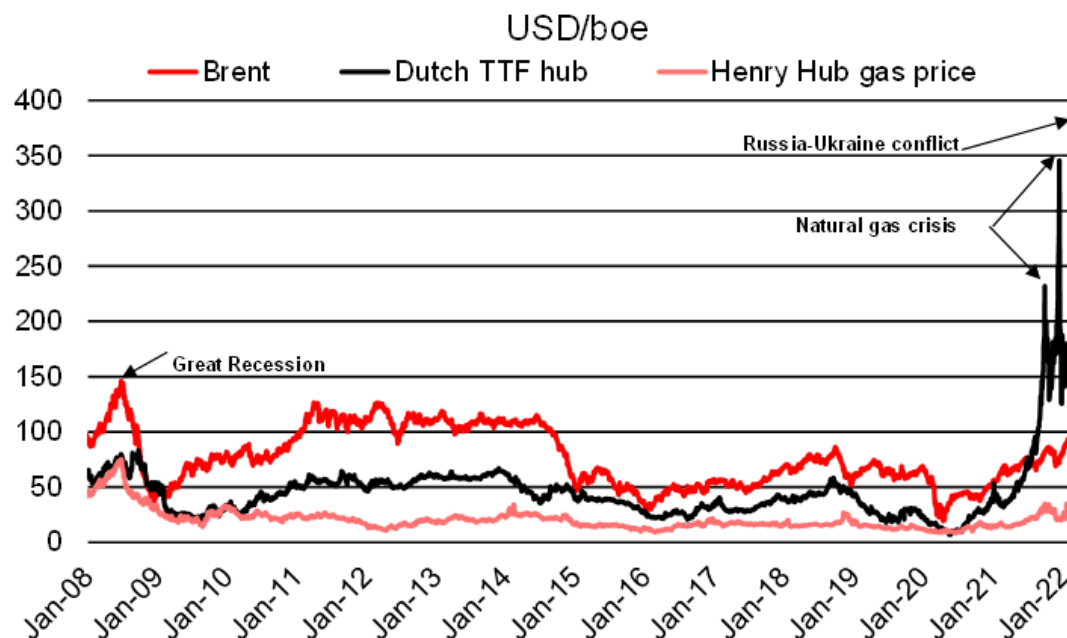


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Europe's asymmetric natural-gas shock

Abstract from *Chart of the Week*
UniCredit Research



Source: Bloomberg, UniCredit Research

- Oil and natural gas are interconnected commodities. When it comes to their production, they are either complements (natural gas is a byproduct of oil extraction, which is referred to as association) or rivals (they are produced from separate wells, which is referred to as non-association). Therefore, price differentials between the two determine the allocation of drilling resources at wellheads when they are both available to a producer; one or the other is favored depending on market conditions as well as on delivery capacity. When it comes to consumption, especially for power generation, they are substitutes, at least to some extent, even if the degree to which they can serve as substitutes varies from location to location. Equally, price-spreads between the two shape choices made by power companies as long as their plants are convertible.
- However, comparison of their prices is not straightforward because they are expressed in different units (oil in barrels [bbl] and natural gas in British thermal units [Btu] or megawatts per hour [MWh]). Our Chart of the Week uses standard metric conversion to circumvent this problem by expressing natural-gas prices in Europe (Dutch TTF) and in the US (Henry Hub gas price) as barrels of oil equivalent (boe). What matters for the comparison is the amount of energy contained in each unit. One MWh (the unit used to refer to Dutch TTF) is equal to 0.59boe, whereas one MBtu (the unit used to refer to the Henry Hub gas price) is equal to 0.18boe. In the case of the Dutch TTF, the USD-EUR exchange rate is also factored in.
- The chart tells two stories. First, it shows how asymmetrically the Russia-Ukraine conflict is affecting Europe compared to the US. While the oil market is internationally integrated, the natural-gas one is regionally segmented – as gas needs to be transported through physical infrastructure, such as pipelines. At the beginning of the conflict, the Dutch TTF was close to USD 400/boe, a level never hit by the price for Brent – not even at the peak of the natural gas crisis in 2021. Currently, the price for European natural gas is several times higher than the US benchmark – a price differential that is weighing not just on the

competitiveness of European firms but that also explains why Brussels has refrained from imposing energy-related sanctions on Russia.

- Second, up until 2021, natural gas prices were always lower than prices for Brent in both Europe and the US. For Europe, which, unlike the US, is highly dependent on imports of both commodities, natural gas did not just represent a more affordable source of energy but has also historically provided an opportunity to diversify the energy mix away from sources in the Middle East after the two oil shocks of the 1970s. In order to reduce its vulnerability to geopolitical shocks, Europe shifted towards using natural gas, especially from Russia, which was seen as a more reliable and stable commercial partner than Middle Eastern producers. Current events are forcing Europe to revise its energy strategy once again. According to President of the European Commission Ursula von der Leyen, it will take until 2027 for the continent to become fully independent from Russian gas.