

Commodity Markets Financialization and its Impact on the World Economy

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Abstract: *This paper deals with the financialization of contemporary world commodity markets and its influence on the economy. Firstly, it defines the ways in which this current trend shows itself and then analyzes its impact on the economy. Concurrently the paper tries to find out in what way is the effect positive for the economy as well as in what is negative. The aim of the analysis is also to confirm or refuse the hypothesis that financialization of commodity markets is one of the factors which has contributed to the emergence of modern "financial" crisis and helps its prolongation. The closing part of the paper focuses on the question if this process is beneficial or harmful for the further development of the world's economy or whether is appropriate to matter in this process or rather waits for the result of the spontaneous development itself.*

Keywords: financialization, commodity markets, world economy

JEL codes: G01, G11, G12, G15

Introduction

Important changes are currently being realized at commodity markets. Especially after the appearance of technological bubble in the year 2000 and its subsequent burst, investors started to seek further possibilities of investment to ensure wider diversification of investment portfolios and new ways of speculation. Formation of so called commodity boom that has been influencing not only commodity markets, but financial markets as well, is dated to this time; it has been strongly influencing world economy functioning, too.

Aim and methodology

The aim of the paper is to define and characterize the process of financialization of commodity markets theoretically, and subsequently to analyze its outcomes and impacts on world economy functioning. And last but not least, it enables to evaluate, based on acquired knowledge, whether this process is beneficial or harmful, what the benefits or harms are and whether it would be suitable to commence more strict regulation.

Results

In the past, commodity investment instruments were differentiated from financial investment tools by the fact, that, due to their weight, they could not be traded promptly in bigger extent, or in another words, the deals could not be settled immediately. Financialization of commodity markets has significantly changed this fact. As it has become an important worldwide development trend, it seems to be unnecessary to analyze it in more details.

1. Definition of „financialization” of commodity markets

Financialization of commodity markets can be, before all, characterized as extreme growth of volume of commodity market, that is not settled physically, but they are settled financially. This way of trading is performed, before all, by speculators, for whom financial settling in commodity markets is suitable. It is simpler for them and, on top of that, they are not threatened by the fact that they would have to deliver or take particular commodity physically. Another characteristic of commodity markets financialization is the fact that commodities are more and more often used as a part of portfolio of investment and share funds or, they become, together with commodity market index, foundation assets of many various sorts of newly constructed synthetic so called "structured products". This includes structured term deposits, various sorts of structured bonds, collective investment structured funds securities or various sorts of so called securitized lever derivatives (Rejnuš, 2011). Factors, leading investors to this way of commodities trading include diversification of their investment portfolios, existence of (often very high) financial lever in case of speculation. As far as issuers of structured products are concerned, foundation commodities or commodities trading indices enable further developing of variety of constructions of synthetic products, created by them.

2. Analysis of impact of commodity financialization on economy

Financialization of commodity markets and its progressive propagation show a number of different ways that need to be analyzed in details.

2.1. Analysis of influence of commodity financialization of price lever and volatility on price of commodities.

In connection with financialization of commodities market, the influence of increased share of so called "financial investors" and their business strategy on contemporary level of commodities price in comparison with historical prices and contemporary extremely high volatility of commodities are being discussed. These topics are based on two basic theories.

