

DYNAMICS AND NEW CHALLENGES IN THE GLOBAL COMMODITY MARKET

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Abstract: Global economy and particularly the world production of goods depends to a large extent on the supply of raw materials, of resource inputs extracted from the environment as well as an easy access to them. Commodities play an important part in the growth of global production and in the world trade in goods and services. The access to raw materials is vital for sustaining the productive capacity of the economy and also for satisfying domestic demand for industrial goods. On the other side, increasing demand for commodities and the need for assuring a sustainable supply pose great challenges on the world economy. The issue of raw materials supply represents a high-priority theme in the political agenda of the European Union. The Raw Materials Initiative launched in 2008 by the European Commission is based on three main pillars:

- *to ensure the access to raw materials on world market at undistorted conditions;*
- *to foster sustainable supply of raw materials from European sources;*
- *to reduce the EU's consumption of primary raw materials. (EC, 2008).*

To this end, EC has started to take action in order to ensure access to resources and avoid supply shortages. A great deal of attention is being paid to the study of recent developments in the global and particular commodity markets, taking into consideration fundamental aspects as supply concentration, governance of producing countries, the pressure of demand and its impact on prices, material's substitutability, stressing the role of resource consumption efficiency, recycling and substitution of vital raw materials and thus providing policy makers and industry with reliable information on how to efficiently manage resource inputs. This paper is dealing with the main developments which occurred during the past decade or so in the global commodity market, a major driver of the world economy, with particular reference to selected key-markets - as: aluminium, copper, nickel; cotton; corn, meat-swine, rice, wheat, soybeans; oil - emphasizing the issue of price volatility and new challenges in the market.

Keywords: commodities, demand, supply, market, price volatility, challenges.

JEL Classification: F 01, F 02, F 59,, F 63, Q 02, Q 11, Q 31, Q 41.

1. Introduction

Commodity markets in general and particularly oil as well as minerals and metals markets were strongly affected, since the turn of the millennium, by the uncertainties of the world economy development, food markets being largely influenced, also, by the adverse effects of the climate changes (as severe droughts or rainfalls). The price volatility increased: after decades of stagnating or falling, prices of most primary commodities rose rapidly from about 2003 to reach record levels in 2008; there followed a crash in early 2009 and a rebound in the next two years. The price corrections in 2012 - 2014 might show a trend reversal in the price movement as compared to the first decade of the millennium. This unprecedented price instability combined with an increasing financialization of commodities markets for more than a decade has brought back to attention the case of commodities.

2. Recent trends in the commodity market

The global commodity market is characterized by **rapidly growing demand** at worldwide level. During the last years, world consumption increased for all major primary raw materials, selected as representative for this research and especially metals - aluminium (+78%), nickel (+48%), copper (+36%) - but also some agricultural products as corn (+40%) and soybeans (+36%). The consumption of other selected commodities also increased, though comparatively less (meat, swine +18%, rice +15%, oil +13%, wheat +13% and cotton +10%, all between 2002-2012). (UNCTAD, 2013)

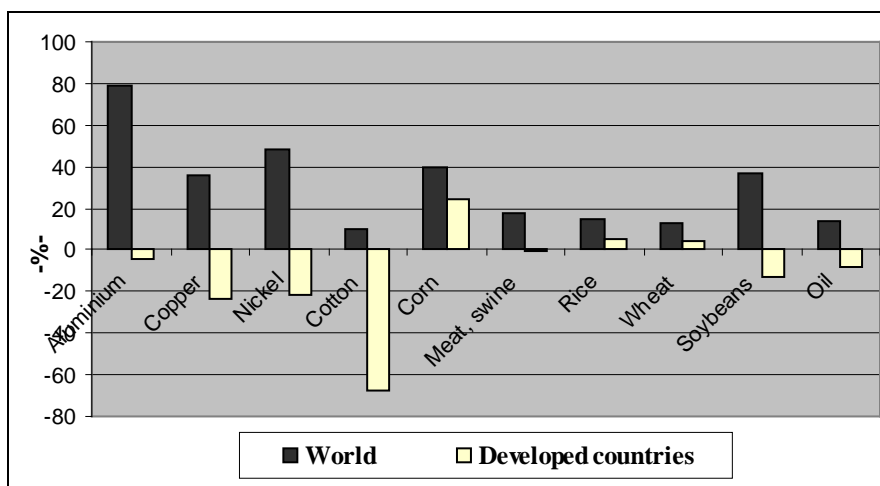
During the past decade, the commodity market was marked by **important structural shifts**.

