BOX I.2:

Non-linear oil price dynamics

The conflict in the Middle East and the shutdown of the Strait of Hormuz have curtailed global oil supply significantly. In the days following this Report's statistical cutoff, an agreement was announced between the United States and Iran that would allow the Strait to reopen. However, doubts remain regarding several factors, including how soon global oil supply can be restored, what level of demand it will face, and whether geopolitical risk premiums will persist. This box analyzes the role that oil inventories —and expectations regarding their duration— have played in recent price dynamics, as well as the risks associated with a possible resurgence of tensions and a potential deterioration in market expectations regarding a prompt reopening of the Strait.

Use of buffers

The outbreak of the conflict and the closure of the Strait of Hormuz halted the flow of nearly 20 million oil barrels per day (mbd), the equivalent to 20% of global production. According to the International Energy Agency (IEA)[1]/, part of that shortage has been offset by pipeline diversions (about 6 mbd), the use of global inventories (around 5 mbd), and an increase in global supply (about 1 mbd) (Figure I.25). However, a supply shortfall persists, and constraints have been heterogeneous across regions, with several Asian economies among the hardest hit[2]/.

The use of inventories to offset lower supply has played an important role, but it has its limits. Prior to the conflict, observable global inventories (crude oil plus refined products) stood at around 8,200 million barrels (mb), a high level by historical standards. According to IEA estimates, by the end of April, reserves had fallen to 7,950 mb, with various sources placing the operational stress level at around 7,600 mb and the lower limit at around 6,800 mb[3]/. This means that inventories below those thresholds would lead to increasing operational difficulties, raising the opportunity cost of each additional barrel used. If inventory drawdowns continue at their recent pace, the stress zone could be reached relatively soon. In any case, this depends largely on the speed at which the actual flow through the Strait is restored.

Potential stress scenarios in the market

Wlasiuk et al. (2026) estimate that, in an operational stress scenario, significant price increases could occur through two channels. The first is relatively gradual: according to inventory management theories, inventories constitute a reserve of flexibility whose value (convenience yield) rises with scarcity: the lower the inventories, the greater their value. This implies that continued use of reserves will require increasingly higher prices.

The second channel relates to theories of bank runs and global games, and is more abrupt in nature. When reserves are relatively low, holders of inventories face a coordination problem: if they anticipate that others will hoard barrels in anticipation of a shortage, it is in their best interest to hoard as well. In such a situation, collective hoarding validates the expectation —the same logic at work in a bank run or a run on a fixed exchange rate. Unlike the gradual channel, the market responds to expectations about aggregate behavior, which can become self-fulfilling. This channel can cause a discrete price jump, even before inventories are physically depleted or reach stress levels. Under this logic,

[1]/ International Energy Agency: Oil Market Report, may 2026.

[2]/ Ibid.

[3]/ The figures correspond to observable global inventories (world oil stocks for which timely and verifiable data are available) reported by the IEA in its monthly report (IEA, 2026). For stress levels, the reference used is the note published on 30 April 2026 by JP Morgan, "The Illusion of Plenty". Other institutions —e.g., Citi, Morgan Stanley and Goldman Sachs, among others— agree with the assessment that global inventories are approaching operationally critical thresholds, although their specific formulations and timing differ somewhat.

the market can operate under three different regimes (Figure I.26): (i) a "normal" regime where inventories are high and the probability of a significant supply constraint is low; (ii) a "fragile" regime where inventories are more limited and/or the probability of disruptions is higher (here, the probability of a "run" becomes significant); and (iii) a stress regime, where inventories are so low or supply constraints so severe that inventories are almost certainly hoarded and the price shoots up.

Wlasiuk et al. (2026) calibrate a structural model to quantify both channels[4]/. The price increase has an upper bound determined by the equilibrium of supply and demand, assuming the Strait is permanently closed and no inventory depletion. Based on an international trade model, the authors estimate this threshold to be between US$160 and US$190 per barrel.

If global oil supply is not replenished promptly —for example, because the Strait does not open in the short term—, they estimate that, without a run, the oil price would rise gradually until reaching the upper limit by mid-2027. A scenario involving a run would cause the price increase to occur sooner: upon crossing the fragility zone, coordinated inventory hoarding would trigger a discrete jump in price to that same level of US$160–US$190, within a much shorter timeframe.

Beyond the timeline of the increase, a scenario involving a sharp spike in oil prices is important because it could be associated with a rapid deterioration in global financial conditions, including significant stock market declines. Furthermore, as has been observed in response to various events since the start of the conflict, this scenario would also be associated with increases in long-term interest rates, rather than declines, as is typical during risk-off events.

