

BOX 1.2 Low Oil Prices in Perspective

The price of oil is expected to remain low for a considerable period of time and could become increasingly volatile. Past episodes of sustained oil price declines were often followed by relatively weak global economic recoveries, with multiple factors affecting final outcomes. The current episode has been predominantly driven by supply factors, and could lead to changes in the structure and functioning of global oil markets.

The oil price plunge since mid-2014 was caused by changes in underlying supply and demand conditions, amplified in the short term by a sharp appreciation of the U.S. dollar, a shift in Organization of the Petroleum Exporting Countries (OPEC) policy, and abating geopolitical risks. Although the supply capacity of relatively high-cost and flexible producers, such as the shale oil industry in the United States, is already adjusting to this low-price environment, most of the underlying factors point to persisting weakness in oil prices over the medium term.

The negative impact of sharply lower prices on exporters has been immediate, and in some cases accentuated by financial market pressures, while the positive impact for importers appears more diffuse and has not yet fully materialized. Evidence from past episodes shows that sharply declining oil prices were generally followed by quite diverse global growth outcomes, pointing to other important forces either mitigating or reinforcing the impact of declining oil prices on activity. As the current decline in oil prices has been largely driven by supply factors and is expected to be persistent, the net effect for the global economy should be positive over the medium term. The distinction between supply and demand factors is of key importance, as the former has much more positive and lasting effects on activity. As a benchmark, a purely supply-driven and permanent 45 percent drop in oil prices could be associated with a 0.7–0.8 percent increase in global gross domestic product (GDP) over the medium term, with the effect peaking after two years.

The growing importance of unconventional oil production and technological innovations has forced OPEC to rethink its policy and role as a swing producer to stabilize prices. This changing landscape could have implica-

tions for the future structure and functioning of oil markets. This box addresses three questions:

- What happened during past episodes of rapid oil price declines?
- How is the current episode different?
- What does the current episode mean for the future structure of oil markets?

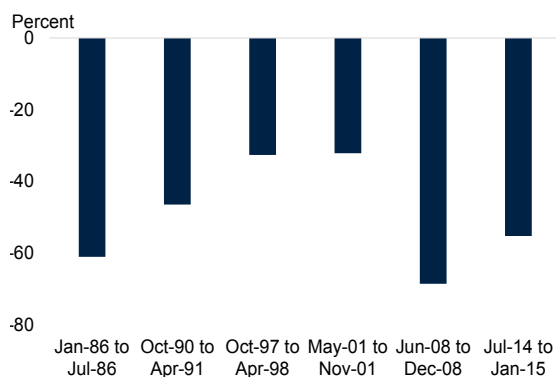
What happened during past episodes of rapid oil price declines?

The drop in oil prices since June 2014 is the third largest among six episodes of significant declines over the past three decades (Figure B1.2.1). Previous episodes were preceded by a period of weakening global growth, which contributed to the observed decline in price

FIGURE B1.2.1 Major oil price declines since 1984

The drop in oil prices in the second half of 2014 is one of six episodes of significant oil price declines over the past three decades.

Magnitude of significant oil price drops



Sources: World Bank.

Note: Nonconsecutive episodes in which the un-weighted average of West Texas Intermediate, Dubai, and Brent oil prices dropped by more than 30 percent over a six-month period.

(Figure B1.2.2). Those episodes were followed by relatively slow recoveries, as benefits for oil importers took time to materialize and were in some cases offset by prevailing headwinds. Although virtually all episodes of significant oil price drops since 1984 were accompanied by monetary policy loosening in the United States and some other major advanced economies, several were accompanied or followed by financial market strains.

The main authors of this box are John Baffes and Marc Stocker.

BOX 1.2 (continued)

1985–86. The 1985–86 oil price slump was the episode most closely associated with changing supply conditions, as OPEC reverted to its production target of 30 million barrels per day despite rising unconventional oil supply from the North Sea and Mexico. Prices dropped 60 percent from January to July 1986, leading to a prolonged period of low real oil prices during the following two decades. Around that period, the U.S. Federal Reserve embarked on a series of interest rate cuts to fend off slowing activity and declining inflation. The lack of improvement in global activity, despite these supportive conditions, was tightly connected to a period of weak growth and significant debt problems in some large developing countries, slow growth in Japan and many European countries, and, at the end of 1987, the impact of a significant downward correction in U.S. and global stock markets.

