

The commodity markets

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In finance jargon, the term *commodities* refers to the market of agricultural goods, energy and industrial raw materials. It is also applied to anything underlying a futures contract at a commodities exchange or generally speaking to organised markets where metals used in industrial processes, precious metals, energy, food and other agricultural goods or cattle are noted.

The aim of the article is to analyse the main recent events to understand the specifics of commodity markets and macroeconomic externalities derived from price instability, as well as to point towards some solutions to stabilise markets and trends within the current economic crisis.



Introduction

Commodities are characterised by being products without any added value or differentiating factor, but globally available and demanded. They have an international price range and do not require any big technology to be manufactured and processed.¹ They are mainly production factors used as an entry to manufacture other goods.

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Among the specific commodity exchanges, the **Chicago Board of Trade** and the **London Metal Exchange** stand out. The former was established in the mid 19th century by farmers selling their products. With time, farmers started selling them before the harvest, negotiating the future price of these goods and setting a delivery date. This negotiation type is now called futures contract, in which different sorts of financial instruments play a role. Hence a financial commodity is anything underlying a futures contract at an established commodity exchange.

In the years 2007 and 2008, the discussion in this market focused on the deep consequences of raw material price increase on consumers and inflation as well as its global impact on trade patterns and the international monetary system, since commodities had become an investment asset replacing financial ones. However, with the crisis becoming deeper, we have seen a dramatic decline of agricultural, mineral and energy commodity prices since 2009.

In the following, the price evolution and instability in the commodity markets in the last years are analysed, and so are the difficulty to stabilise

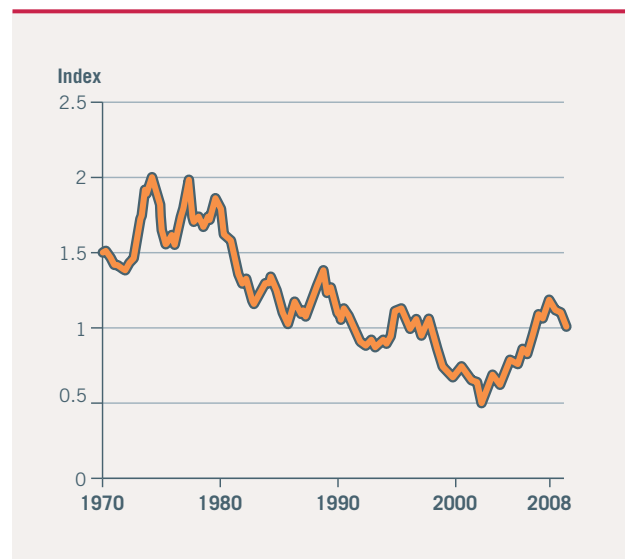
the global commodity market and the externalities and the macroeconomic crisis derived from its volatility. In this respect, we will also talk about what can be done to stabilise the market. Finally, some perspectives and different conclusions are given.

Instability of the commodity market

The price of commodities has experienced some considerable volatility in the last years. With the outbreak of the crisis in autumn 2008 and its deepening since 2009, we have seen a dramatic evolution of nominal prices in a considerable number of agricultural, mineral and energy commodities. Historically, they had been keeping a low price pattern in real terms and even followed a downward trend in the 1980s and 1990s.

However, the price oscillation between 2008 and 2009 was unprecedented, in part due to financial innovation that has increased the depth these

Chart 1. Price index of commodities in real terms (logarithmic scale)



Source: The World Bank's Commodity and own data

▲ 2001 set the lowest price for commodities.

markets operate with, changing the morphology of price series.

The price oscillation between 2008 and 2009 was unprecedented.

As is shown on Chart 1, the commodity prices have declined in real terms in relation to the peak reached in the late 1970s. They did so quite strongly up to 2001, when they reached their minimum. The increase between then and 2008 was approximately 135%. Some reasons for this are the demand of Asian economies in these markets, especially the rise of China in the international economy, as well as the reduction of the offer in the course of the advent of bio-fuels and adverse climatic conditions.

It is also true that the market overreacts out of three reasons: excessive global liquidity, i.e. laxness of monetary policies and its effect on interest rates, the dollar effect, and finally speculative liquidity coming from other markets such as stock and property.

