



## Emerging Challenges for Commodity Risk Managers from an Industrial Consumer's Standpoint

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*This digest article is based on a similarly themed presentation to the JPMCC's Research Council on September 30, 2016.*



Sven Streitmayer's colleague, Steffen Hammer, represented Robert Bosch GmbH (Germany) at the JPMCC's September 30, 2016 Research Council meeting. Mr. Hammer is Vice President for Commodity Purchasing at Bosch and is also a member of the JPMCC's Advisory Council. In this photo, Mr. Hammer is discussing his JPMCC Research Council presentation on "Emerging Risks and Challenges of Managing Global Commodity Supply Chains" with (L-to-R) Dr. Robert Vigfusson of the Federal Reserve System (Washington, D.C.), Professor James Hamilton of the University of California, San Diego, and with Professor Vince Kaminski of Rice University. Drs. Vigfusson, Hamilton, and Kaminski are all members of the JPMCC's Research Council. Mr. Streitmayer of Robert Bosch GmbH, the author of this article, joined the JPMCC's Research Council at the end of 2016.



## The Case for Risk Management

In an increasingly complex economic environment with business models changing rapidly, and with technological innovations altering whole industries and dynamic new competitors from the likes of Google, traditional sectors like the automotive industry have to adapt fast or even reinvent a significant share of their products, processes and culture. Naturally, this causes a lot of uncertainty in future strategy and earnings.

Against this background the prudent management of corporate risks has become ever more important. For a manufacturing company like Bosch with a turnover of more than 70 billion Euro and a purchasing volume of roughly 30 billion Euro, whereof more than 10% are raw materials like copper, aluminum or steel, an active management of commodity risks (alongside currency and interest rate risks) is inevitable to ensure planning reliability on a product and P&L level.

## Commodity Risk Management Approaches

At Bosch we essentially distinguish between two broad types of commodity risk-management approaches: (1) commercial risk-management activities and (2) technical risk-management activities, which are illustrated in Figure 1 on the next page.

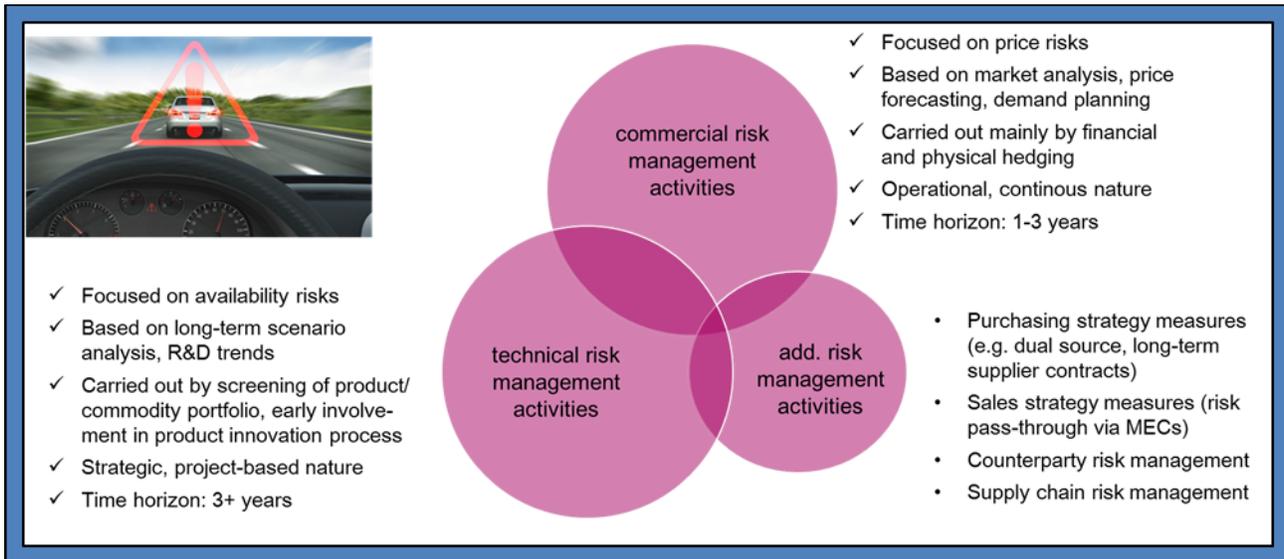
The first one originates from the natural volatility of commodity markets where temporary supply-demand imbalances lead to price fluctuations. In this regard our main focus is to manage the price risks by hedging our future commodity demands for the production process on a financial (derivative) or physical basis. By this means price and planning stability for the raw material content of our products can be achieved as we are no longer exposed to the volatility of commodity prices. These commercial risk-management activities are operational and continuous in nature and normally have a time horizon of up to three years – limited by the availability of reliable and concrete sales forecasts to assess the prospective commodity demand accordingly.

The second area of commodity risk-management activities is a more technologically driven approach centered on the availability risks of Bosch's commodity demand. After the shortage in the supply of rare earth metals emerged in the years 2010/2011, Bosch introduced a system of regular checks and screenings of our product portfolio in terms of potentially scarce raw materials. This is accompanied by early involvement measures within the product innovation process. Commodity market experts team up with research and development departments in order to proactively identify critical raw materials intended for the usage in newly invented products. Thus technological alternatives or rather substitution of the commodity input can be considered in a very early stage. A recent example stems from the field of battery technology where market participants have to carefully weigh the long-term availability of commodities like lithium or nickel before deciding on a standard technology to be introduced.

In sum the technical risk-management activities are more strategic and project oriented. Based on long-term scenario analysis, the time horizon of the measures ranges from three to ten years.