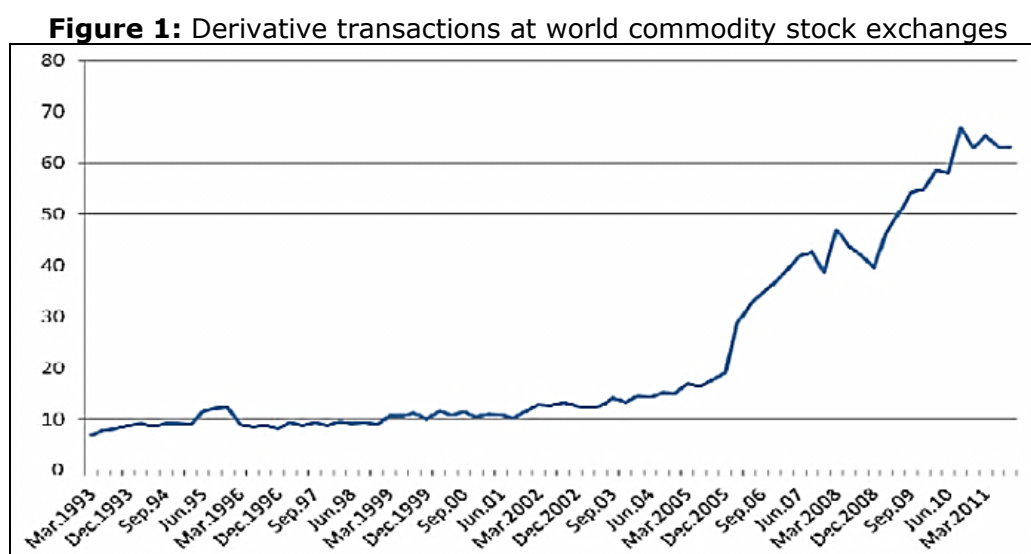
The first one, so called "fundamental theory" assumes that the prices of commodity assets are determined almost solely by fundamental factors and that all commodity market users, making their business and investment decisions, assume development of offer and demand on spot markets. This theory is based on prerequisite of effective markets theory that commodities markets instantly and correctly absorb all available fundamental information and expectations. Provided that uninformed users of commodity markets assess the price of commodity incorrectly, well informed businessmen would take advantage of it and the price of respective commodity would get back to balance of "fundamental values" (Staritz, 2012). It shows that prices of commodities should not be influenced by "financialization" but they should be determined by real fundamental factors that are the cause of increased volatility of commodities prices. This opinion is advocated for example by Pirrong (2008), Hong and Yogo (2010), Power and Turvey (2011) or Singleton (2011).

Second, so called "financial theory" assumes that volatility of commodities prices is influenced not only by fundamental factors, but that it is significantly influenced by expectations, behaviours and interaction of individual market users; they include not only so called "informed investors", but so called "uninformed investors" as well. The difference between behaviours of these two groups of investors is based in the fact that "uninformed investors" follow trends, excessively respond to good and bad news and utilize various methods of technical analysis. This may launch so called "herd effect" (UNCTAD, 2009). And vice versa, the second group of "informed investors" utilizes statistical techniques for their decision making. Both these groups of market users can, due to their behaviours, considerably deflect the price of commodities from their fundamental values (Staritz, 2012).

2.2. Analysis of development of traded volumes of commodity terminated derivative instruments

Commodity derivatives are highly volatile instruments; some authors consider them to be one of the most risky forms of investment ever (Kline, 2001) and they can be traded in different ways. Basic form of stock exchange trading is traditional trading with commodity futures or, as the case may be, with stock exchange options (usually stock exchange options on commodity futures).

Figure 1 shows the development of the number of traded commodity derivative contracts at world commodity stock exchanges from 1993 to 2011. These data, although individual sorts of contracts are not specified in details, unambiguously show the importance and consequences of financialization of commodity markets. And what is especially important, their rapid growth can be seen even in the pre-crisis time, since the end of 2005. Beside this, there are contractually concluded (mostly via OTC market) forward, swaps and contractually concluded options.



