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**AN OVERVIEW OF MAJOR SOURCES OF DATA
AND ANALYSES RELATING TO PHYSICAL
FUNDAMENTALS IN INTERNATIONAL
COMMODITY MARKETS**

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Pilar Fajarnes

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AN OVERVIEW OF MAJOR SOURCES OF DATA AND ANALYSES RELATING TO PHYSICAL FUNDAMENTALS IN INTERNATIONAL COMMODITY MARKETS

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Abstract

The debate on whether price movements in commodity markets are determined by changes in physical supply and demand fundamentals or by the speculative effects of financial investors seems to find some element of agreement on one particular point: the need for increased transparency and improved information on futures markets and physical commodity markets. This discussion paper provides an assessment of the current situation with regard to availability of information on physical commodity markets, pointing to some of the existing information gaps and areas for improvement. The paper presents a comprehensive account of the different information sources for physical commodity markets (including their websites), and could therefore be considered a practical information tool in itself, of use to different stakeholders interested in knowing about developments in these markets.

I. INTRODUCTION

Commodity markets have experienced turbulent times during the first decade of this millennium, reflected in the increasing volatility of commodity prices. Having registered a long decline until the end of the 1990s, commodity prices started to rise in 2002-2003. The price increases accelerated in 2004-2005, and they peaked in 2008. Commodity prices then plunged during the second half of 2008 with the eruption of the global financial crisis, only to recover by mid-2009 and increase rapidly again in 2010 and early 2011. In May 2011 commodity prices were suffering sharp downward corrections.

There has been an intense debate on the causes of the extreme movements in commodity prices during these years. The discussions have focused on whether these were due to changes in the fundamentals of demand and supply in commodity markets, or to the increasing presence in those markets of financial investors who regard commodities as an additional asset class. Due to data constraints, it is difficult to provide empirical proof of the influence of excessive speculation on commodity prices. However, there seems to be some agreement that financial investors can exert an influence on commodity price volatility, at least in the short term.¹

Thus, while commodity market fundamentals would be the dominant factor influencing medium- to long-term trends in commodity prices, financial investors have the potential to exacerbate the

¹ In recent years, there has been a proliferation of studies and analyses focusing on one side or the other of this debate. For example, some economists argue that the increasing financialization of commodity markets has had a significant impact on prices (see, UNCTAD 2009a; Gilbert, 2010; and Tang and Xiong, 2010). Others point to fundamentals of supply and demand as the determinant of recent commodity price volatility (see, for instance, Sanders and Irwin, 2010). For a review listing a number of different studies on the evidence of the impact of commodity speculation, see Henn, 2011. See also IATP (2011) for a review of writings on the impact of speculation with a focus on agricultural commodities.

movements of those prices in the short term. Indeed, they may even be responsible for creating bubbles over short periods of time. Whatever the case may be, as expectations play a strong role in commodity price formation, the need for improved transparency and better information – not only about developments in futures markets, including over-the-counter commodity derivatives, but also in physical markets – has become widely accepted.² This would reduce uncertainty about the evolution of the markets and help improve their functioning.

The importance of market transparency in commodity markets has been widely recognized at several international forums. The Task Force on Commodity Futures Markets of the International Organization of Securities Commissions concludes in its report to the G-20 that “Efforts are required by relevant authorities with regard to the enhancement of data on underlying cash market (physical) commodity market transactions ... unless such transparency is achieved, it will remain difficult for national authorities to understand the relationships between transactions in the financial markets and transactions in the cash markets” (IOSCO, 2010a).³ The International Energy Agency has highlighted that “excessive volatility can be controlled by means of better operating markets and improved visibility of current conditions and expectations for the market in the future ... the issue of data transparency is paramount for a better understanding of oil market dynamics. Improved data on demand, supply and stocks are key to a better grasp on market fundamentals” (IEA, 2010). The need for improving information on physical markets was also widely discussed at UNCTAD’s recent Multi-year Expert Meeting on Commodities and Development.⁴ Improved transparency in physical commodity markets to address commodity price volatility is considered one of the priorities during France’s presidency of the G-20 in 2011.⁵

In this context, the objective of this paper is to provide an inventory of major commodity data and information sources, as well as an evaluation of the current availability of information on the evolution of physical supply and demand fundamentals in international commodity markets. By presenting an overview of the major sources of data and analyses about these markets, this paper is also intended as a practical tool or guide for market participants and other stakeholders interested in knowing about developments in commodity markets.⁶

² For an in depth analysis of the role of information in commodity price formation in financialized commodity markets, see UNCTAD, 2011a.

³ For a more detailed discussion on transparency in physical commodity markets, see also IOSCO, 2009. IOSCO (2010b) further develops on the importance of transparency in physical cash commodity markets.

⁴ See the report of the meeting at UNCTAD, 2011b.

⁵ See “The priorities of the French Presidency”, available at: <http://www.g20-g8.com/g8-g20/g20/english/priorities-for-france/the-priorities-of-the-french-presidency/sheets/commodity-price-volatility.353.html>. In addition, the Agriculture Secretary of the United States wrote in the *Financial Times*: “We need a concerted effort by the private sector, governments and multilateral institutions to increase transparency and market information... Group of 20 leading nations, along with other countries, should support improved data collection and the dissemination of information about physical cash markets and support improved weather monitoring” (*Financial Times*, How to avoid a global food price crisis, 23 March). Similarly, a recent communication of the European Commission on Commodities highlights the need to promote further improvements in the transparency and accessibility of information on the physical commodity markets (EC, 2011). Moreover, an interagency report on policy responses to price volatility in food and agricultural markets, prepared for the French presidency of the G-20, also introduces concrete proposals for increasing transparency in physical markets, including the Agricultural Market Information System (FAO et al., 2011).

⁶ Whenever possible, and as deemed appropriate, this paper presents the URL links for the different sources of commodity information products with the purpose of facilitating readers’ access to the electronic versions. However, as is well known, given the fast speed of changes on the Internet, some links may become rapidly inactive because the information has moved. In order to tackle this issue, the paper generally provides the name of the institution and the corresponding information product so that the new link to the product can be easily found through a simple search on the web.

While this review can be considered as a sufficiently comprehensive account of the major sources of information on physical commodity market developments, it is by no means exhaustive, given the vast amount of information available electronically through Internet. Given the fast changing information on the Internet, the contribution of this paper should be seen as an ongoing exercise or work in progress. Furthermore, the paper looks mainly at information sources in English, although from a review of this kind of information in other major languages, such as French and Spanish, it appears that most of the major information sources on physical commodity markets at the global level are in English.

This discussion paper starts with a brief assessment on the general situation with regard to information on physical commodity markets. The three subsequent sections present the different sources of data and analyses on commodity markets by major commodity groups: food and other agricultural commodities, energy commodities, and minerals and metals. This is followed by an overview of additional sources of information for all commodity groups. These include commodity information and analyses provided by international organizations, by financial institutions which are playing a more influential role in this area, and by specialized commodity websites and media. Commodity exchanges and major international commodity conferences are also considered as possible channels for market participants to capture the pulse of the markets. The paper concludes by pointing to some of the information gaps that would need to be addressed and suggesting areas of improvement for achieving better transparency in commodity markets.

II. INFORMATION CONCERNING DEMAND AND SUPPLY FUNDAMENTALS OF PHYSICAL COMMODITY MARKETS: GENERAL ASSESSMENT

Transparency of information about physical supply and demand fundamentals in international commodity markets is essential for market participants to form accurate expectations on prices and thus for the efficient functioning of the markets. There are different types of information that can be obtained about these markets: (i) raw data from databases that include various data related to production, consumption, trade, stocks and prices; (ii) processed data that result from analyses of market trends and monitoring of the current situation; and (iii) forecasts or projections about the future evolution of market fundamentals which may be short-term outlooks or medium and long-term outlooks. The frequency of commodity market information varies widely, depending on the data source, and can range from daily to annual data. However, most publicly available official sources are based on monthly data.