- One major shift with a growing importance is the increasing financialization of the markets. The volume of the investment flows increased from 13 billions euro in 2003 to 170-205 billions euro in 2008 and continued to rise afterwards. (COM 2011). This factor has a significant impact on the price volatility, being able to cause large movements of prices on short term (as those of 2007 and the first half of 2008, which were considered as most probably linked to a speculative bubble that burst out with the collapse of prices in the second half of 2008 following the onset of the global financial crisis).

- Another major structural shift took place in physical market fundamentals, in the balance of the commodities demand and supply, that remain the main driving factors of price volatility, and consists of the rapid growth of demand for commodities particularly in the fast developing emerging markets and especially in China, a longer term acting factor that led to a reversal of country roles on the selected markets, to the detriment of developed countries.

Thus, unlike the general upward trend of the world demand for commodities during the decade, the consumption data for the selected commodities in developed countries showed significant declines for cotton (-68%), copper (-23%), nickel (-22%), soybeans (-13%), as well as oil (-8%) and aluminium (-4%), increasing slightly (less than the world total growth) for corn, rice and wheat. (Fig. 1)

Fig. 1 - Consumption growth of selected commodities in developed economies, 2002-2012



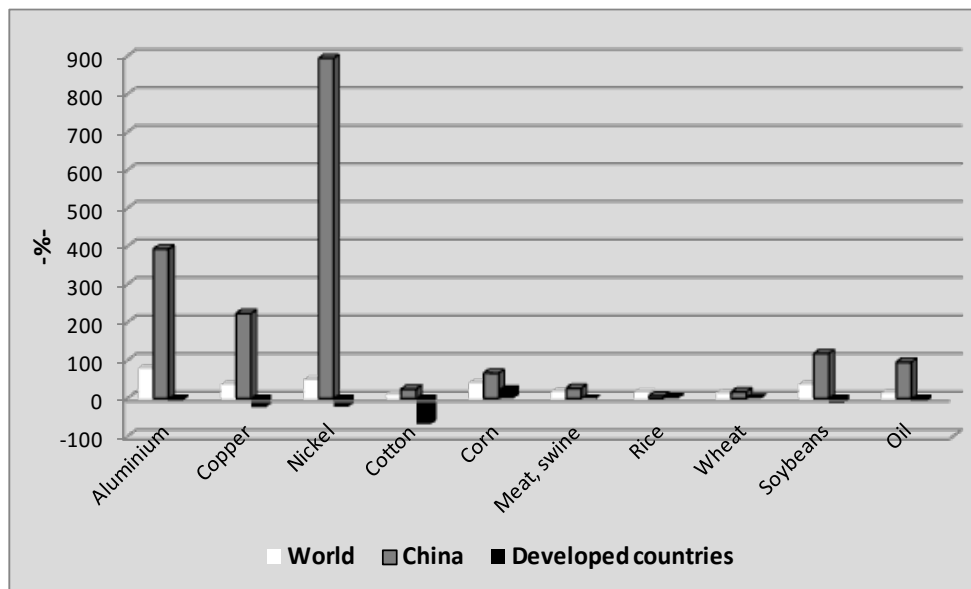
Source: developed by author, based on UNCTAD secretariat calculations, UNCTAD, TDR 2013, pg 54.

As a result, the share of the developed countries in the world commodities consumption declined during the decade, mainly for metals, essential resource inputs for the manufacturing and constructions (from more than 50-60% of the world total in 2002, the share of this group of countries decreased practically to half in 2012, that is to about 30% for copper, 32% for aluminium and 34% for nickel), as also for cotton (to 4% from 14%). The developed countries remained on top, but with also declining shares, for oil (45% in 2012 from 55% in 2002) and corn (41% in 2012 from 46% in 2002).