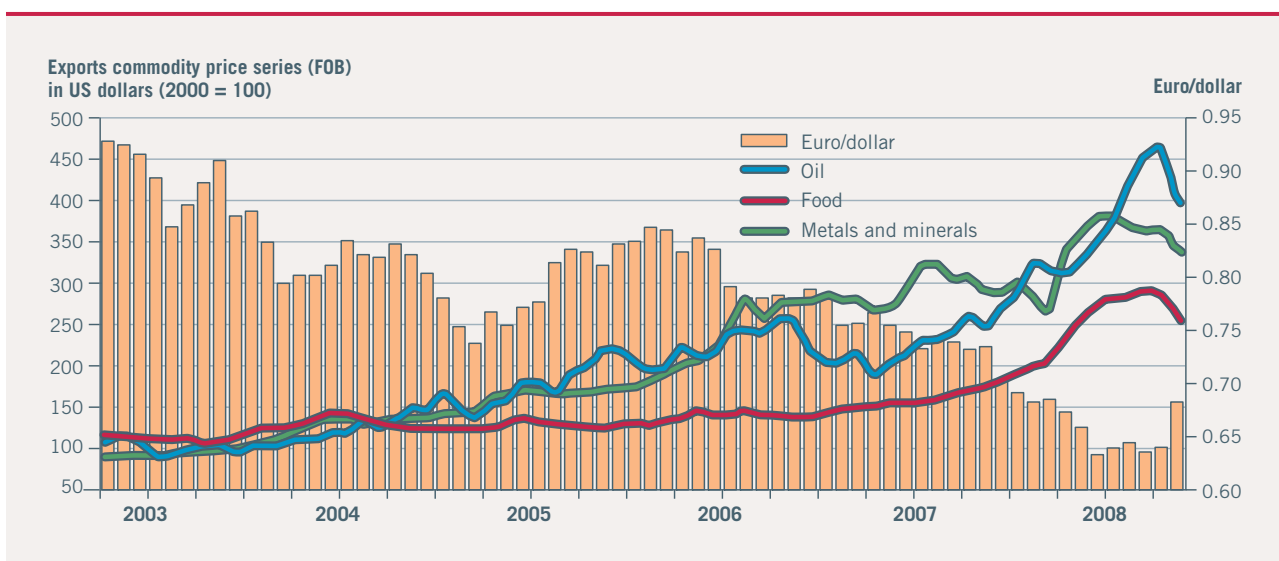
The interest rate evolution during 2005-2008 has had its effect through at least three ways:

- ▶ Increasing incentives for present vs. future output.
- ▶ Increasing the opportunity cost of companies to keep stocks.
- ▶ Encouraging speculators to take positions in commodity contracts.

In all three channels we find a negative association between interest rates and commodity prices in real terms.

Also, the price evolution can correlate with the ongoing depreciation of the dollar as compared to the euro in the 2003-2008 period, as is shown on Chart 2. The underlying idea of the dollar effect is that changes in the real value of the US currency imply fluctuations in international relative purchasing power. Thus, a depreciation of that currency means less purchasing power in terms of commodities in the dollar zone.

Chart 2. Evolution of the dollar and commodity price volatility. 2003-2008



Source: The World Bank's Commodity and own data

▲ The price evolution can correlate to the depreciation of the dollar as compared to the euro in 2003-2008.

Finally, due to downward expectations in the financial and building market, which used to be an escape for many investors, 2008 was dominated by the paper commodity market; to be more precise, by the rise of futures look-alikes negotiated in non-regulated electronic markets, in which up to twenty commodities may be traded on paper for each real one. This is easily observed with the Bank of International Settlements data that show that toward mid 2008, the total sum of derivatives contracts amounted to 10 trillion dollars, twenty times the 1998 value. Many of these contracts have been part of many investment funds indexed according to the evolution of the oil barrel price and that of other raw materials (mostly related to Goldman Sachs, Morgan Stanley, Citigroup and JP Morgan). All these derivatives have become an option for investors to protect themselves from inflation, and their profitability depended on self-accomplishing expectations, so speculative activity has worked as an amplifier.

In mid 2008, the total sum of derivatives contracts amounted to 10 trillion dollars, twenty times the 1998 value. These derivatives have become an option for investors to protect themselves from inflation.