1990–91. The oil price decline of 1990–91 reversed an earlier spike triggered by the first Gulf War, leaving a limited trace on the global economy. Despite being accompanied by monetary policy loosening, global growth failed to strengthen significantly. Instead, it slowed in 1992 before recovering modestly in 1993, as a recession in Europe ran its course, the recovery in the United States remained hesitant, and Japan entered a period of prolonged stagnation. In advanced countries, a process of debt reduction and balance sheet restructuring; elevated long-term real interest rates; financial and exchange rate stress, especially in Europe; and weak confidence hampered the global upturn. In contrast, growth in many developing countries was resilient, with significant capital inflows helping commodity exporters offset negative terms-of-trade effects from weakening prices.

1998. A sharp decline in oil prices was associated mostly with weakening demand as a result of the 1997 Asian crisis. The continued expansion of OPEC production until mid-1998 might have played a role as well (Fattouh 2007). The global recovery remained tepid for most of 1998, partly as a result of financial market stress in the United States and major emerging markets. The recovery gathered momentum only in 1999–2000 when oil prices started recovering as well, as growth in the United States, the Euro Area, and several large developing economies rebounded.

2001. The disruptions and uncertainty caused by the September 11 terrorist attacks in the United States intensified a growth slowdown already underway as the “dotcom” bubble deflated. Softening global activity and rising uncertainty were the main triggers behind a sharp decline in oil prices around that period. However, aggressive easing in monetary policy by the Federal Reserve and other major central banks propelled a rapid rebound in activity and lower oil prices might have provided some further support.

2008–09. A severe contraction in global demand sent all commodity prices tumbling during the Great Recession of 2008–09. Wide-ranging central bank and government interventions, together with resilient growth in major developing countries, gradually stabilized global activity. However, the recovery remained sluggish, constrained by financial sector restructuring, large asset price losses, and widespread deleveraging pressures in high-income countries. The combined impact of a rapid rebound in commodity prices and declining interest rates supporting capital flows to developing countries created particularly favorable conditions for commodity-exporting developing countries in 2010–12.

How is the current episode different?

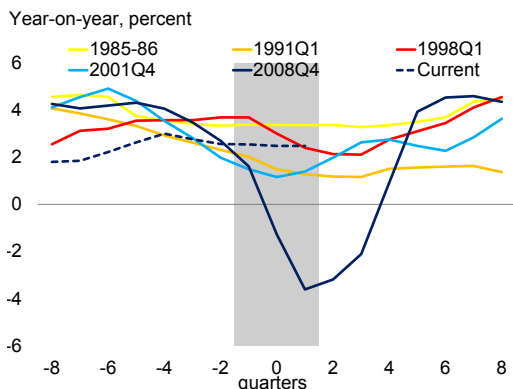
The footprint of sharply lower oil prices since mid-2014 has become increasingly visible, but has not yet translated into stronger global growth. Oil exporters have faced increasing headwinds, diverging monetary policy across major reserve currencies has led to rising exchange rate volatility, and China has continued to slow down. Global growth was subdued at the start of 2015, but is predicted to gain momentum, as the United States emerges from a soft growth patch at the start of 2015, the Euro Area continues to recover, and oil-importing emerging economies gather strength. Unlike during previous episodes of significant oil price declines, the U.S. Federal Reserve is widely expected to start hiking policy rates before the end of the year, while unconventional easing measures in the Euro Area and Japan maintain highly accommodative conditions in other parts of the world.