Source: BIS, Quarterly Review, December 2011 /millions of contracts/

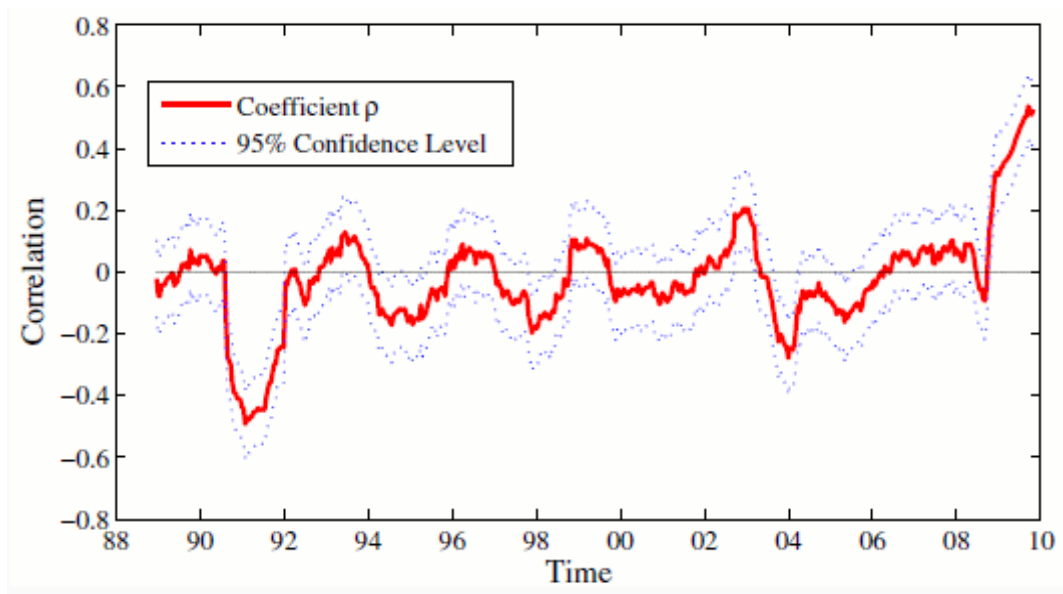
2.3. Analysis of mutual interconnection of commodity and financial markets

Investments into commodity indices that are generally considered to be overall indicators of price development at commodity markets are a very popular form of “investments into commodities”. These are investments that can be done in many different ways, not only by means of term derivative instruments, but by means of collective investment funds or by means of various sorts of structured products. Various commodity indices that differ from each other by their construction, covered commodities or by weights that are matched to them, terms of rolling of individual contracts (this means replacing current contract with approaching date due by a contract with more distant date due) etc. can be used for these purposes. Most important commodity indices used as underlying assets include for example Standard & Poor’s – Goldman Sachs Commodity Index (S&P-GSCI), Dow Jones - UBS Commodity Index (DJ-UBSCI), Deutsche Bank Liquidity Commodity Index (DBLCI), etc.

Using commodity indices as underlying assets is often discussed by professional public. Some authors consider them to be a source of fundamental imbalance of commodity markets (Tang and Xiong, 2010; Gilbert 2010). When investing into futures derived from commodity indices, the investors in most cases speculate on growth of rate, which means they enter long positions. This causes growth of commodities prices unless they are physically settled.

Tang and Xiong pay attention to commodities indices with respect to more and more tight fitting correlation with revenues from shares. In their book *Index Investment and Financialization of Commodities* the authors say that financialization of commodity markets in the US is caused by considerable number of, before all, institutional investors. This leads to increased volatility of commodity markets and to tighter correlation of revenues with those of share indices – see below Figure 2. It shows the fact that the trend of approximation of the correlation of revenues between commodity index S&P GSCI and share index S&P 500 is the most considerable after the Lehman Brothers bankruptcy in 2008, which concurrently proves the tendency to moving commodity and financial markets closer to each other.

Figure 2: Correlation of revenues S&P 500 and S&P GSCI.



Source: Tang, K., Xiong, W. *Index Investment and Financialization of Commodities* (August 2010).

2.4. Analysis of diversification of investment portfolio as a stimulus to financialization of commodity markets

In 1950's, Harry Markowitz established basic principles of portfolio theory and defined the advantages of mutual diversification of financial and real assets, based on such allocation of individual assets that brings maximal expected revenue to the investor, while the level of risks is on the same level. In this case, the investor considers characteristics and correlation of individual assets (investment instruments) that influence the revenue and the risk of the whole investment portfolio. As the prices of commodity assets influence different factors than those that are influenced by financial investment instruments, it appears to be highly suitable for diversification of investment portfolio. And last but not least, they are adequately liquid.

