

## BOX 1 Set up to fail? The collapse of commodity agreements

*OPEC (and presently OPEC+) is the only remaining international producer group that intervenes in the market by managing supply. Previous efforts in the decades following World War II, including agreements for tin, coffee, and natural rubber, have collapsed. Since 1985, OPEC has struggled with the same economic forces that caused the demise of other efforts to control the supply of commodities. The COVID-19 pandemic, which led to an unprecedented collapse in oil demand (and prices), has once again triggered efforts to shore up the oil market. This box puts current pressures on OPEC and its partners into historical context by presenting a brief review of previous international commodity agreements, including earlier OPEC supply cuts. These agreements initially stabilized markets and supported prices but, over the longer term, higher prices led to lower demand and induced investment and innovation that brought new suppliers to the market. These agreements, and their eventual collapse, can push prices far away from their long-term trends over an extended period of time.*

### What has been the history of coordinated efforts to manage commodity supplies?

Several commodity agreements were put in place after World War II, including for wheat, sugar, tin, coffee, and olive oil (Gilbert 1987; Swerling 1968).<sup>1</sup> Such agreements were often negotiated among producing and consuming nations in order to stabilize prices at levels deemed fair to both. A renewed effort took place after the 1970s price boom, with the agreements typically backed by the United Nations and extended to other commodities, including cocoa and natural rubber (Gilbert 1996; Tilton and Guzman 2016). Most of these agreements had legal clauses on how to manage the respective markets, typically through export restrictions or

inventory management. But over the long term, the restrictions triggered supply and demand responses that led to their eventual collapse, including the emergence of competitor products, entry of new producers, and (when prices remained high for many years) a contraction in demand. The last agreements covered tin, coffee, and natural rubber markets.

- *Tin.* The International Tin Agreement (ITA) was first negotiated in 1954 to maintain tin prices within a desired range through the management of buffer stocks. By most accounts, during its three decades of activity, ITA was able to raise and stabilize tin prices. However, in October 1985 ITA became insolvent and had to suspend its stabilizing activities (Chandrasekhar 1989). As the agreement collapsed, tin prices plummeted (in the short term) and numerous mines closed (Mallory 1990). The underlying causes of the collapse were years in the making: higher prices encouraged entry of new producers and a switch to substitutes. Because tin prices were higher and more stable under the Agreement than before, new tin producers who were not ITA members entered the market. Brazil, for example, increased its market share from 1 percent in the 1960s to 10 percent in the 1980s. Furthermore, higher tin prices under the ITA encouraged the use of a substitute product, aluminum, which gained market share by capturing growing demand from beverage can producers (Nappi 1990).
- *Coffee.* In 1962, most coffee-producing countries and almost all developed coffee-consuming countries signed the International Coffee Agreement (ICA) to stabilize world coffee prices through mandatory export quotas (Bates 1997; Bohman, Jarvis, and Barichello 1996). The export quota system succeeded in stabilizing coffee prices despite large fluctuations in global coffee production (Akiyama and Varangis 1990). However, pressures on ICA mounted following the emergence of new coffee supplies. Because key producers could not reach an agreement on how to allocate export quotas, the Coffee

<sup>1</sup> This section draws from Baffes et al. (2015) and World Bank (2016). Attempts to manage supplies and stabilize or boost prices through Commodity Agreements were common before World War II. Hutchinson (1909) and Wickizer (1943) present discussions of the 1902 (unsuccessful) International Coffee Conference that was held in New York to address price declines due to Brazil's oversupply, as well as subsequent supply management agreements led by Brazil.

## BOX 1 Set up to fail? The collapse of commodity agreements (*continued*)

Agreement was suspended in July 1989. Following the suspension, coffee prices fell 40 percent. Perhaps the most important longer-term effect of the Coffee Agreement was the emergence of Vietnam as an important coffee producer. While the ICA was in effect, countries that were not members of the agreement could have access to coffee only when surplus coffee was available, which, in turn, pushed non-members to seek alternative sources of coffee. Two non-ICA members, the USSR and the German Democratic Republic, provided Vietnam with technical and financial assistance to develop its coffee industry (Baffes, Lewin, and Varangis 2005). In 1970, Vietnam produced less than 1 percent of global production. By the early 2000s, it had overtaken Colombia as the world's second-largest coffee producer after Brazil, and now accounts for nearly one-fifth of global coffee production.