BOX 1.2 (continued)

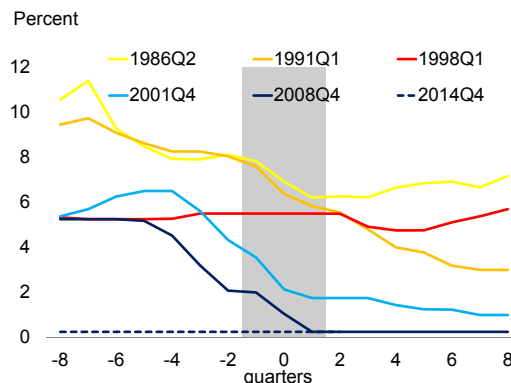
Figure B1.2.2 Global growth and inflation around oil price declines

Past episodes of significant oil price declines were often preceded by global growth slowdowns and followed by relatively weak recoveries in high-income and developing countries, mostly as a result of financial market stress. U.S. monetary policy eased around most of the past episodes.

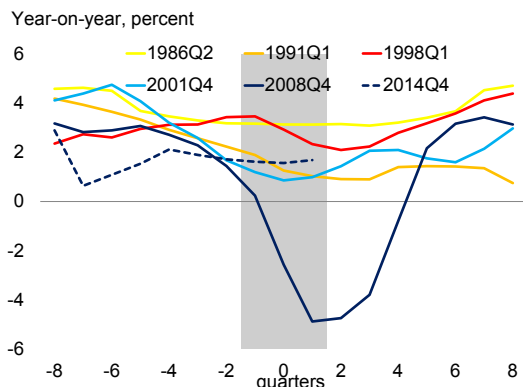
A. Global growth



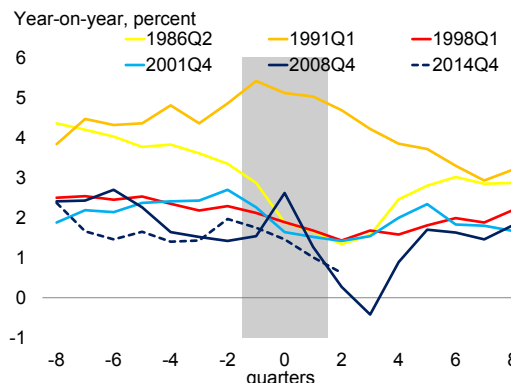
B. U.S. monetary policy interest rates



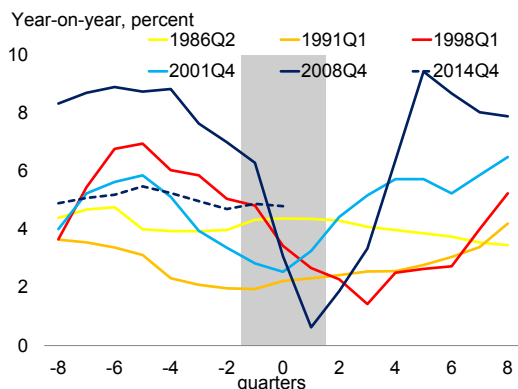
C. High-income countries' growth



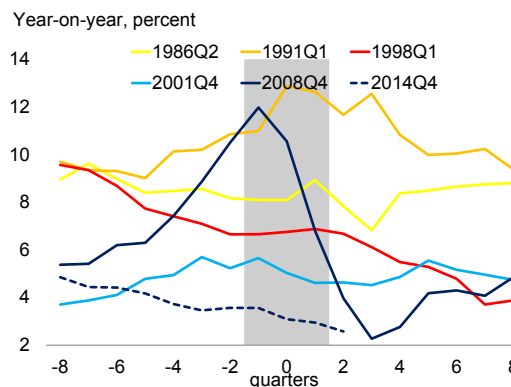
D. High-income countries' inflation



E. Developing countries' growth



F. Developing countries' inflation



Sources: World Bank and Federal Reserve Bank of St. Louis.

Note: Shaded areas indicate the period of the sharp oil price drop.

A. Global growth computed on the basis of a weighted average (using 2010 US\$ GDP weights) of countries for which quarterly national accounts data are available. Time "0" is the quarter of the trough of a significant oil price decline episode (30 percent drop over a seven-month period, which is the shaded region); -8 corresponds to 8 quarters before the trough and 8 corresponds to 8 quarters after the trough.

