Energy sanctions and the impact on prices for consumers

Four case studies from the coal and oil markets

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10 June 2022

Conclusion: Energy embargoes increase prices paid by consumers significantly in the short and medium term unless there are alternative supplies readily available to make up the deficit.

Corollary: Boycotts are an attractive policy instrument when excess production capacity (actual or potential) allows energy from sanctioned sources to be replaced by non-sanctioned ones.

Case Study 1: Coal during the English Civil War (1643–1644)

By the mid-17th century, coal had replaced wood as the principal fuel for domestic heating and manufacturing in London and other towns near the east coast of England.

Production was concentrated in Newcastle and the northeast from where it was carried by ship down the coast to London and other major consumption centres in the south.

But in January 1643, Parliament, based in London, banned ships from fetching coal from Newcastle, under royalist control, to deprive King Charles I of revenues and shipping with which to wage war.

Parliament had been assured by Scotland’s coal owners sufficient alternative supplies would be forthcoming to make up the deficit, but this proved incorrect.

Wholesale prices in London doubled to 30–40 shillings per ton in 1643/44 from 15–16 shillings before the ban in 1640.

In response, Parliament and the Lord Mayor and Aldermen of the City of London attempted to fix maximum prices, but this was unsuccessful.

Parliament imposed a forced loan on ship owners and consumers of coal to raise funds for the capture of Newcastle, and the City imposed a levy to raise funds to provide coal for the poor.

“Profiteering continued, and there was seen to be no substitute for north of England coal,” according to historian John Nef.

In June 1644, the Venetian ambassador warned the loss of coal shipments “will be unbearable next winter, as they have felled most of the trees” around London to meet the shortage the previous winter.

In July 1644, the ambassador predicted “there will be riots this winter” unless coal shipments from Newcastle resumed.

The coal shortage was relieved when a Scottish army, encouraged by Parliament and promised income from future coal sales, captured Newcastle in October 1644 and shipments to London resumed.

Sources:

Rise of the British Coal Industry (Volume 2) (Nef, 1932)

Declaration of the Lords and Commons Concerning Coals and Salt (1642)

The English Coasting Trade 1600–1750 (Willan, 1967)

History of the British Coal Industry (Volume 1) (Hatcher, 1993)
Case Study 2: Oil during the Iranian embargo 1951-54

Following nationalisation of the Anglo–Iranian Oil Company in 1951, Britain boycotted crude and fuel sales from Iran, and was later joined by most other western-owned oil companies.

In 1950, Iran had produced 660,000 b/d of crude, amounting to 7% of total production in the Western World, of which 150,000 b/d were exported and 510,000 b/d processed at the Abadan refinery.

Abadan was the world’s largest refinery and supplied one-quarter of all the refined products outside the Western Hemisphere.

Nearly all output from Abadan was exported (489,000 b/d) with most of the rest accounted for by the refinery’s own consumption (20,000 b/d) and only small volumes used domestically (1,000 b/d).

The boycott’s impact on crude oil supplies and prices was limited because Iran’s crude oil exports were relatively small and easily replaced from other sources.

Crude production from other countries in the Middle East (Kuwait, Saudi Arabia and Iraq) had already been increasing rapidly and accelerated further once the boycott was imposed.

Iran’s production declined by -31 million long tons between 1950 and 1952 but that was more than offset by increases from Kuwait (+20 million tons), Saudi Arabia (+15 million) and Iraq (+12 million).

There were also large increases in production in the rest of the world (+69 million tons) mostly from the Caribbean and the United States.

But the impact on refined fuel supplies especially aviation gasoline, kerosene and residual fuel oil east of Suez, was much more severe.

Lost output from Abadan had to be replaced by increased refinery processing in the United States and the Caribbean and to a smaller extent in Western Europe.

Much longer supply routes from western refineries to markets east of Suez strained available tanker capacity.

In response, tanker transport and foreign fuel marketing was coordinated by international oil companies with direction from the U.S. government.

“The Voluntary Agreement Relating to the Supply of Petroleum to Friendly Foreign Nations” was created by the U.S. government to permit the exchange of information and coordination of supplies.

Under the Voluntary Agreement, which conferred antitrust immunity, a Foreign Petroleum Supply Committee involving the international oil companies was organised to coordinate supplies.