The short-term evolution of fundamentals in agricultural commodity markets is strongly determined by the supply side. Demand normally evolves gradually, thus shocks in demand are less likely to happen than shocks in supply. Weather conditions whose evolution is highly uncertain may have a strong influence in agricultural production. As crops are harvested in specific times of the year, having more day to day information on actual supply and demand is not likely to be a relevant issue. However, expectations on supply also play a major role in these markets, thus it may be important to improve the data on crop plantings and harvests forecasts. In the case of energy commodities, where demand factors also play a major role in their short-term evolution, as demand for energy is linked to industrial cycles, more immediate information about events related to the evolution of the world economy and their impact on energy demand may be of higher relevance. In this context, geopolitical factors also play an important role, which may also call for having more frequent information on supply.

There is ample information on physical commodity markets but it is not easy to obtain it in a systematic way; there are a number of sources that provide the same information and the information may appear in many different formats. Thus it takes time and expertise to find out which are the most useful, relevant and reliable sources for the information products required for each commodity. Even for a single source of information the multiplicity of information products is such that it is rather cumbersome to access the targeted information.

The information can be produced by official sources, such as international organizations and study groups or organizations specialized on specific commodities or groups of commodities, as well as national sources from governments of countries which are key players in the commodity markets, such as the United States or Australia, and by private sources. In many cases, even for official sources, the information is not publicly available; it can be accessed only by customers or private users against payment.

III. INFORMATION ON AGRICULTURAL COMMODITY MARKETS

A. Food commodities

The main international source of reference for data and market analysis and monitoring on physical fundamentals for food, and other agricultural commodities, is the Food and Agriculture Organization of the United Nations – FAO (<http://www.fao.org/>). FAO publishes different reports in the context of its *Global Information and Early Warning System* – GIEWS (<http://www.fao.org/giews/english/index.htm>). These reports include a monthly *Global Food Price Monitor*, a quarterly *Crop Prospects and Food Situation*, which provides a detailed assessment of cereal production as well as supply and demand conditions by country/region, and a biannual *Food Outlook*, which offers more in-depth analyses of world markets for cereals, as well as other major food commodities. FAO also publishes *Country Briefs* and the *Cereal Supply/Demand Balances for sub-Saharan Africa*.

Beginning March 2011, FAO launched an online monthly brief on the global cereal situation and outlook with the purpose of providing an up-to-date perspective of the world cereal market, the *FAO Cereal Supply and Demand Brief*. Apart from the reports indicated above, the latest market assessments and short-term forecasts for specific commodities are presented in the *Monthly News Reports on Grains*, *Rice Market Monitor* (quarterly), and for oil crops, the *Monthly Price and Policy Update* which complements the *bi-annual market reports*. Most of these products can be easily accessed from the *World Food Situation* portal (<http://www.fao.org/worldfoodsituation/wfs-home/en/>).

FAO maintains a number of databases on agricultural commodity markets, including *FAOSTAT* database (<http://faostat.fao.org/default.aspx>), the *National Food Prices and Data Analysis Tool* (<http://www.fao.org/giews/pricetool2/>) and the *International Commodity Prices Database* (<http://www.fao.org/es/esc/prices/PricesServlet.jsp?lang=en>). Information by commodity, including other non-food agricultural commodities, can be accessed in the *Commodity Markets Monitoring and Outlook* (<http://www.fao.org/economic/est/commodity-markets-monitoring-and-outlook/en/>). The annual joint report with the Organisation for Economic Co-operation and Development, *OECD-FAO Agricultural Outlook* provides medium-term projections; the latest outlook published in June 2011 covers the period 2011–2020. It can be accessed at <http://www.agri-outlook.org/>, including the link to the database.

In the context of food security, the Committee for World Food Security (CFS), which is the United Nations' forum for reviewing and following up on policies concerning world food security and examining issues which affect the world food situation, has recently launched a *Food Price Volatility Portal* (<http://www.fao.org/cfs/accueil-de-la-csa/cfs-portal/fr/>). This is part of the reform process of the Committee which followed the food crisis of 2008, with the purpose of making the Committee the foremost inclusive international and intergovernmental platform dealing with food security and nutrition as well as a central component in the evolving Global Partnership for Agriculture, Food Security and Nutrition. The portal provides access, in addition to most of the FAO information mentioned above, to new information products such as the *Market Monitor* of the World Food Programme or the *Grain Market Indices* of the International Grains Council. This portal represents a notable advance in the necessary coordination to facilitate access to different information sources. The *IFPRI Food Security Portal* of the International Food Policy Research Institute (<http://www.foodsecurityportal.org/>), with a stronger focus on policy issues, is also a useful tool. At the national level, for the most vulnerable countries, the World Food Programme maintains the *Food*

Security Monitoring System (<http://www.wfp.org/food-security/reports/FSMS>) and offers market assessments and price bulletins by country.

Additionally, also at the international level, but with a focus on grains, the International Grains Council – IGC (<http://www.igc.int/en/Default.aspx>) provides a large amount of information on these markets although an important proportion of it is not publicly available. Market information products of IGC include the monthly *Grain Market Report*, GMR which reviews the current situation and outlook for wheat (including durum), coarse grains (including maize (corn), barley, sorghum, oats and rye), oilseeds and rice. Separate chapters cover production, trade, consumption, stocks, prices, ocean freight rates and national policy developments. The analysis is supported by some 40 statistical tables. Only the summary is publicly available. In addition to the monthly Grain Market Report, *GMRPlus* has two elements: First, *Grain Market Indicators* is issued each Wednesday, providing the latest export prices and carrying short market commentaries on wheat, maize (corn), other grains (barley, sorghum, oats, rye), rice, soybeans and ocean freight rates; second, *GMR Statistics* provides weekly updates of some key GMR statistical tables, as well as a diary of grain market news and events. The IGC annual *World Grain Statistics*, published in online format only, contains detailed Excel tables on production, trade, consumption, stocks and prices for wheat (including data for durum and wheat flour), coarse grains, rice and oilseeds. Additional tables deal with ocean freight rates. Most tables cover a 10-year period.

At the national government level, the United States Department of Agriculture – USDA (<http://www.usda.gov/wps/portal/usda/usdahome>) is also one of the most comprehensive sources of information on global agricultural markets. The information provided by this agency is especially relevant because the United States is a major producing country in a number of agricultural commodities such as corn, wheat, soybeans and cotton. Therefore, information about changes in estimations on crops in the United States can have a strong impact on global markets. This agency offers a multitude of information products on agricultural and food markets at the national and international level. The *World Agricultural Supply and Demand Estimates* – WASDE (<http://www.usda.gov/oce/commodity/wasde/>) report (monthly) provides USDA's comprehensive forecasts of supply and demand for major crops in the United States and globally and livestock in the United States. The *Production, Supply and Distribution online database* (<http://www.fas.usda.gov/psdonline/>) contains current and historical official USDA data on production, supply and distribution of agricultural commodities for the United States and key producing and consuming countries. The USDA's *Global Agriculture Information Network* – GAIN (<http://gain.fas.usda.gov/Pages/Default.aspx>) provides timely information on the agricultural economy, products and issues in foreign countries since 1995 that are likely to have an impact on United States agricultural production and trade. The markets and trade materials (<http://www.fas.usda.gov/markettradedata.asp>) include the *World markets and trade* (monthly) reports for grains, cotton and oilseeds (for coffee the reports were published twice per year in 2009 and 2010 and quarterly before 2009; for sugar, they are offered twice per year).

In addition, the annual USDA *Prospective Planting Reports* which provide information on expected plantings as of 1 March for a number of commodities are widely awaited by the market participants every year (<http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1136>). Commodity and country analysis can be accessed in the *Global Crop Production Analysis* (<http://www.pecad.fas.usda.gov/>). USDA also publishes *Monthly Outlook* reports (<http://www.ers.usda.gov/publications/outlook/>) on the market situation of different commodities and the *Agricultural Outlook Statistical Indicators* (<http://www.ers.usda.gov/Publications/AgOutlook/AOTables/>). In addition, this agency provides a *Weekly Weather and Crop Bulletin* (<http://www.usda.gov/oce/weather/pubs/Weekly/Wwcb/index.htm>) and reports on *State Crop Progress and Condition* (<http://www.nass.usda.gov/Publications/StateCropProgressandCondition/index.asp>) on a weekly basis. It also publishes information on the situation of grain stocks on a quarterly basis (<http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1079>). Looking to the future, USDA also prepares longer term projections once every year, the latest being the *USDA Agricultural Projections to 2020*, which were published in February 2011 (<http://www.ers.usda.gov/Publications/OCE111/>).