**Figure 1**  
**Types of Commodity Risk Management Employed**



Abbreviation: MEC stands for “metal escalation clause,” which is a term used within sales contracts when the price risk of a specific commodity processed in a product is transferred to the customer.

Source: Robert Bosch GmbH.

## Emerging Challenges for Commodity Risk Managers

Today’s commodity risk managers are faced with numerous challenges. Some of them are new, resulting from a changing regulatory landscape or an evolution in technology, and some of them are reoccurring topics such as the selection of an efficient hedging instrument. Below we outline selected challenges that we consider relevant for our business and at the same time can be seen as recent use cases.

### Increasing Requirements from Financial Market Regulation

One of the big changes impacting commodity trading and hedging in recent years are the increasing requirements from financial market regulators. In the aftermath of the 2007/2008 financial crisis, authorities around the world switched from a light-touch approach to a much more extensive and strict way of market governance and surveillance. This came along with a whole new set of regulatory rules and financial market laws such as the Dodd–Frank Act in the United States and the European Market Infrastructure Regulation (EMIR) legislation within the European Union. Generally the aim was “to improve transparency in the derivatives markets, mitigate systemic risk, and protect against market abuse” (G20 Leaders Statement from The Pittsburgh Summit, September 2009). Surely the new rules are well intended and should be beneficial to all market participants. The flip side of this is increasing bureaucracy and significant administrative effort on the side of the regulated companies. For corporate hedgers that means, to give an example, that to comply with EMIR rules, every single Over-the-Counter



transaction carried out for risk-management purposes has to be reported to a central trade repository. Furthermore risk-mitigation techniques and clearing obligations have been introduced, adding to the need for a major adjustment of back-office and front-office processes. Other than financial institutions like banks and brokers, it is relatively new for most industrial corporations to be in the scope of regulatory activities. Risk managers are therefore facing completely new responsibilities in their daily routine, which will require an enlarged set of skills and competencies.

### Risk Management of Non-Exchange-Traded Commodities

Whereas the risk management of standardized, exchange-traded commodities like copper, nickel or crude oil is facilitated by data availability, market transparency and (of course) liquid hedging instruments is lacking in most of the non-exchange-traded commodities. This is a challenge as the assessment and management of price and availability risks for these commodities can be very difficult. At Bosch we currently have to handle this task in the case of lithium, which is an important raw material in the batteries we are sourcing for usage in our power tools. In this regard the key questions for the purchasing strategy of battery packs are (1) how to secure indirect lithium supply in a distributed supply chain and (2) how could a cell purchaser safeguard the price of lithium? Hence the first question addresses the availability risk, which is even more complicated by the fact that the input of the raw material from the mined lithium via different semi-finished qualities is spread over numerous steps in the supply chain. Additionally the market is dominated by a few large primary lithium producers, making it prone to supply disruptions and information imbalances.

The second element handles the question of price risk management for a commodity where no futures or forward market exists. In the absence of available derivative instruments for lithium, the only way to provide for price stability is to enter into long-term, fixed price contracts with the battery suppliers, assuming their willingness to do so. That, on the other hand, is only possible at the expense of flexibility, as one has to commit guaranteed quantities to certain suppliers. In sum one can state quite simply that the risk management of non-exchange-traded commodities is quite demanding and challenging.

### Involvement in Newly Launched Commodity Futures Contracts

Another use case that commodity risk managers regularly have to deal with is the question of the involvement in newly launched derivative markets and instruments. There have been a couple of failed attempts to establish new commodity futures contracts such as plastics trading on the London Metal Exchange (LME), which was introduced in 2005 but delisted in 2011 due to a lack of significant trading volume or open interest. Nonetheless commodity exchanges around the globe are continuously looking to expand their offerings. Of the more recent examples, the aluminum premium contracts launched by the CME Group as well as its steel futures look especially promising to us as a big metals consumer. However with the recent futures market history in mind, one should carefully weigh the benefits of using newly launched derivative contracts against the risk of a possible failure of these.

In our view the following questions have to be addressed before entering new futures markets: is there enough liquidity in these relatively young futures contracts to enter and exit positions smoothly? What about the costs of trading in terms of bid-ask-spreads? How useful is the forward curve in these cash-



focused markets like steel or aluminum premiums? Do contract specifications and reference benchmarks (such as *Metal Bulletin* or CRU in the case of CME's contracts) match conventions of physical trading? If most of these questions can be affirmed, the chances of a successful implementation of newly launched commodity futures contracts within an existing risk management system seem quite high.

## Conclusion

In a nutshell, the goals of commodity risk management within an industrial corporation are to (a) reduce the impact of short- and long-term price volatility to stabilize earnings, (b) foster planning reliability, and (c) identify and manage availability risks in the supply chain of raw materials. In a broader context, commodity risk management should therefore be seen as an essential instrument for the implementation of corporate strategy.

At the same time, emerging challenges like the ones described above are a vital and exciting part of a commodity risk manager's daily business, adding to the scope and responsibilities of that function.

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## Author Biography

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Mr. Streitmayer is Senior Commodity Risk Manager at Robert Bosch GmbH, Stuttgart, Germany. In addition to the management of Bosch's global hedging and derivative trading activities, Mr. Streitmayer is responsible for commodity research, analysis and internal price forecasting.

Prior to his current role, Mr. Streitmayer worked as commodity strategist and portfolio manager for Landesbank Baden-Württemberg (LBBW) from 2007 through 2012. Mr. Streitmayer holds a Diploma in Economics from the University of Hohenheim.

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