

## EXCHANGE TRADED COMMODITIES AS A CATEGORY OF INNOVATIVE PRODUCTS ON EUROPEAN FINANCIAL MARKETS

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### Abstract

The article presents the main features of one category of innovative financial products – exchange traded commodities (ETCs) and results of the analysis of the European market for ETCs. ETCs are products listed and traded on the stock exchanges and they offer investors returns based on various assets (commodities or currencies). In contrast with the most widely recognized exchange traded funds (ETFs), ETCs are structured as debt instruments due to legal requirements regarding investment funds in the European Union. The European ETCs market is the largest in the world (in terms of assets its share in the global market in 2015 was close to 98%). It had developed rapidly until 2012 when total assets reached the record-high value of ca. 26,6 billion EUR (i.e. 9,5% of total assets of all exchange traded products listed in Europe). Over the next few years both the value of assets and market share of ETCs decreased significantly, mostly due to decline of the tracked assets' prices (especially commodities) – during the analyzed time period the average flows to commodity or currency ETCs were close to 0. An important feature of the European market is its high concentration level, both in terms of companies launching ETCs and locations of the trade in the share of ETCs. Four ETC providers manage most of the assets (with the cumulated market share of over 94%). Three exchanges – in London, Milan and Frankfurt am Main account for almost the entire regulated market turnover of ETCs in Europe.

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## INTRODUCTION

In recent years many new financial products have been launched on the financial markets worldwide. One of the key categories of financial innovations is exchange traded products (ETPs), i.e. financial products that are listed and traded through the stock exchanges. ETPs offer investors returns linked to various financial markets, similar to conventional products such as mutual funds. This initially rather simple group has in the last few years evolved quite significantly – apart from the most widely recognized exchange traded funds (ETFs) it now includes other types of products, among them exchange traded commodities (ETCs), exchange traded notes (ETNs) and exchange traded vehicles (ETVs). ETPs may be labeled financial innovations, according to the definitions suggested by Tufano (2003) or Lerner and Tufano (2011) – within their framework financial innovation consists of creating and then popularizing new financial instruments.

The main aim of this article is to present the key characteristics of exchange traded commodities, and the European market for these products, within the perspective of the regional and local financial systems, over the time period 2004-2015. In spite of the fact that ETCs constitute an important fraction of the European ETPs market, the research on this topic is still rather scarce, therefore we address this novel and significant research area. The first section of the article will be devoted to the description of the features of ETCs and their comparison to ETFs as well as review of the literature regarding this subject. It will conclude with the overview of the main benefits and risks linked with investing in ETCs. The second, empirical, section will present the results of the analysis of the European ETC market, particularly evaluation of their role in the entire European ETP market, key trends and market structure (in terms of providers and exchanges). The final section presents conclusions.

## EXCHANGE TRADED COMMODITIES: OVERVIEW

Even though ETCs are listed and traded on financial markets in a few regions of the world, this article will focus only on the European ETC market for two reasons. First, European ETCs comprise the majority of such financial products available worldwide (in terms of assets at the end of October 2015, European ETCs amounted to ca. 98%

(Deutsche Bank, 2015)). Second, Polish financial markets are a part of this region – even though there are currently no ETCs listed on the Warsaw Stock Exchange, Polish investors may still gain access to them by transactions on the exchanges in other EU countries (e.g. Germany or the United Kingdom).

The topic of ETCs has been rarely undertaken in the international or Polish economic literature. There are only a few publications devoted to this category of financial products but in most of them ETCs are just mentioned as one type of ETPs (exchange traded products) without any further analysis. The possible causes of this negligence are the rather short history of ETCs and their use being limited almost solely to the European market. Some of the most important works regarding ETCs are: Bienkowski (2007), Fassas (2011), Kosev and Williams (2011), Dhole (2014) – in which the raised issues include, respectively, the history and structure of ETCs, effects for the commodities markets, key features of ETCs (opposed to similar products), and ETC markets in China and India. Moreover, data on the European ETC market accompanied by some analyses has been published in the report prepared by Deutsche Bank (2010); more recent data can be retrieved from the monthly market review (Deutsche Bank, 2015b). To the best of our knowledge, the only article in the Polish literature is Frączek (2012), with a brief description of the features of ETCs. Consequently, the literature review shows that the topic of ETCs has been rather neglected and there are no current works about the European market – we aim at addressing this important research gap.