Furthermore, although not part of USDA, the United States Government publishes a number of analyses on markets and trade trends in countries affected by food security problems in Africa, Central Asia and Central America, such as the *Price Watch* through its agency for international development, *USAID Famine Early Warning Systems Network* (<http://www.fews.net/Pages/default.aspx>).

Outside the governmental framework, the United States Grain Council publishes the *Market Perspectives* newsletter on a weekly basis (http://www.grains.org/~grains27/index.php?option=com_content&view=article&id=2837:market-perspectives-2011&catid=73). In addition, the third widely known longer term agricultural outlook (apart from those of OECD-FAO and USDA) is prepared by the Food and Agricultural Policy Research Institute (FAPRI). The 2011 edition of the *U.S. and World Agricultural Outlook* covers the period up to 2025/26 (<http://www.fapri.iastate.edu/outlook/2011/>).⁷

Equally on a national basis, the Australian Bureau of Agricultural and Resource Economics and Sciences – ABARES (<http://www.abares.gov.au/>) of the Government of Australia provides ample information for all commodities from the Australian perspective, like the quarterly publication entitled *Australian Commodities* and the *Australian Commodity Statistics*. In agricultural commodities, for example, it produces the *Australian Wheat Supply and Exports Monthly* or the *Australian Crop Report*. ABARES also publishes the *Australian climate and agricultural monthly update*.

In Europe, the “Comité du Commerce des céréales, aliments du bétail, oléagineux, huile d’olive, huiles et graisses et agrofournitures” – COCERAL (<http://www.coceral.com/cms/beitrag/10017773/227949>) publishes grain and oilseeds crop forecasts for the countries of the European Union. The European Commission also provides economic analysis and evaluation through the monthly *Update on recent agricultural commodity and food price developments in the EU* (<http://ec.europa.eu/agriculture/analysis/markets/foodprices/>). It also monitors price developments for agricultural commodities and food and publishes reports on a monthly basis in the *International Price Monitoring Newsletter* (http://ec.europa.eu/agriculture/analysis/tradepol/commodityprices/index_en.htm). Moreover, the European Union provides agricultural statistics at: http://ec.europa.eu/agriculture/agrista/index_en.htm as well as the EU Agriview on Prices, *EU Market Prices for representative products* (http://ec.europa.eu/agriculture/markets/prices/monthly_en.pdf). Analysis on the cereal sector in Europe are also provided by Stratégie Grains (<http://www.strategie-grains.com/>).

Information is less plentiful for regional sources on the situation of food and agriculture markets in developing countries. However there are some examples such as the ASEAN Food Security Information System (<http://afsis.oae.go.th/index.php>) or the Inter-American Institute for Cooperation on Agriculture–IICA (<http://www.iica.int/Eng/Pages/default.aspx>). In Africa, information sources for the agricultural markets situation include RATIN-Regional Agriculture Trade Intelligence Network, Eastern Africa Grain Council (<http://www.tradeafrica.biz/default.asp>); and OT Africa Line (<http://www.otal.com/Services/mrktreps.htm>) which produces monthly commodity reports on the latest information covering West African commodities, including food commodities as well as cocoa, coffee, cotton, rubber and timber. For China, the Ministry of Agriculture provides economic information on international prices for major agricultural products; and Beijing Orient Agribusiness Consultant Ltd – BOABC (<http://www.boabc.com/index.shtml>) is a professional service providing agricultural consultation, while Cnagri.com (<http://en.cnagri.com/>) offers information on the agricultural sector, including reports on the agricultural sector which are not open to the public.

Additional information for individual food commodities can be obtained in the case of rice from International Rice Research Institute and the French agricultural research organization CIRAD, *Monthly Report on the World Markets of Rice* (http://www.cirad.fr/ur/politiques_et_marches/actualites/evenements/osiriz); in the case of oilseeds, oils and meals, Oil World offers frequent

⁷ The European Commission publishes every year a comparative analysis of the projections of the agricultural outlooks of OECD-FAO, FAPRI and USDA. It can be accessed at: http://ec.europa.eu/agriculture/analysis/tradepol/worldmarkets/index_en.htm.

information products (<http://www.oilworld.biz/app.php?ista=5d37b2236243650d73614f3885e94ec1>). For sugar the source of reference is the International Sugar Organization: <http://www.isosugar.org/Publications/publication.aspx>. Its information products (on subscription) include: The *Sugar Yearbook* that gives a comprehensive coverage of sugar production, consumption, trade and stocks. The monthly *Statistical Bulletin* provides updates on the world sugar situation between Yearbooks; the *quarterly market outlook* is a mid-term analysis on sugar and sweeteners market developments and provides complete world balance estimates covering sugar production, consumption, trade and stocks; the *monthly market report* is a brief report on the market for the previous month plus comprehensive press summary from news agencies, newspapers and other periodicals covering all the important sugar developments during that month; and the *World Sugar Balances* produced four times a year in conjunction with the ISO Quarterly Market Outlook, which provide current forecasts and historical data (seven year series) on production, consumption, imports, exports and stocks on the country-by-country basis, as well as regional and world totals for October/September crop years.

B. Tropical beverages

In general, apart from the information by commodity provided by FAO (<http://www.fao.org/economic/est/commodity-markets-monitoring-and-outlook/en/>) and USDA (<http://www.fas.usda.gov/commodities.asp>) at the global level, most information on individual non-food agricultural commodities is normally offered by specialized study groups, committees or organizations.⁸ Initially, most of the commodity bodies were mainly focused on price stabilization purposes and therefore they played a major role in the regulation of the markets for their respective commodities.⁹ However, after the failure of the International Commodity Agreements and following the trend towards the predominance of the free play of market forces since the 1980s, their role on price stabilization was drastically weakened. In the process of re-designing their objectives, their contribution to market transparency by the provision of information became one of the major functions of these organizations.

The comprehensive historical statistical data on coffee of the International Coffee Organization – ICO (<http://www.ico.org/>) comprises annual, quarterly, monthly and daily data from as far back as 1964 on exports, imports, market prices, prices to growers, production, stocks and inventories. Regular ICO publications include: *Daily Prices* (ICO composite and group indicators – website only); *Monthly Trade Statistics on exports, imports and re-exports*; *Monthly Prices* (ICO composite and group indicators) on the New York, German and French markets; and *Coffee Statistics*, published quarterly, which provides information on production, exports, imports, re-exports, market prices, prices to growers and values of imports and exports. Analyses of the evolution of fundamentals in the coffee market are also provided in the *Monthly Coffee Market Report*.

The International Cocoa Organization (<http://www.icco.org/>) publishes a *Monthly Review of the Cocoa Market Situation* which reports on the latest developments on the international cocoa futures markets as well as on the supply and demand for cocoa beans and other factors influencing the cocoa trade. The *Quarterly Bulletin of Cocoa Statistics* provides reliable data and up-to-date analysis on the cocoa economy from 1960 onwards covering most cocoa producing and importing countries. ICCO also provides information on prices on a daily basis. The Statistics Section carries out various studies on the cocoa market, some of which can be found on the statistics web page: assessment of the movements of global supply and demand, reviewing in detail the developments in the world cocoa market during the past ten years; report on the annual ICCO survey of cocoa bean stocks which

⁸ Most of the information provided on individual commodities by these organizations, committees and study groups is not publicly available, as it is on subscription. The International Coffee Organization is a notable exception.

⁹ See Osorio (2009) and OECD (2011).

surveys warehouse-keepers to determine stocks of cocoa beans at the end of each crop year; assessment of world stocks of cocoa beans as at 30 September, which contains information on recently published estimates of world cocoa bean stocks, assesses their accuracy and attempts to identify their location as at 30 September of each crop year.