B. Effective U.S. nominal federal funds rate.

D. Consumer price index (CPI) inflation aggregated across countries using consumption weights.

F. Median CPI inflation across developing countries.

BOX 1.2 (continued)

Regarding the drivers of the recent crash in oil prices, a comparison with previous episodes points to a predominant role of supply factors, with important similarities to the 1985–86 episode. Both episodes followed periods of high oil prices and a rapid expansion of non-OPEC oil supplies—Alaska, North Sea, and Mexico in the former, and U.S. shale oil, Canadian oil sands, and biofuels in the latter. And in both crashes OPEC changed its policy objective, from price targeting to market share.

In contrast, other sharp declines were largely precipitated by slowing global demand or, in the case of the 1990–91 crash, associated with the first Gulf War. The 2008–09 collapse exhibited some unique characteristics. Prices during that period were highly correlated with equity and exchange rates, while co-movements across most commodity prices were twice as high compared with the historical average (and other crashes), highlighting the predominant role of deteriorating demand conditions.

The dominant role of supply factors behind the 2014–15 drop bodes well for its eventual impact on global activity. Estimates suggest that a purely supply-driven decline of 45 percent in oil prices could be associated with a 0.7–0.8 percent increase in global GDP over the medium term (Baffes et al. 2015).

However, the ultimate impact on global activity remains uncertain. First, with a confluence of cyclical and structural forces at work in the global economy, the expected gains for growth from the drop in oil prices could be lower than suggested by the standard model simulations. These mitigating factors include current financial vulnerabilities, high indebtedness, limited room for monetary policy in major economies to be loosened further, elevated unemployment, and slowing long-term growth prospects in major oil-importing economies. These factors may encourage precautionary savings by households and corporations, particularly in countries still facing important crisis legacies and weak balance sheets.

Second, the precise contributions of the supply and demand factors behind the recent oil price crash remain uncertain and subject to debate. According to Baffes et al. (2015), supply shocks have accounted for roughly twice as much as demand shocks since mid-2014, particularly after OPEC's decision to forgo price targeting

in November.¹ Analysis by the International Monetary Fund (IMF 2015b) points to weak demand playing a more significant role in the initial phase of the decline (July to mid-October 2014), while supply factors dominated in the subsequent period. Other studies, such as Hamilton (2014), Baumeister and Kilian (2015), and Badel and McGillicuddy (2015), point to varying effects of weakening global growth on oil prices in 2014–15.²

Some of these empirical investigations focus on the co-movement of oil prices with equity and other financial and commodity prices. The current episode has been associated with relatively strong performance of U.S. and global equity markets, which has been interpreted as evidence of a positive supply shock, reflecting expectations of more supportive conditions for activity ahead (Figure B1.2.3). Another important feature of the recent period of sharply declining oil prices has been the significant and broad-based appreciation of the U.S. dollar, in contrast with the 1985–86 episode. A strong dollar might have accentuated the decline in oil prices, contributing to lower demand in importing countries with depreciating currencies while encouraging supply from producers.

What does the current episode mean for the future structure of oil markets?

Over the medium term, oil prices are projected to recover gradually from their current lows, but will remain below recent peaks and could witness more volatility. The pace of the recovery in prices will largely depend on the speed at which supply will adjust to current market conditions. Given that OPEC, for now, appears to have relinquished its role as swing producer, U.S. shale oil producers, with their relatively short production cycles and low sunk costs, may see the greatest

¹Looking at high-frequency co-movements between oil and global equity markets since mid-2014, Baffes et al. (2015) find that supply factors were the dominant factor. Adverse demand shocks (that reduce oil and equity prices) peaked around end-2014, whereas favorable supply shocks kept mounting until February 2015.