During the boycott, the British-owned Anglo–Iranian Oil Company brought legal proceedings against oil buyers breaching the boycott for trafficking in stolen property.

Japanese companies were reported to have purchased Iranian oil at discounts of as much as 50% to the official price.

The boycott was eventually lifted in 1954 when the Anglo–Iranian Oil Company was replaced by an International Consortium, with the agreement of all parties.

Sources:

Oil in the Middle East: Discovery and Development (Longrigg, 1968)

Middle East Oil Crises and Western Europe’s Oil Supplies (Lubell, 1963)

Probable Developments in Iran through 1953 (NIE-75/1) (Central Intelligence Agency, 1953)
Case Study 3: Oil sanctions on Iraq 1990–1996

Following the invasion of Kuwait in 1990, the United Nations imposed a comprehensive economic embargo on Iraq (Security Council Resolution 661) including a prohibition on oil sales. Iraq’s production declined by ~90% from 2.8 million b/d prior to the invasion to 280,000 b/d in 1991 and remained stuck around 500,000 b/d until the oil–for–food program was launched in late 1996. Initially, the loss of output from Iraq (~2.6 million b/d) and occupied Kuwait (~1.4 million b/d) caused real oil prices to more than double between June and September 1990. But following the release of IEA strategic petroleum reserves and the successful expulsion of Iraqi forces from Kuwait, prices had roughly reverted to pre-invasion levels by March 1991. Other Middle East producers proved willing and able to increase their production to offset the losses from Iraq and Kuwait and later from Iraq–only under sanctions. Iraq’s output fell by ~2.3 million b/d between 1989 and 1996 but that was more than offset by output from other producers in the Middle East which increased by +6.6 million b/d over the same period. Total Middle East production increased by +4.3 million b/d between 1989 and 1996 and global output was up by +5.7 million b/d, despite sanctions on Iraq, minimising the impact on prices. As a result, the period of most intense sanctions on Iraq during the early and mid-1990s was characterised by relatively low and stable prices for consumers.

Sources:
Statistical Review of World Energy (BP, 2021)

Case Study 4: Oil sanctions on Iran 2012–2015 and since 2018

The United States has imposed multiple rounds of sanctions on Iran since the revolution of 1979 but the most intense restrictions on oil exports were in force between 2012 and 2015 (when sanctions were also imposed by the European Union) and since 2018 (when the United States terminated its participation in the Joint Comprehensive Plan of Action). During the most intense period of sanctions, Iran’s oil exports were reduced by up to ~1.4 million barrels per day, according to estimates compiled by the U.S. Congressional Research Service. The sanctions–driven reduction in Iranian exports (actual and prospective) likely contributed to the period of very high prices between 2011 and 2014 and more moderately in 2018. Real Brent prices averaged $120 between 2011 and 2014, the highest in the history of the oil industry, and were also comparatively high in 2018 compared with 2015–2017 and 2019. But sanctions on Iran also coincided with the first and second shale drilling booms in the United States which resulted in very rapid growth in U.S. oil production. U.S. oil production increased by an average of +1 million b/d each year between 2012 and 2014 and by an average of almost +1.5 million b/d each year in 2018 and 2019. Rapid growth in U.S. production likely emboldened U.S. policymakers to impose stringent sanctions on Iran as well as blunting their impact on prices.
The entire period spanned by sanctions since 2011 also saw very large increases in output from other producers in the Middle East.

Between 2011 and 2019, production increased in Iraq (+2.0 million b/d), Saudi Arabia (+0.8 million b/d) and the United Arab Emirates (+0.7 million b/d) more than offsetting losses from Iran.

Knowing alternative supplies were available, including from domestic producers, likely encouraged the Obama and Trump administrations to pursue more stringent restrictions on Iran’s oil exports.

Stringent sanctions on Iran contributed to high prices for consumers but the impact was moderated over time by growing output from other Middle East producers and especially the U.S. shale industry.

Sanctions on Iran were an important spur for the shale revolution; conversely, the shale boom and reintegration of Iraq into global markets helps explains the severity of U.S. and international sanctions.

Sources:

Iran sanctions – Report for Congress (U.S. Congressional Research Service, 2022)

Statistical Review of World Energy (BP, 2021)