The growth of world commodities consumption was largely due to the rapidly growing demand in emerging markets (especially those of Asia, led by China and India), which represent the main driver of the world economic growth during the last years, as they make fast progress on the way of their industrialization and urbanization, including increasing percentage of urban population. According to the European Central Bank data, the emerging economies increased their GDP/capita, though from low levels, by more than 70% between 2000-2009 and integrated themselves also rapidly into the international markets, increasing their share in the world export of goods and services by almost twice between 1990-2010, to about 35%. (BCE, 2014)

A major contribution to the increase of world primary commodities consumption belongs to China (Fig. 2), a large size economy, playing a remarkable role in the world economy and on the global market.

Fig. 2 - Consumption growth of selected commodities in China, 2002-2012

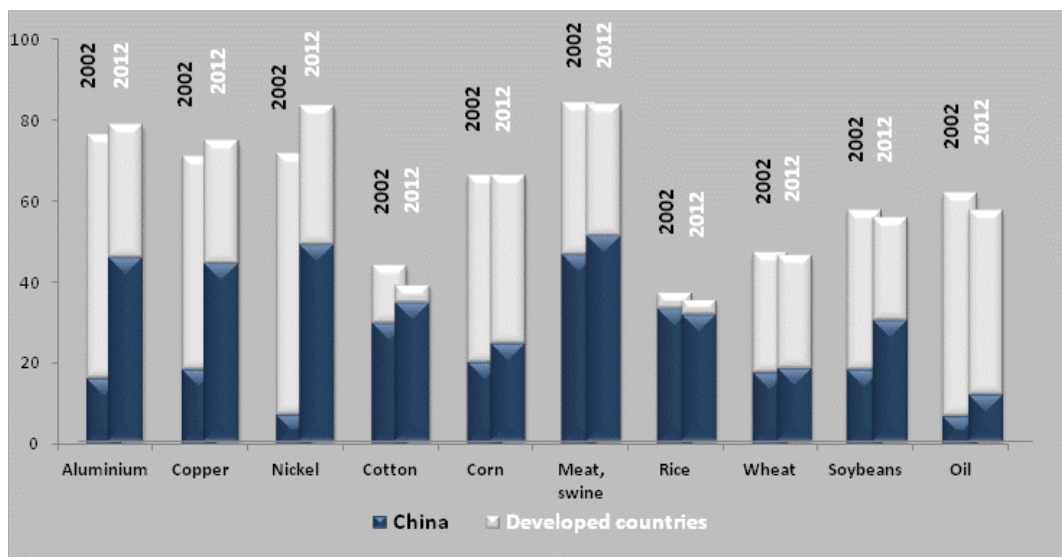


Source: developed by the author, based on UNCTAD secretariat calculations, UNCTAD, TDR 2013, pg. 54

During the last three decades, China's economy has been rapidly developing, at high growth rates, substantially increasing GDP and climbing fast up in the world hierarchy from the point of view of the economic power (becoming number 2, after USA, and in front of Japan). China has rapidly progressed in the field of economic and technological co-operation with other states. The sustained economic growth has created a favorable framework for a more intense participation of this country to the world economy and China turned into a major partner in the world trade in general, becoming the first world goods exporting country, before Germany, and the second importing country, after USA, and especially in the world commodities trade.

China's economic growth is extremely dependent on natural resources, reflecting high investment rates especially in the constructions and infrastructure and a high growth rate of manufacturing, sector generally requiring more primary commodities and energy as compared to agriculture or services. With an extremely dynamic economy, China has become the largest world consumer for commodities as aluminium, copper, nickel, meat and soybeans. (Fig. 3)

Fig. 3 - China's increasing percentage share in the world consumption, 2002-2012



Source: developed by the author, based on UNCTAD secretariat calculations, UNCTAD, TDR 2013, pg. 54

A matter of concern with respect to the global commodities market consists of China's commodities stocks policy. The experience of last years reveals that a big portion of the significant increase of China's

commodities demand corresponds to periods of prices decline and aims at increasing stocks; on the other side, China does not publish full data regarding the real level of these stocks.