Finally, for tea the information products of the International Tea Committee (<http://www.inttea.com/>) include *Annual Bulletin of Statistics* with data for ten years on acreage, production, exports and imports by country, world supply/absorption, quantities sold/average prices at auctions, etc. and data for five years on exports by countries of destination, imports by countries of origin, monthly average prices for various auction centres, etc., export/import duties for selected countries; and the *Monthly Statistical Summary* with data on latest monthly and cumulative production, exports and imports with corresponding figures for previous year and latest weekly details of total quantities sold and average prices for various auction centres with corresponding data for previous year.

C. Agricultural raw materials

In the case of cotton a major information source of reference is the International Cotton Advisory Committee – ICAC (<http://www.icac.org/>). Its statistics are not publicly available, but some analysis, publications and presentations can be freely accessed from its website. The Economics and Statistics Information Section (ESIS) collects data on the cotton market worldwide and is a leading source of international data on the world cotton industry. It estimates cotton supply by country, forecasts cotton supply and use by country, and tracks exports by destination and imports by origin. It also measures and forecasts cotton consumption and cotton's share of fiber demand in the world and by region and is the primary source in the world for statistics on fiber demand. ESIS also forecasts the season-average Cotlook A Index (a global indicator of cotton lint prices) with an econometric model based on cotton market fundamentals: the ICAC Price Model 2007. The Secretariat draws upon coordinating agencies in member countries as well as other official and private sources in both member and non-member countries to compile statistical data. The analysis of ICAC can be complemented by the daily and weekly analyses that the company Cotton Outlook offers to its clients (<http://www.cotlook.com/>).

For natural rubber, the reference source at the international level is the International Rubber Study Group – IRSG (<http://www.rubberstudy.com/>). Data on production, consumption, trade and prices – both natural rubber and synthetic rubber – are published on a quarterly basis in the Secretariat's *Rubber Statistical Bulletin*. An analysis of the statistics is given in the quarterly *Rubber Industry Report*. The Secretariat also prepares forecasts of rubber production and consumption, and undertakes statistical studies, where appropriate, on specific aspects of the industry. Short-term forecasts (current year and next year) are also presented in the *Rubber Industry Report*, while longer-term forecasts are given in the semi-annual report the *World Rubber Industry Outlook*. Furthermore, the Association of Natural Rubber Producing Countries (<http://www.anrpc.org/>) provides information on Natural Rubber Trends and Statistics on a monthly basis (from January 2011, only to subscribers). In natural rubber, information on the evolution of production in Thailand, Indonesia and Malaysia is very relevant, as these three countries account for about 70 per cent of world production.

In the case of tropical timber, the International Tropical Timber Organization – ITTO (<http://www.itto.int/>) publishes the *Tropical Timber Market (TTM) Report*, an output of the ITTO Market Information Service (MIS) every two weeks with the aim of improving transparency in the international tropical timber market. The TTM provides market trends and trade news from around the world, as well as indicative prices for over 400 tropical timber and added-value products. ITTO's *Annual Review and Assessment of the World Timber Situation* compiles the most up-to-date and reliable international statistics available on global production and trade of timber, with an emphasis on the tropics. It also provides information on trends in forest area, forest management and the economies of ITTO member countries. In addition, the Forestry & Timber Section of the United Nations Economic Commission for Europe and FAO is also a reference source of information, data and analysis on timber (http://timber.unece.org/index.php?id=2&unece_menu_id=1).

IV. INFORMATION ON ENERGY COMMODITY MARKETS

Regarding energy commodities, the most comprehensive source of data for the particular case of oil is the *Joint Oil Data Initiative – JODI* (<http://www.jodidata.org/>). It includes 90 countries members of different organizations (Asia-Pacific Economic Cooperation, EUROSTAT, International Energy Agency, Latin American Energy Organization, Organization of the Petroleum Exporting Countries and United Nations Statistics Division), which represent about 90 per cent of global oil supply and demand. The *JodiOil World Database* is freely available and it is updated once per month. The database consists of seven product categories: crude oil, liquefied petroleum gas, gasoline, kerosene, diesel oil, fuel oil and total oil products; eight flows: production, demand, refinery intake and output, imports, exports, closing stock levels and stock change; data in three different units: barrels, tons and litres; data for more than 90 participating countries; data from January 2002 to one month-old.¹⁰

From the perspective of the major energy consuming countries, the monthly assessment of the situation of supply, demand, stocks, prices and refinery activity of the International Energy Agency (IEA) is available through the *Oil Market Report* online service (<http://omrpublic.iea.org/>). The IEA also publishes, among others, the *Medium-Term Oil and Gas Markets* which presents a comprehensive outlook for oil and gas market fundamentals over the next three to five years. On the other side, among the market information products of the Organization of the Petroleum Exporting Countries (OPEC), the *Monthly Oil Market Report* (http://www.opec.org/opec_web/en/) covers major issues affecting the world oil market and provides an outlook for crude oil market developments for the coming year. The report offers a detailed analysis of key developments impacting oil market trends in world oil demand, supply as well as the oil market balance.

At the national level of the Government of the United States, the Energy Information Administration – EIA (<http://www.eia.gov/>) provides a multiplicity of data and analysis on the situation of United States and global energy markets, with different time frequencies, as for example, the monthly *Short-term Energy Outlook*, the *Monthly Energy Review* or the *International Energy Outlook 2010* which presents an assessment of the outlook for international energy markets through 2035. Furthermore, Natural Resources Canada (<http://nrcan.gc.ca/eneene/index-eng.php>) provides statistical information, analytical reports and other documentation on Energy in Canada.

In the private sector, information can be provided by major oil producing companies, whose views may be highly regarded by the industry.¹¹ These companies can offer in their websites useful information on their views about the evolution of the markets, for example in the presentations provided to investors in relation to their operations and results or at different conferences about the sector. In this context, the most relevant source of information on energy is the widely used *British Petroleum, Statistical Review of World Energy* (annual) which offers objective data about world energy, markets and trends, which are also publicly available. The review can be accessed at: <http://www.bp.com/sectionbodycopy.do?categoryId=7500&contentId=7068481>.

In addition, Cambridge Energy Research Associates, IHS-CERA (<http://www.ihc.com/products/cera/>) is a leading advisor to different clients, including international energy companies, governments, financial institutions, and technology providers. IHS CERA delivers critical knowledge and analysis on energy markets, geopolitics, industry trends, and strategy.

¹⁰ An assessment of the current situation of the JODI database can be found in the Intermediate Report on “Improving the quality of the JODI Database” that the six agencies prepared for the G-20 Finance Ministers’ meeting on 19 February 2011, Paris, France. The report is available at: http://www.ief.org/whatsnew/Documents/Improving_the_quality_of_the_JODI_Database_Intermediate_Report_to_G20.pdf.

¹¹ See, for instance, *Financial Times*, Exxon chief on supply, demand and \$120 crude, 20 April 2011.

According to its website, the *Oil & Gas Journal* (<http://www.ogj.com/index.html>) is the world's most widely read petroleum industry publication. Each week the Journal delivers the latest international oil and gas news; analysis of issues and events; practical technology for design, operation and maintenance; and important statistics on international markets and activity. Oil & Gas Journal provides weekly oil statistics covering production, consumption, refining, imports and exports, stocks, prices and Smith & Baker Hughes rig count statistics from Pennwell Publishing's Oil & Gas Journal; Prices for over 40 different worldwide crudes. Statistical information is available through the website of PennEnergy Research: <http://ogjresearch.stores.yahoo.net/index.html>.

Platts (<http://www.platts.com/>) is also a leading global provider of energy and metals information and a foremost source of benchmark price assessments in the physical energy markets. It produces a number of real time information products in the form of, for example, end-of-day and intra-day oil prices and the latest oil news, market commentary and analysis. Similarly, *Argus* (<http://www.argusmedia.com>) publishes a full range of business intelligence reports, market assessments and special studies regarding all aspects of energy, transport and emissions markets. It provides other energy-related services including data feeds, conferences and tailor-made research.