On the other side, the variability of primary commodity prices has its origin in production and consumption elasticity being low in the short term. That is, the response pace of production is low given the fact that production decisions are often taken before prices are known. These decisions depend on price expectations and not on their realisation.

In the case of agriculture, these realisations can even cause giving up a harvest if the price of collecting it is higher than the total value expected from its sale.

At the same time, economic stakeholders base their price expectations on the past behaviour of this variable in some of these agricultural

markets. Hence the possibility of strong production and price instability comes up, which later dissipates over time as information flows on an ongoing basis between economic stakeholders. However, it may occur that price level and amount available tend to balance: out of a situation in which demand for the product in the initial stage is much higher than the amount offered, it later tends to balance in the medium or long term due to offer and demand pressure. But it may diverge if there are strong price fluctuations, which fosters the absence of a balance point. This interaction process between expectations and reality creates a price and amount interplay called «cobweb model» by economic theory.

Commodity price fluctuations are based on demand shocks (out of industrial cycles linked to metal demand) and offer shocks (mainly agricultural).

The amplitude of commodity price fluctuations in response to offer-related decisions taken with a given anticipation are usually based on demand shocks (mainly out of industrial cycles linked to metal demand) and offer shocks (mainly agricultural).

Within this context, the socioeconomic debate has been focusing on the considerable destabilising consequences of the increase of food and raw material prices that are difficult to handle from a national political perspective, which clearly shows a dilemma in social policies.

The difficulty in stabilising the world commodity market

The increasing geographic asymmetry between finance and business on the one side and social politics on the other creates a triple dilemma within which it becomes difficult to take action to stabilise the commodity markets.

The idea is that three initially desirable things for any country, as are access to growth allowing economic and financial globalisation, enjoying national sovereignty and keeping market stability, are difficult to achieve simultaneously.

Where globalisation has indeed had a big influence is in the international financial system, basically due to the fact that free movement of capital is apparent at all levels: direct foreign investment, internationalisation of banks, link between stock exchanges and contracting platforms, generalisation of financial innovation.

General adoption of flexible exchange rates has led to a strong increase of the risk that needs to be neutralised with new coverage products.

The hotbed for this great combination is the result of at least three circumstances:

- ▶ First, the transformation of markets. Following the implementation of «eurodollars» in the 1960s, there appeared non-regulated markets, to which revolutionary technological transformations were added in the organised markets, all of which in a context that has grown sequentially out of the need to have more adequate areas to recycle surplus financial resources from oil producing countries, the aggressive irruption of Southeast Asian contracting platforms, the popularisation of stock investment and relevant progress in information and communications.
- ▶ The second circumstance stems from new, sophisticated financial products and instruments appearing massively. Apart from the evolution of the industry itself, it is a consequence of the general adoption, after 1973, of flexible exchange rates that led to a strong increase of the risk that needs to be neutralised with new coverage products that in turn become generalised in other areas in the shape of derivatives markets – options and futures. Another reason is that, apart from its effect on the structure of their markets, specific instruments are increasingly created and later adopted

to have acceptable guarantees to finance the vast amount of debt emissions following inflated public debt.

The effect of globalisation strengthens the functional autonomy of markets at the expense of regulations, procedures and regulators that have been governing contracting and turning their action towards public goals and priorities.

- ▶ And thirdly, the change in the nature of investors as international liquidity is in the hands of big private operators, with all this means in terms of loss of traditional domination by public institutions. This way, the effect of globalisation strengthens the functional autonomy of involved markets at the expense of regulations, procedures and even regulators that since the late 1940s have been governing contracting and turning their action to public goals and priorities (social, cooperation, welfare, etc. policies), unlike what is occurring now.

The three vertices on Chart 3 show three desirable, yet often incompatible political options, which creates three triple dilemmas. On the top vertex, economic theory considers economic and financial globalisation to be desirable out of efficiency. Below, the defence of national sovereignty is based on the notion of nation-states as warrants of social or coverage contracts for citizens against risks and uncertainties, apart from the feeling of national identity and political representation, arguing that people appreciate that decisions affecting them are taken close to them. Finally, economic stability in commodity markets is desirable to correct failures in the global market that could otherwise lead to a food crisis as in 2008.