The high global primary commodities consumption put pressure on supply, unable to cover the increasing demand (as the historically low prices of '90s caused a long period of underinvestment in productive capacities) and, naturally, it led to the decline of stocks, paving the way for the **excessive price volatility** of the years 2002-2012 and especially after 2007, when prices varied unprecedentedly. (Table 1)

Table 1 - Movement of world primary commodity prices, 2007-2014

- percentage change over previous year -

Commodity groups	2007	2008	2009	2010	2011	2012	2013	2014
All commodities	13.0	24.0	-16.9	20.4	17.9	-8.3	-6.7	-3.9
• All food	13.3	39.2	-8.5	7.4	17.8	-1.4	-7.4	-2.0
- Sugar	-31.7	26.9	41.8	17.3	22.2	-17.1	-17.9	-1.8
- Beef	1.9	2.6	-1.2	27.5	20.0	2.6	-2.3	5.5
- Maize	38.2	34.0	-24.4	13.2	50.1	2.6	-12.1	-16.0
- Wheat	34.3	27.5	-31.4	3.3	35.1	-0.1	-1.9	-0.8
- Coffee	12.5	15.4	-6.9	27.3	42.9	-25.7	-23.6	25.5
- Cocoa	22.6	32.2	11.9	8.5	-4.9	-19.7	2.0	23.7
- Soybeans	43.0	36.1	-16.6	3.1	20.2	9.4	-7.9	-1.7
• Agr.raw materials	12.0	20.5	-17.5	38.3	28.1	-23.0	-7.4	-5.4
- Cotton	10.2	12.8	-12.2	65.3	47.5	-41.8	1.5	3.2
• Minerals, metals	12.8	6.2	-30.3	41.3	14.7	-14.1	-5.1	-6.8
- Aluminium	2.7	-2.5	-35.3	30.5	10.4	-15.8	-8.6	-5.0
- Iron ore	77.4	26.8	-48.7	82.4	15.0	-23.4	5.3	-17.6
- Tin	65.6	27.3	-26.7	50.4	28.0	-19.2	5.7	2.7
- Copper	5.9	-2.3	-26.3	47.0	17.1	-9.9	-7.8	-5.6
- Nickel	53.5	-43.3	-30.6	48.9	5.0	-23.4	-14.3	10.2
- Lead	100.2	-19.0	-17.7	25.0	11.8	-14.2	3.9	-1.9
- Zinc	-1.0	-42.2	-11.7	30.5	1.5	-11.2	-1.9	7.4
- Gold	15.3	25.1	11.6	26.1	27.8	6.4	-15.4	-8.5
• Crude petroleum	10.7	36.4	-36.3	28.0	31.4	1.0	-0.9	-7.5
Manufactures	7.5	4.9	-5.6	1.9	10.3	-2.2	1.7	

Source: worked out by the author, based on UNCTAD data (TDR 2010-2014), pg. 9

The high price volatility represents an important issue for the global primary raw materials market, along with the concentration of market structures, which limit the proportion of the final price that goes to the commodity producer.

The commodity price movement is influenced by a large number of interactive factors. It reflects, in the first place, the development of the market-related factors, being determined by the fundamentals of physical supply and demand of commodities, as well as by the greater participation of financial investors (as commodities are considered financial assets). Commodity prices are also determined by the movement of the US dollar exchange rate, as these goods are denominated in that currency. Empirical studies show that US dollar exchange rate impact is particular important for oil, gold and some metals (i.e. aluminium and copper).

The mix of world price determinants includes also other general or specific commodities market factors, as well as economic policies and political developments (see the geopolitics impacts on the oil prices dynamics).