Furthermore, the *Centre for Global Energy Studies* (<http://www.cges.co.uk/>) provides to its clients in-depth studies and reports on oil and gas issues, focusing on oil demand, supply and price movements and forecasts; the futures market; OPEC policy; Geopolitics of the Middle East, the Former Soviet Union, Africa and other oil and gas producing regions.

For the longer term, OPEC's outlook looks to trends in the oil market to 2030, while those of IEA and EIA look forward to 2035. Private oil companies like BP and Exxon Mobil also publish outlooks for 2030, while that of Shell is up to 2050.¹²

V. INFORMATION ON METALS AND MINERALS MARKETS

A. Precious metals

The World Gold Council (<http://www.gold.org/>) is the market development organization for the gold industry. Its market intelligence is a rolling programme of data collection and analysis, which produces several distinct sets of statistics including: price graphs and spreadsheets of daily, monthly and annual gold prices in different currencies; demand and supply statistics detailing gold consumption and demand and supply flows; and gold reserve statistics data on central bank holdings of gold.

The Silver Institute (<http://www.silverinstitute.org/>) is an international association of miners, refiners, fabricators, and wholesalers of silver and silver products, which provides surveys and reports on the silver market.

GFMS (<http://www.gfms.co.uk/index.htm>) is the world's foremost precious metals consultancy, specializing in research into the global gold, silver, platinum and palladium markets. Moreover, GFMS Metals Consultancy offers monthly and quarterly reports on all the base metals and steel. GFMS provides assessments of the global supply and demand of the above metals, as set out in the *Gold Survey*, the *World Silver Survey* and the *Platinum & Palladium Survey*. These surveys provide an in-depth analysis of developments in individual markets and contain a wealth of historical statistics on production, recycling, trading, fabrication and consumption.

¹² These outlooks can be accessed from the website of the International Energy Forum at: <http://www.ief.org/EnergyOutlook/Pages/default.aspx>.

The leading authoritative source for platinum group metals is Johnson Matthey, through its Platinum Today site (<http://www.platinum.matthey.com/publications/>). It publishes a market review of supply and demand for the platinum group metals twice a year. Furthermore, a database is accessible at the website with data tables which contain estimates of supply and demand. It also provides price charts as well as monthly and weekly reports on prices.

B. Other metals and minerals

The World Bureau of Metal Statistics – WBMS (<http://www.world-bureau.com/index.html>) is the most comprehensive international data resource of reference for stakeholders involved in the global metals industry. It provides regular publications or surveys tailored to specific needs. WBMS collects and collates data from a huge number of global sources on production, consumption and trade in the major non-ferrous metals. In particular, its monthly *World Metal Statistics Bulletin* offers full up-to-date information on non-ferrous metal markets.

Raw Materials Group (<http://www.rmg.se/>) compiles and analyses mining data, mainly through its proprietary database *Raw Materials Data*; it is a versatile production-side database, containing more than 24,000 mining industry entities, and covering precious, base and ferrous metals as well as ferroalloys and coal. Raw Materials Data gives clients the access to detailed mine information for Metal and Coal: grades, production information (metal and ore), resources, reserves, mining methods, and contact details. It also offers project lists, which allow to know about projects in the pipeline – where they are located in the world, at which project stage (Greenfield, Brownfield, conceptual, prefeasibility, feasibility, construction), what type of mining operation (open pit versus underground), estimated production capacity, capital costs, and more. The group also conducts market and industry surveys, prepares global exploration and project reports, monitors and analyses production, ownership and mergers and acquisitions, and prepares customized database extracts. It provides information on ownership and control of production, making it possible to track structural changes within the industry.

Metals Economics Group – MEG (<http://www.metalseconomics.com/default.htm>) is the primary source of information and analysis on global minerals exploration, development, and production; strategic planning issues; and acquisitions activity. The group produces the annual *World Exploration Trends* – A Special Report from Metals Economics Group for the PDAC International Convention. The Metals Economics Group *Strategic Report* is a bimonthly information service covering strategic issues in worldwide metals and minerals exploration, development, and production. The MEG *Industry Monitor* provides a series of comprehensive graphs and charts illustrating MEG's analysis of monthly changes and emerging trends in the base and precious metals pipeline. MEG *Corporate Exploration Strategies* (CES) is the industry's benchmark for exploration trends and strategic analysis, and the only comprehensive source of global mining exploration budgets. Published annually, CES examines both corporate and industry-wide exploration activities.

At the level of the national governments, the Mineral Resources Program of the United States Geological Survey (<http://minerals.usgs.gov/>) provides data and information by country and mineral commodity. Its key publications include the *Minerals Yearbook* which reviews the mineral industries of the United States and of more than 180 other countries. It contains statistical data on minerals and materials and includes information on economic and technical trends and developments; the *Mineral Commodity Summaries*, published on an annual basis, furnishes estimates covering nonfuel mineral industry data. Data sheets contain information on the domestic industry structure, Government programs, tariffs, and 5-year salient statistics for more than 90 individual minerals and materials; the *Mineral Industry Surveys* are periodic statistical and economic reports designed to provide timely statistical data on production, distribution, stocks, and consumption of significant mineral commodities. The surveys are issued monthly, quarterly, or at other regular intervals; *Metal Industry Indicators* is a monthly publication which analyses and forecasts the economic health of three metal industries (primary metals, steel, and copper) using leading and coincident indexes.

Furthermore, the Australian Bureau of Agricultural and Resource Economics and Sciences – ABARES (<http://www.abares.gov.au/>) publishes the *Australian Mineral Statistics*, in addition to the publications on commodities mentioned above, which also include information on minerals and metals. Moreover, Natural Resources Canada (<http://www.nrcan-rncan.gc.ca/mms-smm/busi-indu/index-eng.htm>) collects and analyses information on Canada's as well as global minerals and metals markets. It also conducts commodity, industry and market research, through information products, such as the *Mineral and Metal Commodity Reviews* and the *Canadian Minerals Yearbook*, and statistics on annual and monthly basis on mineral production, exploration, use and trade in Canada. In the United Kingdom, MineralsUK (<http://www.bgs.ac.uk/mineralsuk/home.html>), the British Geological Survey's Centre for Sustainable Mineral Development, compiles statistics of mineral production and trade for the United Kingdom and the world. The data are published as annual books and ad-hoc/customised reports to suit particular requirements.

As it is the case for individual agricultural commodities, the major reference sources of information on individual minerals and metals are the specialized study groups.¹³ The International Copper Study Group – ICSG (<http://www.icsg.org/>) is an intergovernmental organization that serves to increase copper market transparency and promote international discussions and cooperation on issues related to copper. Its major publications include the ICSG *Copper Bulletin* (monthly) which contains statistics on copper and copper products, their production, consumption and trade by country, providing a global view of supply and demand and the ICSG *Statistical Yearbook* which includes annual statistics on copper and copper products, their production, usage and trade by country, as well as stocks and exchange prices, providing a global view of supply and demand for the past 10 years. The Yearbook serves as a useful tool for consultations and analysis on the longer term evolution of world copper production, usage, stocks and prices.

In the case of copper, since exports from Chile account for about 40 per cent of total exports, information from the Chilean Copper Commission – COCHILCO (<http://www.cochilco.cl/english/index.asp>) is of great relevance for developments in global markets. COCHILCO produces statistics and reports on the copper market with different time frequencies, including the *Weekly World Copper Market Review* and the *Copper Market Quarterly Review*.

Similarly, the International Nickel Study Group (<http://www.insg.org/>) collects and publishes statistics on nickel markets (including production, consumption, trade, stocks, prices and other statistics such as recycling). The Study Group produces a monthly bulletin on *World Nickel Statistics*. The International Lead and Zinc Study Group (<http://www.ilzsg.org/static/home.aspx>) provides continuous information on the supply and demand position of lead and zinc and its probable development and makes special studies of the world situation in lead and zinc. Its monthly *Lead and Zinc Statistical Bulletin* offers detailed updated information on lead and zinc supply, demand, trade, stocks and prices.