## Exchange traded commodities and exchange traded funds: comparison. Physical and synthetic products

It should be noted that there is no broadly accepted definition of exchange traded commodities (in contrast with exchange traded funds). ETCs should not be regarded as a very special subcategory of commodity ETFs, i.e. ETFs tracking prices of commodities. Such an approach is incorrect as the features of ETCs differ significantly from commodity ETFs. A key similarity lies in their goals – they both offer returns linked to commodities or foreign exchange markets, and the fact that they are listed and traded on the stock exchanges. This subsection will

include an outline of the main features of ETFs and ETCs with the focus on the differences.

ETFs can be most broadly defined as financial products with shares listed and traded on the stock exchanges (similar to e.g. equities) whose prices track the prices of selected assets, usually equity or fixed income indices (Agapova, 2011; Abner, 2016; Gastineau, 2010; Lechman & Marszk 2015). In recent years many new types of ETFs have been introduced on the markets, e.g. offering discretionary market access (i.e. semi-active or active ETFs), being thus more similar to the products used in active investing, while ‘traditional’ ETFs are tools for passive investing. Nevertheless, market share of the new types of ETFs remains very low.

ETFs are created by the ETF provider (issuing shares of the ETF), additional roles are played by the market makers responsible for introduction of the shares of ETFs on the financial markets and their redemption (Marszk, 2014). Mechanisms of the ETFs creation and redemption differ depending on the applied replication method: physical (based on the purchase and holding of the tracked assets) or synthetic (returns are tracked using derivatives, usually swap contracts (Miziołek, 2011)); synthetic ETFs are most popular in Europe as in the United States (the world’s largest ETF market) the use of this method is very limited (Deutsche Bank, 2015b; Hill, Nadig, Hougan & Fuhr, 2015).

ETCs are financial products with prices replicating the prices of the tracked commodity or a basket of commodities as well as currencies; technically they are classified as debt instruments (Fassas, 2011). The second part of the definition indicates the main difference between ETCs and ETFs (even ETFs tracking prices of commodities) – shares of ETFs are equity instruments. It should be noted that the name ‘exchange traded commodities’ is a bit misleading as ETCs track not only the prices of the commodities but there are also products linked to the foreign exchange market (usually tracking the returns of the basket of currencies); ETCs tracking commodities are, though, by far the largest group within this category of financial products (in terms of turnover they constitute ca. 95% of the total sum (Deutsche Bank, 2015b)).

Analogically to ETFs, ETCs may use either physical or synthetic replication methods, yet they differ significantly from the ones applied by ETFs (Deutsche Bank, 2010, 2015b, 2017). In the case of physical replication ETCs are backed with securities or assets (most often commodities

such as metals, e.g. gold) that are similar to the ones constituting the tracked index. Second, the synthetic type of ETCs is much more popular and, at the same time, more complicated. Shares (or, to be more precise, notes/certificates – ETCs are debt instruments) of synthetic ETCs are issued by special purpose vehicles (SPVs) established by the ETC provider. Such SPVs are incorporated with the sole aim of the issuance of the ETC notes/certificates and, as they are separate entities, they are protected from the bankruptcy of the founding company. Synthetic ETCs are backed by the assets which remain under the control of the SPV (or are at least pledged to it). Such assets typically do not resemble the tracked assets as they are used as collateral while the replication of returns is achieved through derivatives – total return swaps or futures. There are a few subcategories of synthetic ETCs depending on the following factors: status of the ownership of assets by the SPV (three possibilities are direct ownership, direct pledge/allocated collateral, and third party contracts) and their similarity to the ETCs’ benchmark (very similar or even identical versus assets bearing no resemblance, such as secure assets – money market instruments, government bonds or diversified equities). Due to issues such as storage costs and capacity, perishability or transport costs, synthetic ETCs gained more popularity than the physical, apart from ETCs tracking assets such as precious metals, platinum, palladium or rhodium, for which the above-mentioned problems are not so important like for ETCs linked to e.g. agricultural or energy markets (Deutsche Bank, 2010). Another important difference between physical and synthetic ETCs lies in the type of tracked commodity prices: physicals track the ‘spot’ prices, whereas synthetics track ‘future’ prices (Deutsche Bank, 2011).