The price volatility increased concern - at the highest levels, including the last G20 summits - for finding solutions in order to alleviate the negative impact of price volatility both for the commodity producers and for the consumers. The goods prices and the primary raw materials prices are closely connected, affecting the policies on financial markets, economic development, industry, trade and foreign relations.

Current uncertain global economic environment makes it difficult to foresee the future evolution of the primary commodities prices. One thing is however clear and namely the dynamics of developing economies

and mostly of the emerging markets will have a significant impact on the future development of the demand for commodities, both industrial raw materials and food and other agricultural commodities.

China will continue to play a major role on global markets, even in case of slowing GDP growth rate, and implicitly of declining commodities consumption, as also a series of developing countries with high demographic density and high economic growth rates, to the extent in which these countries will choose models for growth and industrialization based upon increasing consumption of industrial raw materials, especially metals, and for developing infrastructure along with increasing urbanization.

Overall, the primary commodities prices are expected to continue, as a general trend, to increase, but at slower rates compared to the beginning of the millennium, reflecting some short and medium term corrections. On a long term basis they tend to stabilize at relatively high levels.

Commodity trade and prices represent a major driver of the global economy dynamics. Generally it is considered that the primary commodities production and export offer limited opportunities for economic growth and development mainly as a result of a long term deterioration trend of the terms of trade of the above mentioned goods versus manufactures, reflecting declining prices of raw materials as compared to those of manufactures.

The dynamics of international prices between 2002-2012, marked by a change of trend for commodities - from declining to increasing prices - along with declining prices for certain, mainly labour-intensive, manufactures contributed to a significant improvement of terms of trade for the commodity exporters vis-à-vis exporters of manufactures, giving a notable impetus to the acceleration of economic growth in commodity exporting countries.

The terms of trade evolution in the case of developing and emerging countries is dependent on their foreign trade patterns, namely those countries exporting mainly oil and mineral and mining products experienced the largest gains from higher commodity prices versus manufactures since the beginning of the millennium. Oil exporters experienced a more than twofold increase of their terms of trade during the past decade, reflecting a more than double increase in their export versus import prices.

By geographical zones, the country groups with the largest terms of trade increases are the economies in transition, Africa and Western Asia. Significant gains in terms of trade were also obtained in Latin America, however on a smaller scale because of a more diversified pattern of foreign trade. The agricultural commodities exporters experienced a slower growth trend, reflecting a different performance of prices for the various products as well as the dissimilar share of food and fuel imports in their total import. At the same time, the major developing manufactures exporting countries, mainly from East and South Asia, experienced a decline of their terms of trade after the year of 2000.

3. New challenges in the global commodity market

Recent developments reveal the following 4 major challenges in the global commodity production and trade, generated by a number of long term factors:

- The advances in **shale oil and gas** technology in USA could pave the way for a revolution in the global energy power balance, that could shift back to North America by 2020's, as well as in the global mix of primary energy sources, favouring the decline of oil price and a geographical redistribution of the international energy trade. (COM 2011)

- **Climate changes** - global warming, extreme weather conditions as severe droughts or rainfalls - have a major impact on the demand/supply balance in the global primary commodities and especially mining and agricultural market, with adverse effects on the price movement, affecting both producers and consumers.

- The advances in the market of **renewable or green energy** (wind or solar power, biofuels), the fastest growing subsector in the global energy mix, show good prospects for the expansion of the supply and demand of alternative energy, being also encouraged by the high oil prices and increasing concerns about environment protection or energy security and independence.

- The considerable attention gained during the last years by **the rare earth metals**, strategic vital resources for some of the most dynamic world markets, as high-tech devices, petroleum refining, military and defence applications, represents another major challenge for the short and medium term dynamics of the global commodity market.

4. Conclusions

Taking into account the recent commodity market trends, the above-mentioned four key developments identified as major challenges in the commodity economy are expected to change the landscape of the global commodity market and require adequate policies for sustainable development of all countries.

As for the main market actors in the new context, along USA - having large deposits of unconventional oil and gas, a major role in the global commodity market will continue to play China, the largest world producer of rare earths and metals, with a share of over 97.3% of total world supplies.

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