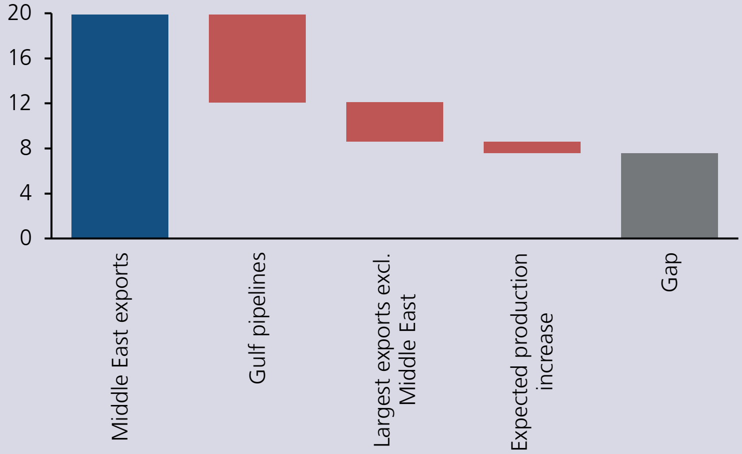
The model does not treat the oil run as a certain event, but rather assigns it an endogenous probability that increases as inventories approach the stress threshold and/or the probability of the Strait reopening decreases. This highlights the fact that, if the flow of oil through the Strait does not begin to increase, the market equilibrium will become increasingly fragile as weeks go by. Conversely, if the Strait does reopen, the market would resume normal operations, although prices would not immediately return to their previous levels: this depends on the damage to infrastructure, the need to replenish depleted inventories, and the risk of a new disruption.

Conclusions

Although the closure of the Strait of Hormuz reduced global oil supply by about 20%, oil prices have remained well below their all-time highs, and futures contracts continue to point to a decline in the coming months. This reaction is largely due to the drawdown of inventories, the use of alternative export routes from the Middle East, and the markets' continued perception that the conflict will be resolved sooner rather than later. However, if global oil supply takes longer to recover —for example, because the closure of the Strait drags on— inventories could approach a fragile zone, and the price response would cease to be gradual, leading to a significant spike. Such a scenario —the likelihood of which increases as inventories decline and supply fails to recover— could trigger a significant deterioration in global financial conditions. In such a scenario, the implications for medium-term inflationary convergence will depend on the trade-off between short-term inflationary pressures and weaker economic activity over the policy horizon.

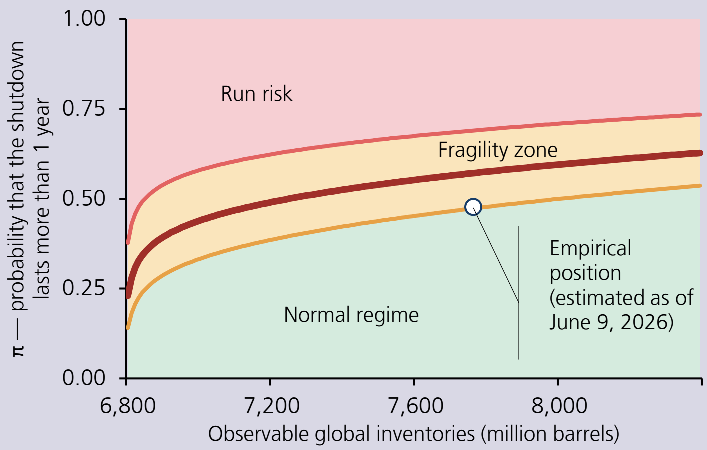
[4]/ The model combines inventory theory (Deaton and Laroque, 1992) with a global coordination game (Morris and Shin, 1998; Goldstein and Pauzner, 2005); for more on multiple equilibria with public signals, see Angeletos and Werning (2006).

FIGURE I.25
Current and pre-conflict oil exports (1)
(million barrels per day)



(1) According to the IEA, the largest exports outside the Middle East (3.5 mb/d) come primarily from the drawdown of global inventories, which are reportedly declining at a rate of approximately 5 mb/d. More details can be found in Wlasiuk et al. (2026).
Sources: Wlasiuk et al. (2026), based on IEA and OPEC data.

FIGURE I.26
Conceptual framework of possible regimes (1)
(probability)



(1) Phase diagram of the structural inventory–price model. The x-axis represents observable global inventories (mb), with operational lower limit (~6,800 mb) and stress (~7,600 mb) thresholds. The y-axis shows π, the probability that the shutdown lasts more than one year. The boundaries correspond to iso-curves of the run probability q (central: q = 0.5; dashed: q = 0.25 / 0.75), which delineate the fragility zone. The current position (June 9, 2026) is based on observable inventories projected from the IEA OMR May 2026 (latest available; ~7,950 mb as of April 30, 2026) and the probability π implied by the Brent M1 price on that date (USD 91.57/bbl). The positions are intended to illustrate the fragility mechanism and should not be interpreted as calibrated event probabilities. For definitions, derivation of the boundaries, and calibration details, see Wlasiuk et al. (2026).
Sources: Wlasiuk et al. (2026), based on IEA OMR data (May 13 2026).