- *Natural rubber.* The arrangement for natural rubber, the International Natural Rubber Agreement (INRA), went into effect in 1979 and collapsed during the East Asian Financial Crisis due to currency developments in three key producers: Indonesia, Malaysia, and Thailand. Similar to the ITA, a buffer stock of rubber was used to maintain rubber prices. The buffer stock manager was authorized to buy or sell rubber when its price (indexed to the domestic currencies of the three producers) moved outside a certain band (Khan 1980). When global demand for natural rubber collapsed in the Asian Financial crisis, U.S. dollar-denominated rubber prices declined, which should have triggered accumulation of inventories by the INRA and production cuts. Instead, the currencies of the three main rubber-producing countries devalued sharply during the Asian crisis, raising the local-currency prices of rubber. This resulted in a release of inventories (consistent with INRA rules) and an expansion in production—despite the collapse in global demand. The agreement became unsustainable under these circumstances

and collapsed in December 1999 following the withdrawal of major producers, including Malaysia, Sri Lanka, and Thailand.

### How has OPEC responded to developments in oil markets?

The oil market has been subjected to supply management throughout its history (McNally 2017). In the United States, the oil industry has been regulated from the mid-1930s to the early 1970s through state quotas by the Texas Railroad Commission (TRC) and import controls via the Mandatory Oil Import Quota program of 1959. Under the program, imports of crude oil and refined products were restricted while preferential access was granted to Canada, Mexico, and (later) Venezuela. The quotas depressed the price of oil received by Middle East exporters, which set the stage for the formation of OPEC (Bohi and Russel 1978). In response to these measures, OPEC was founded in 1960 and was largely modelled after TRC. Its stated objective is to “*coordinate and unify petroleum policies among Member Countries, in order to secure fair and stable prices for petroleum producers; an efficient, economic and regular supply of petroleum to consuming nations; and a fair return on capital to those investing in the industry*” (OPEC 2020).<sup>2</sup>

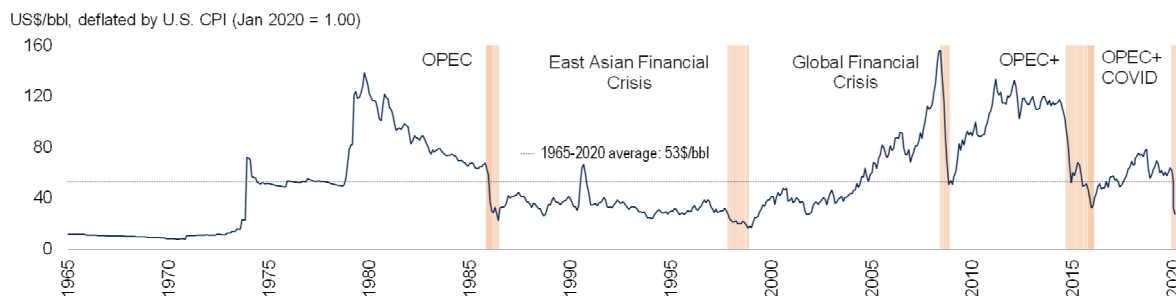
OPEC began to significantly affect the oil market in 1973. Following the Arab embargo on oil exports, it quadrupled prices to more than \$10/bbl (Figure Box 1.1). A large loss of oil supply during the 1979 Iranian revolution caused oil prices to spike further.

<sup>2</sup> OPEC was created at the Baghdad Conference on September 10-14, 1960, by the Islamic Republic of Iran, Iraq, Kuwait, República Bolivariana de Venezuela, and Saudi Arabia. The five founding members were later joined by other countries: Qatar (1961), Indonesia (1962; it suspended its membership from January 2009 to December 2015, before rejoining and suspending it again in 2016), Libya (1962), United Arab Emirates (1967), Algeria (1969), Nigeria (1971), Ecuador (1973; it suspended its membership from December 1992 to October 2007, before rejoining and suspending it again in January 2020), Angola (2007), and Gabon (1975; which terminated its membership in January 1995 but rejoined in July 2016). Equatorial Guinea joined May 2017. Qatar terminated its membership in January 2019. OPEC currently is comprised of 13 member countries.