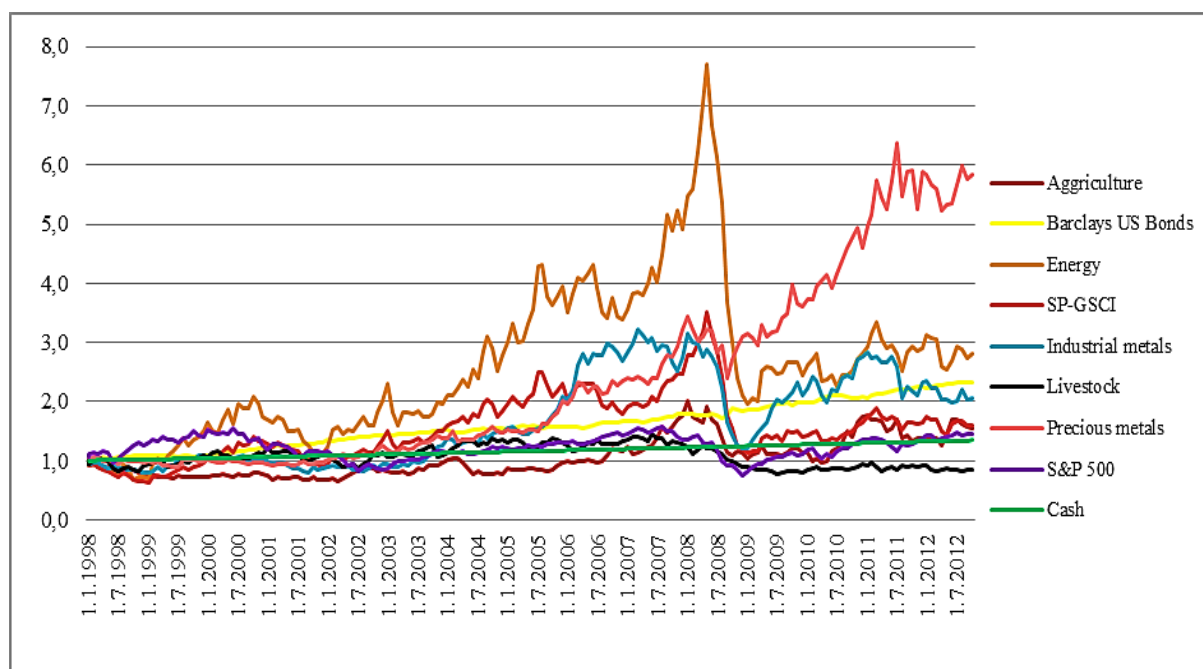
Many authors have dealt with the problems of the importance of commodities in the investment portfolio. The most important of them include publications by Gorton and Rouwenhorst (2005), who find commodity assets to be an attractive class of assets suitable for diversification of investment portfolio and investment into commodity assets move, from the point of view of modern portfolio theory, closer to so called effective border. Except for above mentioned ones, investment into commodity assets were dealt with by many other authors (Gordon, 2006; Stoll a Whaley, 2009).

In connection with modern portfolio theory, two basic variables of this theory are subsequently assessed: historical revenue and volatility (decisive deviation that represents the risk of the investment) in the interval from Jan. 1st 1998 to Nov. 19th 2012. These vari-

ables are assessed for various sorts of commodity assets and compared with investment instruments – shares, bonds, and financial market tools. Data used in this analysis show total monthly revenues of individual commodity indices provided by S&P Dow Jones Indices (indices S&P GSCI). Apart from composite commodity index S&P GSCI Total Return (including collateralized revenues and revenues or losses caused by positions rolling) similarly constructed indexes of energies, precious metals, industrial metals, agricultural products and livestock are analysed. Share S&P 500 Price Return Index, Barclays US Aggregate Bond Index and saving account with the interest rate of 2/12 % per month – which is considered to be riskless asset for this purpose, are compared. The initial investment of 1 US dollar was used for this calculation and transaction costs and taxation were abstracted from. In case of saving account, cash deposit was added monthly with the assumption of composed interest.