### **Benefits and risks of exchange traded commodities**

The key reason for the development of the ETC market is the growing adoption of these products by investors. In order to understand the increasing demand, the benefits offered to their users should be considered. Main benefits of ETCs are the following (Bienkowski, 2007; Borsaltaliana, 2009; Deutsche Bank, 2011, 2015a, 2017):

- 1) they are exchange listed – ETCs can be easily bought and sold intraday through brokerage accounts,
- 2) ETCs may be used to access the commodities market directly and obtain exposure to the prices of wide



range of commodities (tracking error is usually very low),

3) cost of investments in ETCs is lower than for other similar products (management fees are low and the main cost is trading fee),

4) currency ETCs can be used for foreign exchange hedging,

5) high transparency.

Apart from their benefits, investing in ETCs is linked with a few types of risk that should also be taken into account (Borsaltaliana, 2009; Deutsche Bank, 2011, 2015a, 2017):

1) market risk – losses caused by the unfavorable changes in the prices of commodities or exchange rates; maximum loss can be the full invested capital as ETCs are not principal protected,

2) counterparty risk – in the case of the synthetic ETCs default of the counterparty, e.g. within the swap transaction, may lead to losses for the investors; in the case of ETCs using futures contracts losses may be linked with negative roll returns,

3) other, relatively less relevant: exchange rate risk, interest rate risk, regulatory risk, inflation risk, or liquidity risk.

## EUROPEAN EXCHANGE TRADED COMMODITIES

### Data and methodology

Data used in the research presented in this article was extracted from the reports on the ETP markets published by the financial institutions – Deutsche Bank and ETFGI Consulting (Deutsche Bank, 2010, 2015b; ETFGI, 2015). They are sources of statistics such as assets under management (AUM; in short: assets) of ETCs, turnover of the shares of ETCs, leading providers and exchanges; all indicators are in EUR millions unless noted otherwise. It should be noted that assets of the ETCs are a better indicator of the ETC market development level than turnover of ETCs' shares as a fraction of ETCs is traded through the exchanges and only these transactions are included in the official statistics according to the current EU financial regulation. Time span of the analysis is 2004-2015, i.e. the full period of the listing of ETCs on the European market. The European market is understood here as the combined market of the member states of the European Union– there are no ETCs in other countries on

this continent. Due to data availability annual observations were used, except for the analysis of the European ETCs' market growth sources where monthly data were taken into account. Analysis of the market structure was conducted using the latest acquirable data, i.e. as of October, 2015. The methodological framework combines elementary techniques allowing for in-depth examination of data characteristics, including descriptive statistics.

### Legal issues

The first ETCs in Europe were launched in 2004 by two providers: ETF Securities and BNP Paribas (Deutsche Bank, 2010). The reason for the creation and development of the ETCs in Europe were regulations on ETPs (initially applying only to ETFs as there were no other types of ETPs). A key legal document was the UCITS (shortcut for 'Undertakings for Collective Investment in Transferable Securities') III directive from 2002 which is still the key document regarding the creation and sale of investment funds in the EU. According to the UCITS regulation most ETFs in Europe are structured as open end investment companies (Maurer & Williams, 2015). The UCITS directive allows the use of derivatives, e.g. swap contracts, for the replication of returns which boosted the popularity of synthetic ETFs, including commodity ETFs. However, a serious drawback of this regulation for many investors was that UCITS III allows only the development of products tracking diversified commodity indices which limits the scope of possible commodity ETFs as, for example, it is impossible to launch commodity ETFs tracking only prices of gold.

In order to launch financial products offering more limited exposure, providers needed to use legal structures other than in case of ETFs; the most popular solution became issuance of debt instruments through SPVs. As a result, ETCs are not registered and sold under the UCITS regulation but instead under the European Prospectus Directive (EUPD). EUPD allows the cross-listing (listing on more than one exchange, in more than one country) which is widely used by the ETC providers as most SPV issuing shares of ETCs are domiciled due to legal and tax reasons in Ireland or off-shore UK locations (e.g. Jersey); Germany is also rarely used.