Hence three different possible options of economic policy are envisaged in this scenario. What will happen if neoliberal globalisation goes on, with a deregulated global financial market in which companies can choose any

location and invest anywhere in the world, with a globalised economic, financial and business sphere and a social political sphere framed in nations? The answer is that market instability will increase as there are no guidelines within a given framework, every country adopts the most convenient policy and companies and capital increase their power compared with countries. As long as there is asymmetry between both spheres there will be crises.

Collateral aspects to current globalisation are therefore uncorrected failures in global markets on the one hand and volatility that can become worse and lead to food, financial or environmental crises on the other.

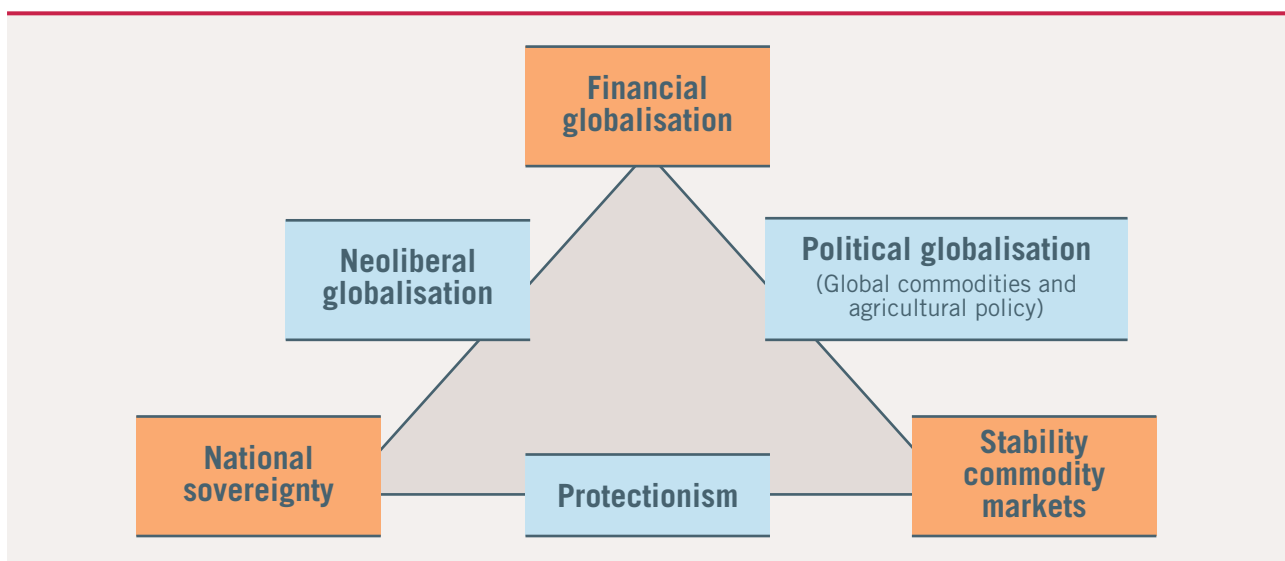
With the aim of reformulating this situation, several ideas on economic policy have been brought up, reaching from stronger market regulation to more radical ones going for more protectionism. Out of the idea set out, it is possible to draw the conclusion that if every country acted according to its interests, the nation-states would face a **prisoner's dilemma**. It is a scenario of competition in which the concept of stability and

security disappears and global market failures succeed one another.

There is no common European energy policy, and each state is sovereign in this respect. A global market requires a global policy or the formulation of policies at intergovernmental level.

In energy commodities such as gas or power, there are also situations like the ones we have analysed in the shape of triple dilemmas that may carry about an energy crisis (e.g. that with Russian gas in early 2009). For instance, countries such as Spain or Portugal are doomed to be an energy island with respect to Europe for a long time. There is no common European energy policy, and each state is sovereign in this respect. If we accept full autonomy in setting out supply safety as desirable as long as we do not accept the European market as a reality, the item to control is obviously the loss of jurisdiction. However, we need to completely forget about regulatory stability. Price evolution in

Chart 3. The commodity market and the triple dilemmas of globalisation.



Own source

▲ The vertices on the chart show desirable, yet often incompatible political options.

Spain, the rights of Energy Acquisition Contracts (CAU) in Portugal and necessary harmonisation of regulations between both countries are issues that should definitely be tackled. They all affect regulatory stability.

