of each form. The logical order of my classification is from some highly private and opaque arrangements to the most public and transparent ones.

Transfer prices

Transfer pricing in commodity trading occurs when the producer/seller and the user/buyer are part of the same vertically integrated corporation. The prices in such trade are internal to the firm, and can be set at any level. They appear only in the accounts

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[1] This section draws heavily on Radetzki (2008).

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of the firm and are seldom published. The transfer price level does not affect the corporate profit before tax.

Transfer prices assume importance only when trade across borders is involved. The profit maximizing multinational corporation will set the transfer prices so as to minimize the sum total of profits tax, export tax and import duty. Import duties on raw materials are usually low, so ordinarily the major corporate concern is with profits and export taxes. If the transfer price is set low, profits will be shifted to the importing country. This will reduce the tax burden, when the profits tax in the importing country is lower.

Where transfer prices dominate a market, the price transparency will usually be low. Even if the prices were known, it is unclear whether they would reflect the costs of production or the price level that would emerge in arm's length transactions.

Bauxite trade probably offers the best example of a commodity market based importantly on transfer prices. The extent of vertical integration from bauxite to alumina and aluminum is still high, and a substantial share of the bauxite and alumina that enter international trade is internal corporate deals. Transfer price arrangements also account for minor shares of international transactions in, for example, iron ore, tea, rubber, and some edible oils, where the processors in industrialized importing countries own some of their sources of primary supply. Transfer prices were far more common in the 1950s and 1960s, for example in petroleum, iron ore, unrefined copper and many food products. Since then, there has been a wholesale vertical de-integration of the industries producing and processing these materials. This resulted, importantly, from a widespread wave of nationalizations of the raw material producing industries in developing countries, but to some extent also due to changing fashions which considered vertically integrated corporate structures as imposing undesirable constraints on both buyers and sellers. In consequence, the significance of transfer pricing has been greatly reduced.

Posted prices

Governments of exporting countries desirous to maintain their tax income have instituted posted prices in some cases, to be applied for the purpose of tax assessment in the exporting unit of the integrated firm. These prices have sometimes been derived from production costs; in other cases they have been based on perceptions of prevailing price levels in trade between independent parties. The institution of posted prices reduces the corporate benefit from tax avoidance through transfer price manipulation.

Posted prices were widely applied in the oil market during the early 1970s, a period when the OPEC producers acquired their muscles, and when, initially, there was little arms length oil trade, so no meaningful market quotations existed. The major oil companies traded oil internally applying transfer prices that were often quite suppressed and that were rarely published. The major producing countries needed a measuring rod for taxing production and exports, hence developed a system of posted prices that were thought to reflect the value of oil. The need for the somewhat artificial posted pricing system in oil ceased to exist as OPEC countries nationalized their oil industries later in the 1970s, and government income from oil became dependent on the actual prices that the state owned enterprises could obtain from oil sales.

Bilateral contracts

This was for long a predominant arrangement in international commodity trade, and still is the normal transaction mechanism in many markets, comprising most minor metals and industrial minerals. It involves a pair of agents who independently agree on the terms that will apply to the trade between them. The crucial terms on which all contracts have to be explicit are the commodity specification, the quantity, the time and place of delivery and the price. Other than that, bilateral contracts come in many different forms. Thus, some contracts can relate to a single transaction, while others concern repeated deliveries stretching over periods from a few months to a decade or more.

Bilateral contracts often employ the price levels set elsewhere, e.g. on commodity exchanges, as guiding posts for their price determination. Price setting becomes more tricky for commodities that do not have alternative guiding rods for prices that both parties can agree to use, for then each bilateral pair will have to negotiate and agree on the price that will apply to its contract. This will be arduous and time consuming. Since prices of contractual agreements are rarely published, the negotiations may result in a wide range of price levels at a particular point in time.

In practice, there are often conventions which simplify the procedure of price determination, and help avoiding blatant deviations from some average price level. In manganese, for instance, where most trade is transacted through annual bilateral contracts, a commercial practice has developed where a major supplier enters into preliminary discussions with a major customer, while the rest of the industry defers its contract negotiations. As soon as this pair reaches an agreement, all other suppliers and users adopt the agreed price as a guideline for their own price setting. Very similar practices applied to the annual contracts under which a large proportion of international iron ore trade was transacted, but this system has been undergoing significant change in the recent past (Wilson, 2012).

In other cases the price transparency in bilateral contract markets is quite limited. This is true, for instance, of the international markets for sisal and jute or of phosphates and chromite, though in all these cases trade associations or specialized journals publish prices or price ranges purporting to reflect the levels of actual transactions. In uranium, NYMEX provides a time series of prices reflecting a thin spot trade market that is used for guidance of pricing immediate bilateral contract transactions, while the evidence of prices applied in the long-term contracts that dominate uranium trade, is scattered and less systematic.

In some cases, the true price may not even be clearly apparent from the content of the bilateral contract. This would be the case when the contracted price is preferential, to take account of the provision of long-term investment finance, or equity participation, by the buyer. Similarly, barter deals make it very hard to determine the true commodity price contained in the contract.

Especially in cases with lacking transparency, there is a likelihood that small parties with lesser access to information and with weaker bargaining power will get a worse deal in bilateral contracts than they would in the more transparent and impartial arrangements, such as those characterizing auctions and exchanges.

Producer dictated prices

Producer dictated prices, commonly known simply as 'producer prices', are of particular relevance to the present study, since this is the system that was originally employed in aluminum, nickel and oil, and that then disintegrated and was replaced by exchange determined pricing.

Producer dictated prices mean that the leading producer (s) announce the price at which they are willing to sell. In addition to virtually all manufactured products markets, such pricing systems occur in commodity markets where the number of producers is relatively small, and where each sells to many customers. Producer pricing implies some degree of monopoly power (Felgran, 1982); it also affords the producers a certain degree of initiative and convenience. The commodity is sold on a