### Changes on the European market for exchange traded commodities: main trends and structure

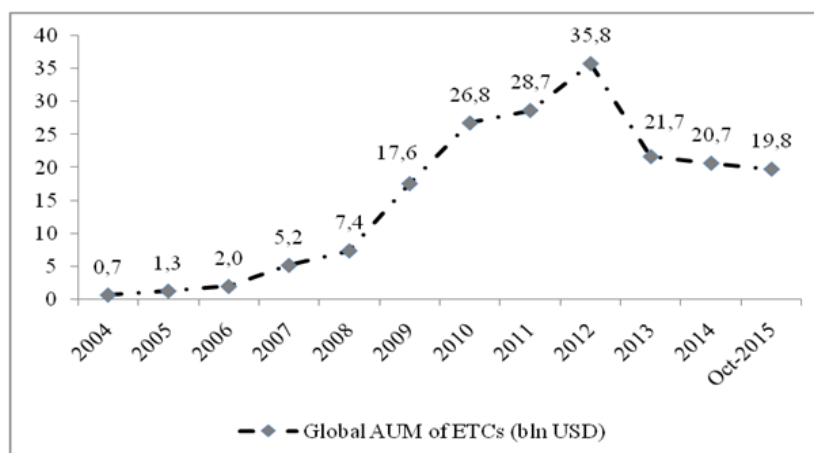
ETCs were launched for the first time ever in Australia in 2003 (Borsaltaliana, 2009). Up to this day Australia remains the largest ETC market outside Europe in terms of both assets and turnover. Soon after their introduction, the assets of the ETCs listed worldwide began to grow rapidly (see Figure 1). By the end of 2007 they increased by ca. 643% compared to the end of 2004 (first year with available data on AUM of ETCs). 2007 may be regarded as the critical year for the adaption and expansion of ETCs – two main factors that led to this process were the growing popularity of ETFs and search among investors for products with returns unrelated to the equity or debt markets (Deutsche Bank 2010). Then, up to 2012, it continued to expand at an impressive pace – average annual growth rate was at ca. 53% which meant that it was the fastest growing category of exchange traded products (ETFGI, 2015). The growth of the ETCs’ assets was fuelled by the growing interest of the investors in these products which allowed them to rather easily gain exposure to the booming commodity market. The peak year was achieved in 2012 and afterwards assets of ETCs declined most significantly in 2013. As it will be discussed later, the decrease in assets since 2013 onwards was caused both by the declining prices of commodities (resulting in lower market values of the shares of ETCs) and (yet to a much lower degree) the outflow of capital from ETCs.

Figure 2 depicts an image very similar to the one presented above which should not be surprising if the dominance of the European region with reference to the global ETC market is taken into account (share of the rest of the world in the global AUM in the time span considered was at only ca. 2-5%; slight differences between the

values on the two graphs are caused by fluctuations of exchange rates). Apart from the absolute value of AUM of European ETCs yet another important indicator is their share in all exchange traded products listed in Europe (it may be regarded as the relative market development indicator). At the end of 2004 (the year of the first ETC listing in Europe) it slightly exceeded 2%, while in 2012 it reached maximum level of ca. 9,5%. It shows that, despite their rather limited coverage (only commodities and rarely currencies), the European ETC market grew faster than the market for ETFs (which offer a much wider span of tracked assets). In 2013 the share of the ETCs declined by a similar percentage as the absolute value of their assets. However, while value of assets of ETCs in EUR millions increased between the end of 2013 and October 2015, their share in the total European market has declined to ca. 3,8%, i.e. the lowest value since the beginning of the fast growth in 2007. It indicates that ETCs have become relatively less popular than ETFs offering returns linked to equity (especially tracking developed markets) and fixed income; assets of the direct competition of ETCs on the ETF market, i.e. commodity ETFs, decreased significantly (Deutsche Bank, 2015b).

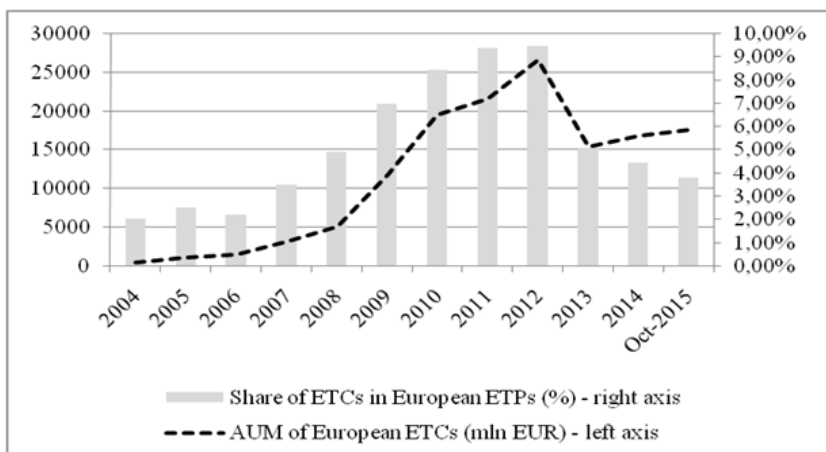
In order to fully analyze the changes occurring on the European ETC market in the most recent period, it is useful to consider the sources of the variations in their assets (see Figure 3). As can be seen, the key causes of the assets’ change in the given month were not the cash flows from investors to ETCs (or in the opposite direction) but changes in the prices of assets tracked by ETCs (i.e. movements of the prices of commodities). It shows that the interest of investors remains quite stable—in the almost