Another side to the triple dilemma is anything referring to transit to the European scenario, yet keeping a certain regulatory stability. This is the case of control over mergers and acquisitions at EU level. To do such an analysis, any thought about energy autonomy of one specific member state needs to be abandoned. In Spain, all attempts along these lines have failed, basically due to governmental fears of excessive concentration and the industry's fears of alleged excessive wilfulness by public authorities (e.g. the Iberdrola-Endesa and more recently the Gas Natural-Iberdrola cases). Other examples in Europe have been authorisations for concentration given by the European Commission, albeit under conditions. In any case, Spanish companies under control of foreign energy groups would mean a loss of control over the energy autonomy.

It seems that either the liberal or the protectionist option are the only possible debates, but according to the «trilemma», there is a third way consisting of moving towards global federalism in the different markets (agriculture, energy, etc.). It seems reasonable to think that a global market requires a global policy or the formulation of policies at intergovernmental level. In fact, the idea is to move to the global level what has been implemented in the field of agriculture at a lower geographical level in Europe: the common European agricultural policy.

Macroeconomic externalities and how to stabilise commodity markets

Negative externalities of commodity price movements may vary according to the sort of raw material and the economy involved.

For instance, in developed economies, commodities do not represent a significant part of the consumption basket of households, as opposed to less developed economies – specifically, it amounts to only 10% in Organisation for Economic Co-operation and Development (OECD) countries. However, food amounts to roughly 65% of the consumption basket in Sub-Saharan Africa and 30% in Asia, which may bring about food crises and deep macroeconomic imbalances (IMF, 2007).

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The same applies to oil. In the 1970s and 1980s, developed economies were very vulnerable to price increases (offer shock), but the relative importance of oil has declined in the last years in relation to both GDP (due to less use) and inflation (due to the reduced effect of cost on price in a competitive global market). This phenomenon has been observed throughout all industrialised economies in the last years. Nevertheless, the oil price affects rather medium developed countries such as Latin America, where the productive structure is heavily based on the primary sector, so commodity price volatility has a direct impact on the whole of macroeconomic variables, whereas price volatility alters radically the GDP of oil-based economies.

In fact, those countries whose GDP is based on a monoculture are very vulnerable to import prices that determine their downward macroeconomic evolution in times of price reductions and even of price increase in certain cases, as long as this has an effect on local currency appreciation, a phenomenon known as «Dutch disease». Also, works as that by Xavier Sala i Martín and Arvind Subramanian (2003) show a link between oil or mineral production and economic growth, dominated by the idea that abundance of these natural resources may act as

a «curse» if quest for its control causes corruption and erodes public institutions.

Also tax revenue is affected by events in these markets, as shows the increasing importance for global finance of Sovereign Wealth Funds (SWF), the origin of which is often associated to public ownership of strategic commodities.

Highly volatile prices create problems in implementing policies to stabilise and reduce dependence on commodities. The idea is that in the increase stage of the price cycle, the economy experiences a rise in exports, tax revenue and production, so there are no political incentives to implement innovative measures aimed at diversifying production, even if there are perhaps resources that may allow to tackle them. Once prices decline, the political desire for having an influence on commodities will be higher, but there will probably be not enough resources nor a favourable context to act accordingly.

Strategies to stabilise these markets have been traditionally fuelled by a genuine interest of consumers and producers of commodities to protect themselves against the risk of price fluctuation.

However, given the interaction between offer and demand, strategies to stabilise these markets have been traditionally fuelled by a genuine interest of consumers and producers of commodities to protect themselves against the risk of price fluctuation (IMF, 2007). This sort of presence in the futures markets is associated to commercial action of stakeholders interested in the underlying physical asset.

The demand of stakeholders interested in such assets, albeit using speculative methods, would stabilise prices if they created reserves for more difficult times. Their demand would serve as a support against price decline, thus avoiding withdrawal by many producers who could now

go on supplying future markets. If abundance turns into scarcity and prices rise, the withdrawn surpluses will reappear and be now sold at a higher price. Markets would stabilise and prices would not surge in the face of any eventuality. In this case, speculation would have a stabilising effect, very different from recent years in which the presence of financial investors has affected the dynamics of price adjustment in a non-linear way.