## BOX 1 Set up to fail? The collapse of commodity agreements (continued)

### FIGURE BOX 1.1 Crude oil price

Since 1985, oil prices have been subjected to three major OPEC shocks (1986, 2014 and 2020) and two financial crises (East Asian Financial Crisis in 1997-98 and the Global Financial Crisis in 2008-09). In 2020, in addition to the failure of OPEC+ to extend their previously agreed supply cuts, the oil market has been subjected to a plunge in demand due to the outbreak of COVID-19. In all these episodes, oil prices collapsed.



Sources: World Bank

Notes: Crude oil price is the average Brent, Dubai, and WTI. Last observation is April 2020 (as of April 17). Shaded areas denote large price declines, which prompted OPEC to engage in significant production cuts.

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OPEC chose to keep prices high during the first half of the 1980s, with Saudi Arabia agreeing to act as the swing producer by absorbing the cuts needed to maintain high prices. In response to elevated oil prices, the energy intensity of generating global economic output (i.e., the energy used per unit of GDP) declined, reversing a long-term trend. This was achieved through energy conservation in consumption; innovation in transport, especially more fuel-efficient vehicles; and substitution, especially in electricity generation by coal and nuclear power (Figure Box 1.2A). High oil prices also induced investment in competing oil supplies, the largest of which came from “non-conventional” sources in Alaska, offshore from the Gulf of Mexico and the North Sea, and from Mexico and Russia.

#### *The 1986 oil price collapse*

By 1985, Saudi Arabia’s oil production had fallen by almost two-thirds (to 3.5 mb/d in 1985 from more than 10 mb/d in 1980), and the country was on a path to being driven out of the market. To regain market share, Saudi Arabia raised production by more than 40 percent within a year, leading to a

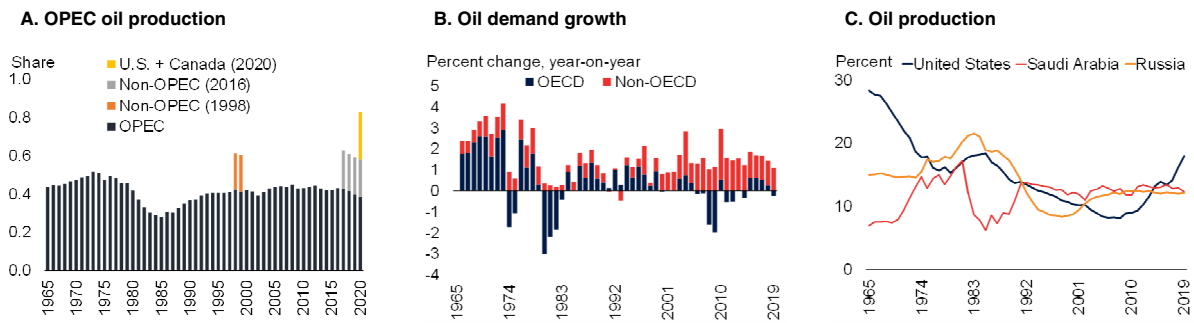
collapse in oil prices to a low of \$8/bbl in April 1986. Following the price plunge, OPEC members agreed to cut production. Over the next decade, oil prices were broadly stable, except for a short-lived spike during the first Gulf War. Demand grew moderately during that decade and OPEC’s production climbed to 29 mb/d in 1997, in line with the share it enjoyed two decades earlier (Figure Box 1.2B).

By 1997, dissension within OPEC, however, re-emerged as some members, notably Nigeria and Venezuela, were producing above their agreed quotas. In addition, considerable surplus oil capacity emerged in ex-USSR (mainly Russia) when these countries transitioned to market economies. When the East Asian Financial Crisis erupted, it lowered demand and depressed oil prices to a low of \$10/bbl in December 1998. In response, OPEC and some non-OPEC countries, including Mexico and Norway, eventually reached an agreement on production cuts in March 1999.