The International Aluminium Institute (<http://www.world-aluminium.org/Home>) collects statistical and other relevant information on aluminium and communicates it to the industry and its principle stakeholders. However, the institute does not collect or supply any price-related information, it does not hold statistics on metal consumption or demand, nor does it supply information on individual companies' production.

There is no international organization which is specifically in charge of iron ore. Nevertheless, market information on this commodity is provided by the UNCTAD Trust Fund Project on Iron Ore Information in collaboration with the Raw Materials Group (<http://www.unctad.org/infocomm/Iron/covmar08.htm>). Three annual reports on iron ore are published in the context of this project (*The Iron Ore Market*, *Iron Ore Statistics and Statistical update*). They

¹³ While the regular publications that these study groups publish are generally on sale, their websites provide a wide range of information in different formats, such as presentations or press releases which are available to the general public.

provide the only global up-to-date, accurate and comprehensive information on developments in the world market for iron ore, including both statistical data and analyses.¹⁴

The above mentioned Platts also offers comprehensive real-time information for the metal sector in the form of news, benchmark metals price assessments from around the globe, market commentary and analysis, like for example *Platts Metals Alert* and *Platts Metals Week*. In addition, the company CRU (<http://crugroup.com/Pages/default.aspx>) provides industry and market analysis for the copper, lead, tin and zinc industries. The Precious Metals team monitors the markets for gold, silver and platinum group metals (including palladium and rhodium). It provides fundamental analysis of the markets together with short-term and long-term forecasts through regular monitors and quarterly market outlooks and a range of other reports.

Furthermore, as the minerals and metals sector is characterized by the presence of several large and concentrated players on the production side, whose views can have an impact on the markets, information on market developments that they provide may also be of use. This kind of information can be in the form of presentations by main mining companies at different fora or in connection with their results reporting. Examples of these major mining companies include:

BHPbilliton (<http://www.bhpbilliton.com/bb/home.jsp>);

Riotinto (<http://www.riotinto.com/>);

AngloAmerican (<http://www.angloamerican.com/aal/>);

Xstrata (<http://www.xstrata.com/>);

Vale (<http://www.vale.com/en-us/Pages/default.aspx>);

Alcoa (<http://www.alcoa.com/global/en/home.asp>);

Codelco (<http://www.codelco.com/index1.asp>);

Freeport-McMoRan Copper & Gold Inc. (<http://www.fcx.com/>).

A number of consulting companies also look at the situation in the minerals and metals sector, with a special focus on its market structure. These include Ernst&Young (<http://www.ey.com/GL/en/Industries/Mining---Metals>), KPMG through, for example, its Mining Executive Forum Overview (http://www.kpmg.com/AE/en/IssuesAndInsights/ArticlesPublications/Pages/Outlook_2010_Mining.aspx),¹⁵ and PricewaterhouseCoopers LLP, PWC (<http://www.pwc.com/gx/en/energy-utilities-mining/>).

Finally, the annual publication entitled *Global Mining Finance* offers an overview of the industry from a worldwide perspective and information on how the markets evolve and also on forecasts, as well as the situation in the sector by region (<http://www.globalminingfinance.com/index.html>). And Bloomsbury Minerals Economics (<http://www.bloomsburyminerals.com/index.html>) offers a number of products on metal price analysis.

¹⁴ Obtaining more up-to-date information on the iron ore market is relatively difficult. For example currently it is not very clear which the reference price for this mineral is. Until recently, the price of iron ore was determined in annual negotiations between producing and consuming companies. Since 2010, the annual negotiations were abandoned and prices are now set on a quarterly or on a spot basis.

¹⁵ In general, these consulting companies offer services in relation to different industries, so that they may also provide information on the energy sector.

VI. ADDITIONAL INFORMATION ON COMMODITY MARKETS

A. Information from international organizations and other sources

Additional information on commodity prices and market developments, which normally refer to all commodities or commodity groups, can be obtained from sources of other international organizations such as the United Nations Conference on Trade and Development, *UNCTAD Commodity Price Statistics online*, which can be accessed through the UNCTAD statistics portal, UNCTADstat (<http://unctadstat.unctad.org>), the International Monetary Fund, *IMF Primary Commodity Prices* (<http://www.imf.org/external/np/res/commod/index.asp>), which includes weekly data, and the World Bank, *monthly Commodity Price Data* (pink sheet), which is included in its monthly publication, the *Commodity Markets Review* (<http://externalization.worldbank.org/external/default/main?theSitePK=2880771&piPK=64691875&pagePK=64691887&contentMDK=21148682>). In addition, in response to the food crisis, the World Bank has also recently launched the monthly *Food Price Watch* (http://www.worldbank.org/foodcrisis/foodpricewatch/april_2011.html) which analyses trends in food prices.

Analyses which assess commodity markets from a wider macroeconomic perspective are offered in annual reports such as the *UNCTAD Trade and Development Report* (<http://www.unctad.org/Templates/Page.asp?intItemID=3742&lang=1>) and the *United Nations World Economic Situation and Prospects* report (<http://www.un.org/en/development/desa/policy/wesp/index.shtml>). This kind of analysis is also included in the *World Economic Outlook* (<http://www.imf.org/external/pubs/ft/weo/2011/01/index.htm>) of the IMF, and the monthly briefs on *Developing Trends of the Development Prospects Group* (<http://externalization.worldbank.org/external/default/main?theSitePK=2880771&piPK=64691875&pagePK=64691887&contentMDK=21204967>) of the World Bank, as well as the annual *Global Economic Prospects*. In this context, the World Bank also offers *Commodity Forecasts* for about the following decade.

Outside the international organizations framework, the annual report on commodities by Cercle Cyclope (in French), is also a reference source for information on developments in these markets. This firm also publishes a monthly brief on commodities (<http://www.cercle-cyclope.com/>). Furthermore, the *HWWI Commodity Price Index* (<http://hwwi-rohindex.de/Start.2660.0.html?&L=1>) of the Hamburg Institute of International Economics provides information on price indices in euros as well as in dollar terms. It is updated regularly with daily figures being calculated once every week and is available on a paid subscription basis.

When they include prices, most of these sources refer to monthly and sometimes weekly prices. Apart from sources mentioned above, such as Platts, daily commodity prices can be obtained from Reuters Commodities (<http://www.reuters.com/finance/commodities>) as well as from Bloomberg (<http://www.bloomberg.com/markets/commodities/futures/>). Daily prices for metals can also be obtained from Metal Bulletin (<http://www.metalbulletin.com/>), Metal Prices (<http://www.metalprices.com/>), Kitco (<http://www.kitco.com/>) or InfoMine (<http://www.infomine.com/commodities/>). Daily information on prices can also be found in the Asian Development Bank: Asia Regional Integration Center - Asian Macroeconomic Developments - *Daily Market Watch* (<http://aric.adb.org/daily.php>).

Commodity forecasts are also offered by companies specialized in market intelligence, such as Business Monitor International or LMC International (agricultural commodities) and Economist Intelligence Unit (EIU) Global Forecasting Service (<http://gfs.eiu.com/>). EIU published its commodity forecasts on a quarterly basis until the first quarter of 2010; they are published on a monthly basis since then. In addition, the Working Group on Commodity Prices of the Association of European Business Cycle Institutes (AIECE) publishes the report on World Commodity Prices twice a year with price forecasts for the next two years (<http://sites-test.uclouvain.be/aiece/password/commodity.html>).

JBC Energy (<http://www.jbcenergy.com/>) is another market intelligence consulting company which offers information on energy; its energy's statistical modelling team has developed a supply, demand and price model that provides JBC Energy's assessment of fundamental data in the market. With this model the company performs market studies (i.e. projecting refinery capacity and configuration), forecasts oil demand by region, by product and by sector, provides detailed coverage of different products, breaks down demand/supply balances and trade flows by product/crude, by sector and by country and makes margin analysis and outright price forecasts.