It must not be forgotten that according to the sort of commodity, the price will be more or less volatile. For instance, commodities with an oscillating offer due to climate reasons, such as agricultural products, are more volatile than those with a more stable offer, such as energy or minerals. Price stability of the former depends on the existence of substantial storage capacity, so in times of big harvests enough reserves are created for periods of low production. Contrarily, in the mineral or energy market, with finite and non-renewable goods, price stability is higher, with fluctuations being demand-driven as the output cost is stable. In this respect, it needs to be pointed out that a high rigidity in short-term offer makes prices very unstable, that is, they undergo great variations at the slightest change in demand.

The different market structures also affect stability. Agricultural markets are driven by perfect competition market patterns, with many offerors but no effect on the global market for that product. Contrarily, the energy and mineral markets come close to an oligopolistic or oligopsonistic market. In these cases, the decisive point is whether producers usually depend heavily on selling, which may induce them to try and sell even higher amounts in the light of price reductions, but also if the commodity is contracted through one or several exchange markets acting as a monopsony or oligopsony.

Relevant points are also if the few offerors join together, the commodity involves a high shipping cost or the offeror has control over distribution at regional level. For instance, the output cost for gas, cement or wood is close to their

shipping cost, so there will be a relevant price spread according to the country. However, in the case of oil, the price will rather depend on the crude type (WTI, OPEC, Brent, etc.) and its refinement cost, and not so much on the shipping cost, which is relatively low. Another important point is both national and international spread, which makes it difficult to take coordinated decisions.

Perspectives and conclusions

The financial crisis has caused deflation in commodity prices, and a reversal is unlikely to occur, at least in the short term, though long-term demand will contribute to a future price increase.

With global economic deceleration and decreasing raw material demand, especially to satisfy the demand of emerging countries such as China (the biggest consumer in the world), ongoing price moderation is to be expected, and stabilisation will be determined by output adjustment. In relation with oil, the OPEC has announced new voluntary restrictions on production. The big steel mills, such as ArcelorMittal, Corus, Russian Severstal and the Chinese mills, are cutting their output. The iron ore price has been reduced after negotiations with the main steel companies, both in the European and Asian market, and due to generous reserves in China.

As far as paper is concerned, the cellulose pulp price is basically decreasing due to poor consumption expectations, against an offer that will remain practically constant in the medium term. At the same time, the paper manufacturing industry is linked to the chemical industry. In this respect, the price of imported paper pulp, mostly from South America, is also set based on the oil cost. However, it has to be said that the availability of raw material is linked to a long maturation period of forests (twelve years) and very vulnerable to credit restriction, as financing

is required according to the indispensable time to develop this part of the industry.

With economic deceleration, ongoing price moderation is to be expected, and stabilisation will be determined by output adjustment.

To summarise, the future evolution of commodity markets will still depend on global demand, population growth, biofuel production, energy prices, economic growth, crop yields and trade policies (tariff restrictions or benefits and direct subsidies or funding given by many countries, e.g. subsidies on paper in Colombia, Brazil, Finland, Portugal or the USA).

However, this article has analysed the different options to stabilise these markets and tried to point out the impossibility of keeping key economic and social objectives at the same time. The starting point of the problem has to do with the impact of globalisation in markets such as trade, finance or commodities in a framework in which the territorial and decision-taking area in politics (the nation state) does not coincide with the territorial area of economics (the market is the world).

In this scenario, international capital movements, especially in the short term, will play a decisive role in financial markets, foreign exchange, the price of commodities and the effects of national macroeconomic stabilisation policies.

With this starting point, it comes out that it is not feasible to keep national sovereignty in conventional terms, have stable markets and fully participate in the globalisation process simultaneously. If every country pretends to act according to its own interests only, a typical prisoner's dilemma will be reached. In fact, this has been an evolution that has led to food and energy crises and growing instability in the markets over the last two years, and this requires some reasonable social political

mechanisms of stabilisation, coordination and compensation.

In fact, at a lower scale, the EU member states have been forced to foster supranational political integration to stabilise markets, e.g. in agriculture,

though energy policies are still pending. So at a global level, policies need to be formulated at intergovernmental level. It is about agreeing not only on financial, tax and labour matters but also on all those related with raw materials, energy and food.

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Notes

1. However, it is true that some commodities such as rice, sugar, wheat, maize, soybean and salt are today entering more specific quality standards.