**Figure 1: Global assets of exchange traded commodities. 2004-October 2015(billion USD)**



Source: Own elaboration based on (Deutsche Bank, 2015b)

Figure 2: Assets of exchange traded commodities listed in Europe. 2004–October 2015



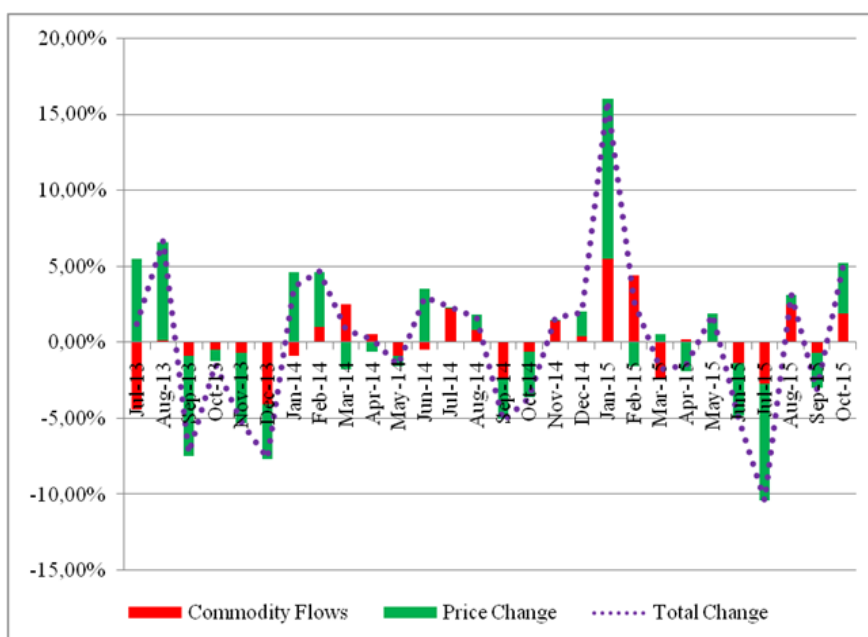
Source: Own calculations based on (ETFGI, 2015; Deutsche Bank, 2010, 2015b)

2,5 years considered the average flows to commodity ETCs were close to 0 (similarly in the case of currency ETCs). As a result, it may be stated that the European ETC market for over the last two years has been at a standstill. Another interesting observation is the prompt reaction of investors to changes in the prices of assets (mostly prices of commodities) – in most months the direction of flows was the same as fluctuations in prices (i.e. negative price change accompanied by the sale of shares of ETCs), in a

few (e.g. February, 2015) the reaction to a large change in the prices was slightly delayed.

The European ETC market is highly concentrated both in terms of the providers (companies launching and managing ETCs) and locations of the trade in their shares (see Figures 4 and 5). Four ETC providers managing most assets are ETF Securities (a multinational asset management corporation which focuses on ETPs; it offers most ETCs, tracking various commodity classes), Source

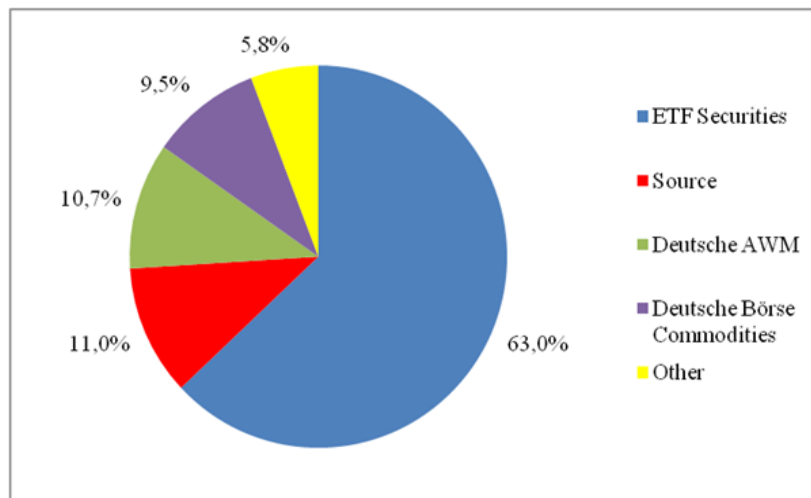
Figure 3: Composition of monthly changes in assets of European exchange traded commodities. July, 2013–October 2015