Results of the analysis made by software Smartfolio are shown in Figure 3 and Chart 1e:

Figure 3: Graphic assessment of revenue appreciation into various sorts of investment assets



Source: Processed by K. Smolík, based on data available at S&P Dow Jones Indices, Barclays Capital and finance.yahoo.com

Table 1: Historical yearly profitability and volatility of chosen sorts of investment assets

	Average return	Volatility
Agriculture	5,33	21,98
Barclay US Aggregate Bond	5,72	3,55
Energy	12,37	32,80
S&P GSCI	6,20	24,67
Industrial Metals	7,41	22,40
Livestock	0,18	15,94
Precious Metals	13,48	18,02
S&P 500	3,83	16,49

Source: Processed by: Smolík, K. based on data available from S&P Dow Jones Indices, Barclays Capital and finance.yahoo.com

Achieved results of graphic assessment of investment revenue and values of historical average yearly revenue, shown in a chart show that all commodity indices (except for livestock index) were more profitable than stock exchange index S&P 500 and riskless saving account in the monitored period. Volatility values of commodity indices are more distinct as well.

It is necessary to point out that, within mentioned analysis, test of normality of division of determinant deviation; this would be necessary to do when evaluating the risk by means of this variable within the framework of investment portfolio compiling. In this given case, this represents so called "Annual Returns" in the monitored period from 1998 to 2012.

2.5. Analysis of existence of financial lever as a stimulus of commodity markets financialization

As already ascertained, financialization of commodity markets brings financial and commodity markets closer together. This finding has one more important dimension. As the prices of term derivative instruments (in this particular case, before all, stock exchange futures) relate to their underlying assets, it is apparent that term and prompt prices influence each other.

This is connected with the fact that so called "paper commodities", or more precisely manipulation with prices of contracts of futures, derived from commodities of commodity indices, can influence their own prompt prices. This is done e.g. by shorting, entering so called "intelligent stock exchange orders" , by trading based on technical analysis etc. Furthermore, big institutional investors, e.g. hedge funds or Exchange traded funds /ETF/ buy, within business, large amounts of commodities. As they only pay margin in this case, they can control large amounts of fundamental commodities with "little money" and in case of financial settling, they do not even need to close their positions. This artificially increases demand for commodities that often represent production inputs, but in this case this does not mean traditional fundamental demand, when relevant commodity is used or stored on a short-time basis within reserves. The whole development trend is, according to many economists, (e.g. Gensler, 2010) enabled by insufficient regulation of commodity markets.

Conclusions

This analysis shows that the process of financialization of commodity markets has both its pros and cons.

The positives include effortless settling of term trading of commodities"; this makes trading easier. Furthermore, it enables to trade commodities in smaller lots; this makes accessible trading of commodities for less important (and smaller) investors. This subsequently improves liquidity of commodities market as well as total traded volumes. Facilitating of diversification of investment portfolios of not only big investors, but those of the smaller ones brings additional positive factors.

On the other side, there is a number of negative influences of financialization of commodities market. First of all it is possible purpose-built manipulation with prompt commodities prices; this is connected with the growth of their volatility, and, last but not least, prevailing impact on growth of commodities prices. This is rather dangerous especially in case of food commodities or production input commodities. As it is possible to manipulate with prompt prices of commodities, it can purposely influence the values of

all synthetic structured products derived from them, which can seriously violate functioning of the worldwide financial market as well as the development of world economy.

Above mentioned facts show that regulation of commodity markets proves to be necessary and the representatives of most economically developed countries are aware of it. Nevertheless it is clear that due to existing close interconnection of commodity and financial markets, it is necessary to perform all regulatory measures jointly for both markets and it is impossible to divide them strictly from each other.

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