In a similar way, the company Wood Mackenzie (<http://www.woodmacresearch.com/cgi-bin/wmprod/portal/energy/portalup/index.jsp>) is also a very comprehensive source of knowledge about the world's energy and metals industries. It offers analyses and advise on every stage along the value chain to provide clients with the commercial insight on these products. Moreover, Commodities Research Bureau, CRB (<http://www.crbtrader.com/default.asp>), which mainly focuses on commodity futures information, also provides its clients with analysis and data on the evolution of fundamentals in the physical commodity markets.

B. Information on commodities from investment banks and financial institutions

In recent years, as investment banks and other financial institutions have become more and more involved in the commodities investment business, their commodity research departments have increased their offer of analysis on commodity market developments. In this context, the views on the evolution and prospects for the commodity markets provided by some of the major financial institutions dealing with commodities have become widely influential in the market. As an illustration, the retreat of investors from commodities and the corresponding price decline in mid-April 2011 that followed Goldman Sachs note to its clients recommending taking profits and sell commodities (Goldman Sachs, 2011a) can be an indication of the market power of these institutions which may act as market movers.¹⁶ Commodity prices were on the downward trend over a few weeks following the announcement of Goldman Sachs, and they suffered one of the sharpest one-day falls on record.¹⁷ Shortly after that, a new note was issued on 23 May 2011 (Goldman Sachs, 2011b), where they reversed the advice and called for an end to the correction, stating that they remained "structurally bullish" on the oil market. Again, this immediately triggered an increase in prices. As Reuters markets analyst, John Kemp, has put it "In some sense, Goldman forecasts have become a market fundamental".¹⁸

Some examples of information products in this context include: *Commodity Daily Briefing*, *Weekly Oil Data Review*, *Commodities Weekly*, *Metals & Mining Monthly*, *The Commodity Refiner*, *Oil Sketches*, *Metals Magnifier*, *Global Energy Outlook* (Barclays); *Commodity Watch*, *Agriculture Watch*, *Commodities Outlook* (Goldman Sachs); *Agri-view*, *Agricultural Forecasts*, *Commodities Comment*, *Commodities Compendium*, *The Oil & Gas Specialist* (Macquarie); *Commodity markets outlook and strategy* (JP Morgan); *Commodity Outlook*, *Global energy weekly*, *Medium-term crude oil outlook to 2015* (Bank of America-Merrill Lynch); *Commodity Outlook* (Morgan Stanley); *Oil and Commodities Monthly* (Nomura); *Commodities Quarterly*, *Commodities Outlook*, *China Commodities database* (Deutsche Bank); *Oil Markets Comment*, *Metals Market Comment* (BNP Paribas); *Commodity Outlook* (Credit Suisse); *Weekly Commodities Views*; *Soft Commodities Advisory* (CPM Group); *Commodity Strategy* (Sarasin); *Commodities: Daily* (Standard Bank).

¹⁶ See *Financial Times*, Goldman triggers commodity retreat, 13 April 2011 and *Financial Times*, Barclays takes pop at Goldman over future path of crude price, 16 April 2011.

¹⁷ See *Financial Times*, Goldman says Brent will hit \$130, 25 May 2011.

¹⁸ See *Reuters*, Goldman's gyrating forecasts test its influence, 25 May 2011.

While many of these information products are provided only to the clients of these financial institutions and banks, some of them offer the information open to the general public. These include:

The Goods - A Monthly Commodity Watch:

<http://www.bmonesbittburns.com/economics/topic.asp?commodities> (BMO Capital Markets:);

Commodities daily, Commodities Weekly: <http://www-2.danskebank.com/danskeresearch> (Danske Bank);

Commodity Price Forecast Update: <http://www.td.com/economics/index.jsp> (TD Economics);

Commodity Price Index: http://www.scotiacapital.com/English/bns_econ/bnscomod.pdf (Scotiabank);

Commodity Outlook: <http://www.hypovereinsbank.de/portal?view=/research/213681.jsp> (Unicredit);

Commodity Price Monitor: <http://www.rbc.com/economics/market/> (RBC);

Commodity Trends:

http://www.desjardins.com/en/a_propos/etudes_economiques/previsions/tendances-matieres/ (Desjardins); and

Special Commodities Updates: <http://www.smctradeonline.com/commodities-updates.aspx> (SMC).

C. Information on commodities from specialized websites and media

Specialized websites on commodity news and information are also useful to access the most up-to-date news on events and developments affecting commodity market fundamentals. These include sources such as:

Commodity online (<http://www.commodityonline.com/>);

Commodities Now (<http://www.commodities-now.com/>);

Commodity Insights (<http://www.commodityinsights.com/index.aspx>);

Commod@frica (<http://www.commodafrica.com/fr/accueil>);

Oxford Economics, Commodity Price Monitor

(http://www.oxfordeconomics.com/OE_FA_Display_Frm.asp?Pg=CPM&Txt=International%20Macroeconomics).

The Public Ledger (<http://www.agra-net.com/portal2/pl/home.jsp>);

Agranet (<http://www.agra-net.com/portal2/home.jsp>);

World Grain.com (<http://www.world-grain.com/Default.aspx>);

AgManager (<http://www.agmanager.info/>);

AgResource (<http://www.agresource.com/>);

Grain Net (<http://www.grainnet.com/index.html>);

Rice online (<http://www.riceonline.com/>);

Oryza (<http://oryza.com/World-News/>);

Oils&Fats International (<http://oilsandfatsinternational.com/prev/>);

Kingsman (<http://www.kingsman.com/>);

Marchés Tropicaux et Méditerranéens (<http://www.mtm-news.com/homepub>);

Platts (<http://www.platts.com/NewsandAnalysisHome>);

Rigzone (<http://www.rigzone.com/>);

WTRG Economics (<http://www.wtrg.com/>);

Energy Intelligence (<http://www.energyintel.com/>);

Base Metals (<http://www.basemetals.com/>);
Bullion Desk (<http://www.thebulliondesk.com/>);
Opalesque (http://www.opalesque.com/Commodities_Briefing/?logon=Guest);
Kitco – Gold and precious metals (<http://www.kitco.com/>);
Kitco – Base Metals (<http://www.kitcometals.com/>);
Metal Bulletin (<http://www.metalbulletin.com/>);
Mining Weekly (<http://www.miningweekly.com/>);
Mining Journal (<http://www.mining-journal.com/>);
Mining Review (http://beta.miningreview.com/week_at_a_glance);
Resource Investor (<http://www.resourceinvestor.com/Pages/default.aspx>);
Mine Web (<http://www.mineweb.com/mineweb/view/mineweb/en/page102055>);
Info Mine (<http://www.infomine.com/news/>);
London Bullion Market Association (<http://www.lbma.org.uk/pages/index.cfm>);
China Metals Information Network (<http://www.antaike.com/gj/index.asp>);
Asian Metal (<http://www.asianmetal.com/>).

Furthermore, the UNCTAD's portal on commodities information, *INFOCOMM* (<http://www.unctad.org/infocomm/anglais/indexen.htm>), is a useful tool to access different links of interest for individual commodities.

In addition, specialized media on financial and economic news can be of use for keeping informed and updated on developments in international commodity markets. However, in recent years it is possible to observe the dominance of the financial aspects over physical fundamentals; most of the commodity experts quoted in the press represent the financial institutions, while the presence in the press of those actors involved in the physical markets is much lower. Among these specialized media, Thomson Reuters offers daily commodities briefs for different commodity groups, such as the *Inside Commodities*, *Inside Oil*, *Inside Agriculture* and *Metals Insider* (http://salesandtrading.thomsonreuters.com/commodities_preference/).

Other examples include the Financial Times, which offers daily news on the evolution of the commodity sector, as well as special reports on commodities and on oil and gas about twice per year, Bloomberg Commodity News or the Wall Street Journal and Les Echos, as well as Business Standard. Roubini Global Economics also offers specific information for commodities.

D. Commodity exchanges

Information from commodity exchanges may also be useful for different market participants, particularly in what relates to prices. In developing countries, commodity exchanges may help in this regard, by assuming the function of information provider for the different actors in the physical markets, which other institutions may not be able to offer.¹⁹

Major commodity exchanges around the world, which can be useful sources for information purposes, include CME Group (<http://www.cmegroup.com/>), Intercontinental Exchange, mainly focused on energy commodities (<https://www.theice.com/homepage.jhtml>), LIFFE for agricultural products

¹⁹ See UNCTAD (2009b).