Source: Own elaboration based on (Deutsche Bank, 2015b)

Note: currency ETCs flows have been omitted due to very low values.

Figure 4: Share of providers in the assets of European exchange traded commodities as of the end of October 2015



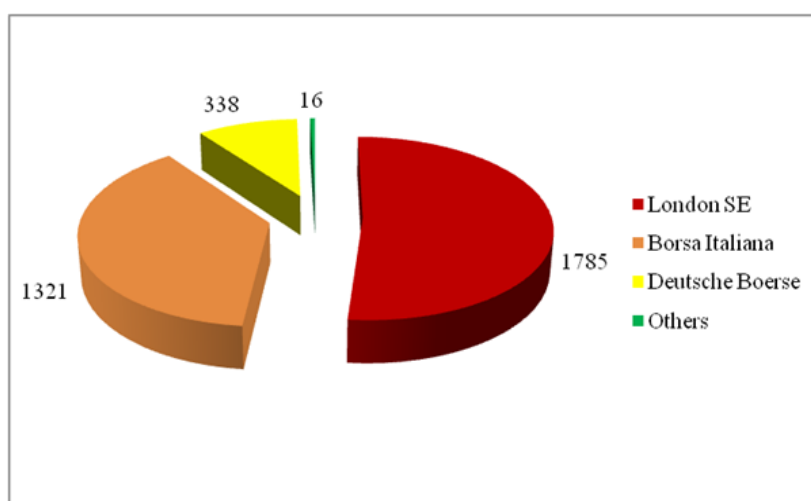
Source: Own calculations based on (Deutsche Bank, 2015b)

(a UK-based corporation founded by a few global banks, e.g. Goldman Sachs and JP Morgan), Deutsche AWM (part of the Deutsche Bank corporation) and Deutsche Börse Commodities (a subsidiary of the German stock exchange), with the cumulated share of over 94%. Almost the entire regulated market turnover of ETCs' shares in Europe takes place on three exchanges – headquartered in London, Milan and Frankfurt am Main. It shows that ETCs remain products almost unknown and rarely used in other European countries (at least if data about exchanges are considered) – listing of ETCs on other exchanges, by international or local providers may boost their future growth.

## CONCLUSIONS

Exchange traded commodities are financial products included in the larger group of exchange traded products, which consists above all of most known and used exchange traded funds. ETCs offer investors the possibility to gain exposure to the commodity or foreign exchange markets through two replication methods: physical or synthetic (the second one based on derivatives e.g. swaps). In contrast to ETFs, ETCs are issued and sold in the form of notes or certificates (the issuer is SPV), whereas shares of ETFs resemble equity. Despite many benefits of ETCs, their risks should also be carefully evaluated.

Figure 5: Turnover of shares of exchange traded commodities on European stock exchanges in October 2015



Source: own calculations based on (Deutsche Bank, 2015b)



The European ETC market is the world's largest in terms of assets under management. The key difference between European ETFs and ETCs lies in their legal form: ETFs are structured under the UCITS directive, while ETCs providers use the EUPD due to certain restrictions linked with UCITS. The European ETC market had grown rapidly until 2012, boosted by the growing use of new products and demand from investors seeking diversification possibilities, but since that year falling prices of commodities has led to substantial decline in the assets of ETCs. The ETC market in Europe is highly concentrated and the vast majority of products are issued by one of the

four leading providers and traded on exchanges in three countries: United Kingdom, Italy and Germany.

Further research direction in this field may include the detailed analysis of the ETC market divided according to the tracked asset classes (precious metals, gold, agriculture, etc.), efficiency of investing in ETCs (issues such as tracking error and tracking cost), and possible applications of ETCs in portfolio management. Yet another interesting issue is the Polish perspective, i.e. explanation of the reasons for the lack of ETCs on the Polish financial markets and evaluation of the possible future changes.

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