

# How do derivatives benefit the real economy?

Anyone following much of the public conversation on derivatives may well come to the conclusion that derivatives are nothing but trouble: highly risky, crisis-exacerbating financial instruments without any connection to reality and no function in the real economy. Is this actually the case?

## What exactly are derivatives?

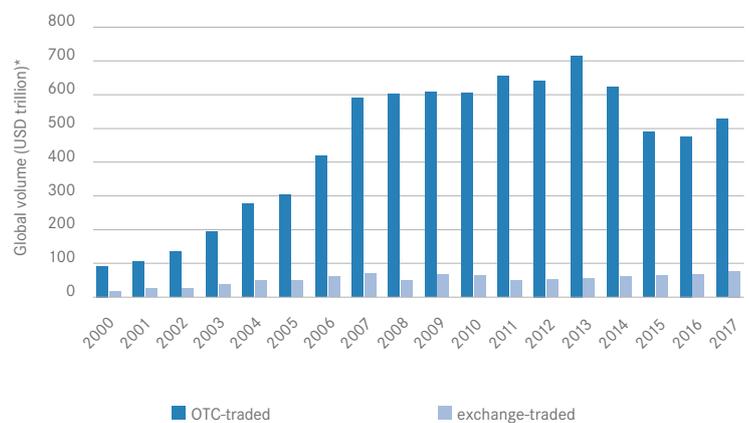
As a first step, we need to clarify precisely what we mean by derivatives. The term ‘derivative’ covers a wide range of very different financial instruments. What all derivatives have in common is that they are financial products whose own performance is derived from that of other products. The term ‘derivative’ comes from the Latin verb ‘derivare’, which means ‘to derive from’. Here, however, is where most commonalities between the products end.

## Not all derivatives are alike

An important difference between derivatives is whether they have been issued for a retail investor, an institutional investor, or a company. The first group comprises structured securities such as the investment and leverage products that the German Derivatives Association (DDV) focuses on, which have a current market volume of around EUR 70 billion in Germany. These are largely aimed at retail investors, and are usually listed on the Frankfurt and Stuttgart exchanges.

Derivatives for institutional investors are traded either on an exchange or on the over-the-counter (OTC) market. Exchange-traded derivatives like futures or warrants are largely standardised, but their selection is limited with respect to underlying, volume, price and timing. OTC-traded derivatives are bilateral contracts like forwards and swaps. OTC derivatives are not regulated with respect to their features and contractual arrangements, however, regulations apply to trading in these derivatives. Most derivatives transactions take place on the OTC market. OTC derivatives include credit, commodity, currency and interest rate derivative contracts. These are regularly documented by means of master agreements, and often serve to hedge business risks.

OTC- and exchange-traded derivatives



\*based on the nominal value of the derivatives

Source: Bank for International Settlements, www.bis.org

## Facts and Figures

### Major significance of derivative business

The first thing that catches the eye with worldwide OTC derivative trading is the exceptionally large volume. At the end of 2017, this totalled an almost unimaginable USD 531,912 billion. However, this trillion-dollar amount is based on the nominal value of the derivatives, not their economic value. For example, if BASF concludes a contract to purchase USD 1.3 billion of oil in 15 months at a certain price in order to calculate the end price of its chemical products based on these costs, the USD 1.3 billion is included in the total and not the costs that BASF has to pay for this contract. The costs for derivative contracts are typically only a single-digit percentage of this total.

### Hedging risks

Given this, derivatives appear to be attractive for companies and to possess high economic value. This appeal can essentially be described in one word: security. Companies use derivatives to hedge against market price risks in the form of fluctuations in currencies, commodity prices, or interest rates. Hedging against market price risks is part of risk management and has the goal of increasing planning security, budget accuracy, and crisis stability.

The 2017 annual report for BMW provides a concrete example of this. In the report, the international automaker clearly describes how it uses derivatives to hedge against currency risks, commodity risks, and interest rate fluctuation risks. To produce its vehicles, BMW has to procure commodities like precious metals (platinum, palladium, rhodium), non-ferrous metals (aluminium, copper, lead, nickel), steel and raw materials needed for steel (iron ore, coking coal), and energy (gas, electricity). As part of this process, BMW uses financial derivatives and supply contracts with price controls. This allows the company to absorb the effects of price fluctuations and to increase planning security. In its financial services segment, BMW also manages interest rate fluctuation risks by using interest rate derivatives.



## ... but how does this work in practice?

A company needs ten tonnes of aluminium in six months' time for its production processes. To avoid storage costs and the associated security expenses, the aluminium is actually purchased in six months. The current price per tonne is USD 1,900. In order to be able to calculate the resulting costs precisely and to protect itself against rising prices, the company purchases a futures contract for aluminium on an exchange. The futures contract stipulates that in six months (delivery date) the company can (and must) purchase 10 tonnes of aluminium (volume and underlying) for USD 1,900 (price/forward price). Half a year later, the contract is fulfilled – the company pays USD 2,100 per tonne on the spot market and receives the goods, while receiving the difference between the futures contract and the amount

paid (USD 200 per tonne – a total of USD 2,000) from the counterparty via the exchange (instead of another ten tonnes of the metal).

As a result, the company effectively obtains the metal at the original price of USD 1,900. The company pays a premium for the futures contract itself. Whether the futures contract was financially worthwhile for the company in retrospect (i. e. whether the premium was lower than the cost difference) depends on the development of the market price and on how the counterparty evaluated the price development and priced the futures. In any case, the futures contract provides the company with planning and calculation security.

This example is taken from the 2015 publication Absicherungsinstrumente from the Association of German Banks (Bundesverband deutscher Banken, BdB).