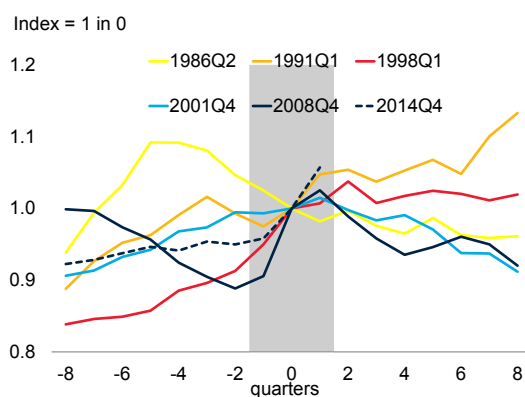
²Hamilton (2014) finds that two-fifths of the oil price decline in the second half of 2014 reflected new indications of weakness in the global economy, while Baumeister and Kilian (2015) report that shocks to the demand for oil inventories contributed to the recent oil price drop as well. Badel and McGillicuddy (2015) argue that the decline in oil prices during the second half of 2014 was largely driven by negative oil-specific demand shocks—in anticipation of expected abundant oil supply.

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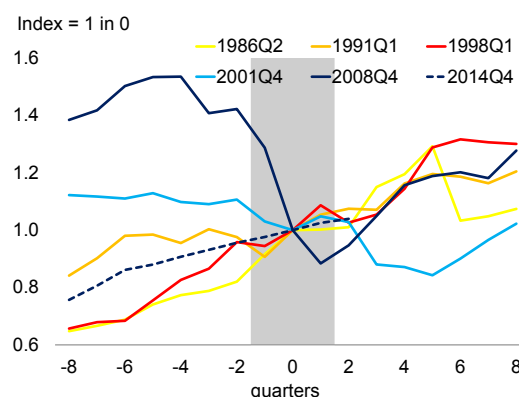
Figure B1.2.3 Financial market developments around oil price declines

The current episode has been associated with a significant appreciation of the U.S. dollar and relatively strong performance of U.S. and global equity markets.

A. U.S. dollar



B. U.S. stock prices



Sources: World Bank and Federal Reserve Bank of St. Louis.

A. Nominal effective exchange rate of the U.S. dollar against a trade-weighted basket of major currencies. An increase denotes a nominal effective appreciation. Time "0" is the quarter of the trough of a significant oil price decline episode (30 percent drop over a seven-month period, which is the shaded region); -8 corresponds to 8 quarters before the trough and 8 corresponds to 8 quarters after the trough.

B. U.S. equity market index in U.S. dollars.

adjustments in the short term, but could rapidly restore capacity as prices increase. This response could contribute to more volatility in prices, around a lower equilibrium level.

The increasing importance of unconventional oil production as an existing and prospective source of additional oil (Figure B1.2.4) has led to intensive debates about the long-term role of OPEC as a cartel.

Looking back, efforts to manage world commodity markets to achieve price objectives are not unique to the oil market. Several commodity agreements, often negotiated among producing and consuming nations to stabilize prices, were put in place after World War II, including wheat, sugar, tin, coffee, and olive oil (Swirling 1968). A renewed effort took place after the price boom in the 1970s, with the agreements typically backed by the United Nations and extended to other commodities, including cocoa and natural rubber (Gilbert 1996). These agreements had legal clauses regarding the tools to manage the corresponding markets, which were export restrictions and inventory management. But over the long term, the price and

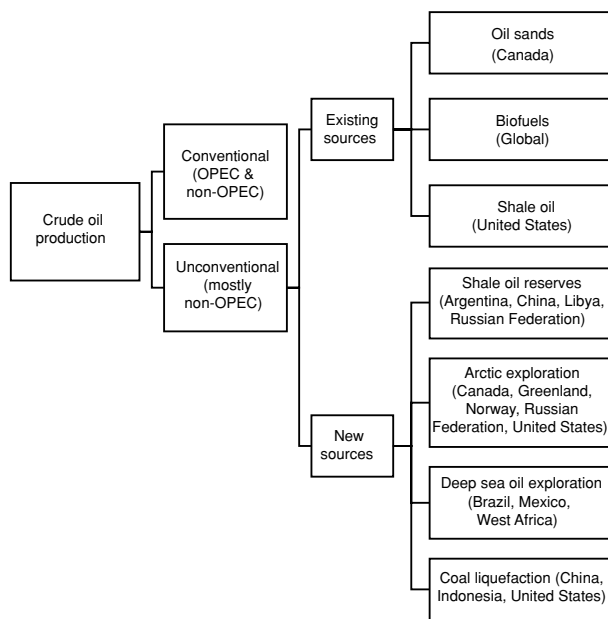
trade restrictions imposed by some of the agreements on global market conditions either encouraged the emergence of competitor products (e.g., for tin) or the entry of new producers (e.g., for coffee).³ As a result, all the agreements (except crude oil) eventually collapsed.