The cuts came at an important juncture: the global economy was recovering from the Asian Financial Crisis, and industrial commodity markets were

**BOX 1 Set up to fail? The collapse of commodity agreements (continued)****FIGURE BOX 1.2 Long-term trends in oil production and consumption**

After a sharp decline in oil production in the early 1980s, Saudi Arabia's share of global output rebounded and has remained relatively stable at around 12 percent during the past three decades. Russia has also seen a stable share of production since the fall of the USSR. However, the U.S. share has increased considerably since 2010, due to the expansion of the shale industry. OPEC's share, on the other hand, which exceeded 50 percent in the early 1970s, thus its ability wield power then, has often sought assistance from non-OPEC oil producers during the past two decades. Oil demand which was driven by OECD countries until the early 2000s, has been increasingly driven by non-OECD countries during the past two decades.



Source: BP Statistical Review, International Energy Agency, and World Bank

A. The Organization of the Petroleum Exporting Countries (OPEC) member states are the following: Algeria, Angola, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, United Arab Emirates and Venezuela. Non-OPEC (1998) includes Norway, Mexico, Oman and Russia. Non-OPEC (2016) includes Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, Sudan and South Sudan. U.S. + Canada (2020) offered to contribute production reductions through market and voluntary contractions.

B. The data represents the year-on-year growth in global oil demand.

C. Oil production as a share of global production by United States, Saudi Arabia and Russia respectively.

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beginning to experience one of the largest demand booms in recent history. The boom was led by emerging market and developing economies (EMDEs), especially China (World Bank 2018). By January 2008, oil prices exceeded \$100/bbl. However, prices collapsed during the Global Financial Crisis (as did the prices of almost all other commodities), and OPEC took large volumes of oil off the market to support prices. They again rose back above the \$100/bbl-mark in 2011 and stayed above that level until mid-2014. In addition to robust demand by EMDEs, prices were supported by geopolitical tensions, including sanctions on Iran, ISIS advances in Iraq, and conflict in Libya. As was the case previously, high oil prices induced investment and innovation, most importantly in U.S. shale oil deposits. Other “non-conventional” oil supplies were also added, including biofuels (Baffes 2013) and Canadian oil sands (Heyes, Leach, and Mason 2018). It was the success of U.S. shale, however, that set the stage for the next confrontation among major oil producers.

### *The 2014 oil price collapse and the emergence of OPEC+*

In response to growing oil supplies and receding geopolitical concerns, inventories rose during the first half of 2014 and oil prices came under pressure. Despite market expectations of an OPEC production cut, the organization opted not to engage in output reductions at its November 2014 meeting, and oil prices plunged to a low of \$30/bbl in January 2016. Although low oil prices slowed non-OPEC output growth, the U.S. shale industry proved resilient owing to cost cuts, efficiency gains, and innovation.

OPEC decided to re-engage in production cuts at its September 2016 meeting by inviting non-OPEC oil producers to participate, most importantly Russia and Mexico. (A similar step was taken in the aftermath of the East Asian Financial Crisis.) The OPEC+ group was formed and agreed to reduce output by a 1.8 mb/d for the first half of 2017 (two-thirds by OPEC members and one-third by other

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producers, notably Russia). The agreement was extended and adjusted a number of times over almost four years. Oil prices rebounded, briefly topping \$75/bbl in 2018. U.S. shale oil production proved resilient at lower prices through further innovation and cost reductions, and total U.S. oil output soared to 17.2 mb/d in 2019, making the U.S. the world's largest oil producer and well on its way to become a net oil exporter.

The global oil market, however, took a sharp turn in March 2020. Oil demand began experiencing one of the sharpest contractions in recent history due to the travel bans imposed to contain the COVID-19 outbreak. Members of the OPEC+ group met on March 6, 2020 but failed to extend or expand the previously agreed cuts. For the first time in history, the global oil market was simultaneously subjected to a policy-driven supply expansion along with an unprecedented collapse in demand. In its April update, IEA projected that oil consumption would decline by 9.3 mb/d in 2020, by far the largest in history—and more than the three-year combined decline following the 1979 oil crisis. By the end of April, oil prices reached historical lows (*Focus and Energy Sections*).

