Commodity Pricing and Management

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The theoretical literature on commodity futures pricing centers around the theory of storage and the hedging pressure hypothesis. The theory of storage relates the dynamics of commodity futures prices to the incentive of agents to hold the physical commodity. The hedging pressure hypothesis instead explains the pricing of commodity futures in reference to the net positions of hedgers. Futures prices are predicted to increase (and markets are backwardated) when inventories are scarce and hedgers are net short. Conversely, futures prices are expected to fall (and markets are contangoed) when inventories are abundant and hedgers are net long.

My contribution to this literature is to provide empirical evidence on the factors that are relevant to the pricing of commodity futures. This lead my coauthors and myself to consider past performance, hedging pressure, skewness and fears as signals for asset allocation and to analysis the performance of the resulting long-short commodity-based portfolios. In an extension to these initial endeavors, we also tested whether integrating some of these signals into a unique portfolio (as opposed to holding them as stand-alone) can improve performance further. In an extension of this line of research to equity markets, we analyzed whether the risk premia that have been shown to price commodity futures contracts can be used to explain the pricing of equity portfolios in the context of the Intertemporal Capital Asset Pricing Model (ICAPM) of Merton (1973). The conclusion is that commodity risk premia can act as state variables in the sense of the ICAPM inasmuch as they help

predict shifts in the investment opportunity set of agents in a way that is consistent with rational pricing. Finally, recent research projects center on using term structure models and neural networks to design novel strategies in commodity futures markets and on the reasons for the negative pricing of the WTI May 2020 futures contract as observed in April 20, 2020.

Altogether the research was well received by the academic community with publications in the *Review of Finance* and in the *Journal of Banking and Finance*. In recognition of research impact, I was also invited to act as associate editor to journals such as the *Journal of Banking and Finance* (2014-), the *Journal of Commodity Markets* (2015-) or the *International Review of Financial Analysis* (2014-2018). As it is applied in nature, my research is also of interest to the investment community. As testimonies of that relevance, my work on commodity management forms the basis of strategies followed by the industry and was awarded research grants from financial market participants (USCF, CME Group, INQUIRE). I also had the opportunity to act as consultant on questions pertaining to the structuring and price impact of commodity smart-beta products for companies such as Barclays Bank plc and UBS.