A key difference between OPEC, the only surviving commodity organization seeking to actively manage markets, and the earlier commodity agreements is that OPEC does not have a legal clause on how to intervene when market conditions warrant. Therefore, OPEC can respond flexibly to changing circumstances.

³First negotiated in 1954, the International Tin Agreement (ITA) collapsed in 1985. Higher tin prices under the ITA encouraged new tin producers to enter the market and the development of a substitute product, aluminum, which gained market share by capturing the growing demand from the beverage can producers. In 1962, coffee-producing countries accounting for 90 percent of global coffee output and almost all developed coffee-consuming countries signed the International Coffee Agreement (ICA) with the objective of stabilizing world coffee prices through mandatory export quotas. Elevated coffee prices encouraged the emergence of new producers outside ICA, such as Vietnam, which by the early 2000s had overtaken Colombia as the world's second largest coffee producer after Brazil. The cartel was dismantled in 1989 (Baffes, Lewin, and Varangis 2005).

BOX 1.2 (continued)**Figure B1.2.4 The new oil map**

OPEC's share of global oil supply has fallen, partly as a result of rising oil production from unconventional sources in the United States and Canada, as well as biofuel production. These developments have redefined the global oil map with important medium-term implications.



Source: World Bank.

OPEC began playing an important role following its decision to impose an embargo on oil exports in 1973, and was also instrumental in tripling oil prices in 1978–79

(OPEC 2015). Efficiency gains and new oil suppliers, along with disagreements among various OPEC members (especially during the Iran-Iraq War and the first Gulf War), reduced the cartel's role for the next two decades. OPEC intervened actively again following the Asian financial crisis—when oil prices dropped to less than \$10/barrel—by setting targets within price bands. OPEC's decision to forgo price targeting and favor market share in November 2014 marked a new step for the cartel.

Conclusion

The plunge in the price of oil in 2014–15 has left a large footprint on the global economy and oil markets, but has not yet translated into stronger global growth. Evidence from past episodes shows that sharply declining oil prices were generally followed by quite diverse global growth outcomes, pointing to other important forces either mitigating or reinforcing the impact of declining oil prices on activity. Supply factors appear to have played a dominant role in the recent plunge in oil prices, which bodes well for its eventual impact on the global economy. However, uncertainty remains and positive effects could be mitigated by crisis legacies or weakening long-term growth prospects in some oil-importing countries. Looking ahead, the growing importance of unconventional oil production and technological innovations could lead to lower oil prices with substantial volatility around a new equilibrium level.

ing sector confidence softened in the first quarter of 2015 and industrial production growth slowed as terms of trade deteriorated or domestic production struggled with energy bottlenecks (Brazil, Nigeria, South Africa). Policy uncertainty has weighed on investment in some countries (Bangladesh, Turkey, Nigeria). Elsewhere, fiscal restraint, tight monetary policy, or macroprudential measures are contributing to the slowdown in activity (East Asia).

Growth forecasts have been revised downward for 2015 (Figure 1.15). Developing country growth is now expected to slow to 4.4 percent in 2015, before recovering somewhat by 2017, to 5.4 percent.

Commodity-exporting countries, in particular, are struggling to adjust to low commodity prices. They

account for about one-third of developing country GDP. Their slowdowns dampen activity in other countries with close trade, finance, and remittance links. As a result, the downward revisions in the forecast are concentrated in the regions with large commodity exporters (the eastern part of Europe and Central Asia, Latin America and the Caribbean, and Sub-Saharan Africa). Commodity-importing countries face other challenges. Turkey, South Africa, and other countries that rely heavily on foreign capital inflows could be negatively affected by rising borrowing costs as the U.S. Federal Reserve raises policy rates. In addition, a structural growth slowdown has been underway in many developing countries as the growth in working age populations, productivity, and investment has eased. Partly as a