### What has been the impact of supply management measures on commodity markets?

**Long-term forces ultimately prevail.** Historically, internationally-coordinated agreements initially lifted prices.<sup>3</sup> While this benefited participating countries in the short term, it unleashed forces that led to the eventual collapse of these agreements in the longer term:

- *A decline in consumption through efficiency gains and product substitution.* For example, the tripling of oil prices in 1979 induced conservation

and efficiency efforts and reduced oil demand growth by three-quarters (to 1.5 percent in 1980 from nearly 6 percent prior to 1979). As noted above, high tin prices maintained by the ITA accelerated the use of aluminum and other products in the can industry (Baffes, Kabundi, and Nagle 2020).

- *The entry of new lower-cost producers that operate outside the agreement.* As discussed above, high coffee prices along with lack of access to the global coffee market by Eastern European countries and the USSR (who were not ICA members), prompted them to seek new coffee supplies. They provided technical and financial assistance to Vietnam to develop its coffee industry outside ICA. High tin prices brought new tin suppliers into the market, such as Brazil. High oil prices increased coal's competitiveness in electricity generation and stimulated the development of new supplies in Mexico and the North Sea in the early 1980s. More recently, they encouraged production from U.S. shale, Canadian oil sands, and biofuels.<sup>4</sup>

When agreements collapsed, they tended to initially push prices below their long-term trend, thus making prices more volatile. For example, prior to its collapse during the East Asian Financial crisis, INRA was handling a large amount of rubber inventories as means to stabilize natural rubber prices. Following INRA's collapse, these inventories were released into the market, keeping natural rubber prices depressed for almost three years.

<sup>4</sup>Coal's use was further facilitated by the International Energy Agency's (IEA) decision to ban its member countries from building new oil-fired electricity plants. The ban, introduced under the "Principles for IEA Action on Coal" directive, was justified as follows: "The Principles are based on the conclusion that greatly increased coal use is required to meet growing energy demand in the medium and long term, and that this is both desirable and possible in light of the world's abundant coal reserves and the economic advantages which coal already has over oil in many energy markets ... [T]he world is still confronted with the serious risk that within the decade of the 1980's it will not have sufficient oil and other forms of energy available at reasonable prices unless present energy policies are strengthened" (IEA 1979, p. 1 & 4).

<sup>3</sup>See, for example, Akiyama and Varangis (1990) for coffee, Chandrasekhar (1989) for tin, Verico (2013) for natural rubber, and Kaufmann et al. (2004) for oil.



## BOX 1 Set up to fail? The collapse of commodity agreements (*continued*)

### Conclusion

OPEC (and presently OPEC+) is the only remaining international producer group to manage its supply. In March 2020, OPEC+ failed to extend its agreed production curbs at the time of plunging demand and prices due to the COVID-19 pandemic. Oil prices collapsed, with Brent falling to \$23/bbl on March 30, an 18-year low. With estimates that oil demand could drop as much as 10 mb/d in 2020, 23 oil producers (including Russia, Saudi Arabia, and the United States) agreed on April 12 to a historic production cut of 9.7 mb/d. The cut is applicable for May and June, and lower reductions will continue up to early 2022. Following the announcement, global oil price benchmarks initially increased. However, they quickly dropped to historical lows (and some benchmarks, including the West Texas Intermediate, traded in negative territory due to storage constraints) because of uncertainty about demand and whether the agreed cuts will be sufficient.

During this unprecedented period, a case can be made that coordinated efforts to stabilize the oil market are necessary—and may provide some benefit to oil producers and their economies. However, even if successful, it is likely that the latest OPEC+ agreement will ultimately be subjected to the same shortcomings of earlier arrangements, depending on how they influence prices. In the longer term, arrangements to support higher prices will most likely confront the same market forces—substitution and efficiency gains as well the emergence of new suppliers—that led to the breakdown of previous OPEC arrangements and the collapse of earlier international coordinated efforts to control commodity supply.

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