(<http://www.euronext.com/landing/liffeLanding-12601-EN.html>), Kansas City Board of Trade for wheat (<http://www.kcibt.com/>) and London Metal Exchange, LME (<http://www.lme.com/>) and the Shanghai Futures Exchange (<http://www.shfe.com.cn/Ehome/index.html>) for metals. Other relevant commodity exchanges in developing countries are Multi Commodity Exchange of India, MCX (<http://www.mcxindia.com/home.aspx>), Singapore Commodity Exchange (<http://www.sicom.net/>), SAFEX Commodity Derivatives Market in South Africa (<http://www.jse.co.za/Markets/Commodity-Derivatives-Market.aspx>), the Bolsa de Cereales for grains in Argentina (http://www.bolsadecereales.com/i_default.asp), and Bolsa de Mercadorias & Futuros, BM&F BOVESPA, in Brazil (<http://www.bmfbovespa.com.br/en-us/home.aspx?idioma=en-us>).

E. Global conferences on commodities

Finally, a number of meetings, events or major international commodity conferences can also be regarded as potential channels for commodity market participants to capture the pulse of the markets, as they provide opportunities to share information on the developments in supply and demand.²⁰ Some examples of international conferences and meetings with a focus on commodities include:

UNCTAD's *Global Commodity Forum* (<http://www.unctad.info/en/Special-Unit-on-Commodities/Events-and-Meetings/Global-Commodity-Forum/>);

USDA *Agricultural Outlook Forum* (<http://www.usda.gov/oce/forum/index.htm>);

IGC *Annual Grains Conference* (<http://www.igc.int/en/conference/confhome.aspx>);

Global Forum on Food and Agriculture (<http://www.gffa-berlin.de/en.html>);

LME Week (<http://www.lme.com/lmeweek.asp>);

Prospectors and Developers Association of Canada (PDAC) *International Convention, Trade Show and Investors Exchange* (<http://www.pdac.ca/pdac/conv/>);

Chilean Center of Copper and Mining Studies, *CESCO Week* (http://www.cesco.cl/english/cesco_week.html);

Mining Indaba (<http://www.miningindaba.com/>);

ABARES Outlook Conference (<http://www.daff.gov.au/abare-brs/outlook>);

Inside Commodities Conference (<http://www.indexuniverse.com/insidecommodities/speaker-presentations.html>).

VII. CONCLUSIONS

This review shows that there are abundant data and information resources that may help assess the evolution of the physical fundamentals in international commodity markets. Moreover, the supply of these information products has improved and increased in recent years as a response to the turbulence in commodity markets. However, a number of information gaps and areas for improving transparency in physical commodity markets can still be identified:

- There are doubts about the reliability of data on commodity stocks and storage due to problems with data collection and the fact that a large proportion of stocks are held by private entities. In the oil sector, for instance, Khan (2009) reports that most non-OECD countries do not report data on oil inventories. There is also room for improvement in what regards the availability of data on the amount of oil stored in oil tankers in the sea. The proprietary nature of this information causes publicly available stock data to be particularly incomplete. The accuracy of information on spare

²⁰ In some cases, presentations provided by different participants at these conferences can be accessible through their websites.

capacity in the oil sector is also limited. In addition, the opacity of oil statistics implies that it takes time until the full picture of what is happening in the markets becomes clear.²¹

- In the extractive industries, improved data on reserves, as well as on expenditures on exploration and capacity improvements, could help reduce uncertainties about future shortages of energy commodities and minerals and metals.
- There is room for greater timeliness of the information and for increasing its frequency; in most cases the lowest frequency of publication of the information is on a monthly basis. Particularly in the context of food production, a useful tool could be the enhanced use of satellite technologies for estimations of planted areas and projections of crops. However, this may prove difficult in developing countries, particularly the poorest ones, due to capacity and financial constraints.
- The public availability of information could be improved, as much of the information is only available to private users who pay for access to it.
- There is a need to improve the coordination and homogenization of the existing information sources. The harmonization of data provision and a more systematic way of data presentation would greatly facilitate accessibility of available information.
- Information at the national level should be improved for key players in the commodity markets (other than Australia and the United States, for example) whose developments can have a strong impact on global markets. This is important, as the current landscape of commodity markets is changing, with emerging markets like Brazil and China becoming increasingly influential.²² In particular, the emergence of China as a key determinant of the evolution of physical commodity markets, both on the consumption and on the production side, calls for improving the availability and reliability of information about commodity markets in this country. Uncertainties about the possible evolution of China's commodity trade can contribute to increased volatility in global commodity markets.²³
- At the domestic level in developing countries, there is also a need for better data collection and analysis tools to improve understanding on how the transmission of international prices to domestic prices works, particularly in the agricultural sector. According to the FAO, the World Bank and the United Nations (2011), "Many countries, especially in the developing world, lack the capacity to produce and report even the minimum set of agricultural data necessary to monitor national trends or inform the international development debate", and they recognize that the availability and quality of agricultural statistics in developing countries has declined. In order to address this issue these organizations are proposing a global strategy to improve agricultural and rural statistics.
- In addition, emerging issues in commodity markets should be adequately integrated in the information provided, and new data should be collected. For example, currently it is not easy to assess the proportion of agricultural crops being diverted for biofuel use at the global level – although this information can be found in relation to production in the United States.

²¹ See for instance, *Financial Times*, Shockwaves from Saudi's crude statistics, 19 April 2011.

²² See also *Financial Times*, Policymakers need new commodities roadmap, 21 July 2010.

²³ For an illustration on the uncertainties on the markets regarding information about the situation in China, see, *Financial Times*, China's copper stockpiles weigh heavy on industry, 8 April 2011, which reports that as there are no official statistics, traders estimate inventories of copper in bonded warehouses at ports doubled in the last six months. However, the question is whether this means less use of copper in the country or whether smelters and participants further down the chain were running down stocks in the hope of better prices. See also, *Financial Times*, China to build cotton reserve in effort to encourage output, 31 March 2011, which reports that China considers grain and oil reserves to be a state secret. In addition, Macquarie (2008) provides some elements of discussion on the problems of China's statistics in the metals markets.

- Furthermore, there has been wider availability of information, analysis and forecasts on commodity markets provided by investment banks and financial institutions which are increasingly involved in the commodity investment business and which can be highly influential on these markets; however, their objectivity is questionable as long as research departments of these banks and financial institutions are not kept independent from their trading departments.

As a result of the above-mentioned information gaps and asymmetries, market participants may find it difficult to monitor and analyse properly the evolution of physical fundamentals of commodity markets. This implies that they often have to take their trading decisions in a context of significant uncertainty. Therefore, improving the availability of up-to-date and reliable information on commodity supply, demand and stocks is essential to facilitate the formation of accurate price expectations and the efficient functioning of commodity markets. If market participants base their decisions on little or wrong information, there is a risk that price movements will be accentuated and sizeable divergences of actual prices from fundamental values may arise.

An additional factor to consider is that even when information is available, the functioning of the markets may be distorted due to different interpretations of the information by market participants. Taking the example of oil, Singleton (2011) shows that there are significant disagreements among forecasters regarding future developments in the market, and that there is a strong positive correlation between the degree of disagreement and the level of the oil price.²⁴ The differences of opinion may send the wrong signals to the markets, as market participants may also be making inferences about the opinions of other market participants. This may lead to herding behaviour, which will cause prices to deviate from their fundamental values and consequently lead to increased volatility in commodity markets.

²⁴ Divergence in forecasts is not only found in the oil market. As an illustration, looking at the data on wheat production provided in March 2011 by the USDA WASDE report, the FAO Crop Prospects and Food Situation and the International Grains Council, Grains Market Report, it is possible to observe that while the actual data for world production in 2009 are very similar, the estimations for 2010 are of 682.59, 653.7 and 678 million tons respectively, and the projections for 2011 are 647.6, 676, and 649 million tons respectively.

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