

It is unclear whether the level of oil price matters more than the price variability itself when understanding and estimating the economic impacts of oil price fluctuations. This issue was the focus of this year's SITE Energy Day, a half-day conference organized by the Stockholm Institute of Transition Economics (SITE) on November 5, 2015. This policy brief summarizes the discussions on the effects of changes in the oil price level and its variability on macroeconomic fundamentals, international trade, the opportunities to establish a "green" economy, as well as on the strategy of participants of oil-related markets.

#### The Effects on the Budget of Oil Consumers and Producers

From a general point of view, the oil price level affects both consumers and suppliers. An oil-consuming country is generally better off with decreasing oil prices, since oil is often a crucial input good in production. As mentioned by Torbjörn Becker, Director of SITE, the effects on oil exporters are less clear. A sharp fall in the oil-price level implies declining oil revenues and could deteriorate the budget of oil-producing economies. Figure 2 illustrates the relationship between the oil price and the GDP of a large oil exporting country, namely Russia. As can be seen, there is a positive correlation, although not a perfect one.

Taking the firms' perspective, the level of the oil price also affects oil-related firms such as retailers or financial actors. Matteo Manera, Professor at the University of Milano-Bicocca and Fondazione Eni Enrico Mattei, focused on the relationship between the international price of oil and local retail fuel prices. He discussed the tendency of an asymmetric price transmission between these two sectors, with an immediate increase of retailer prices in the case of international oil-price increases, but with a much smoother response to oil price decreases (see Bastianin, Galeotti and Manera (2014) for an in-depth analysis on this topic).

#### The Effects on International Trade

Natalya Volchkova, Policy Director of CEFIR (Moscow), stressed that any changes in the oil price level affect the economy not only in a nominal way, but also in a structural manner. A change impacts the cost of production in all industries and sectors, as well as the disposable income in the country, but it also affects the exchange rates and the overall uncertainty. This, in turn, affects exports, imports, current accounts, the comparative advantage of countries, as well as the global value chains. In an economy where labor, capital and energy are inputs to production, and capital/labor and energy are complements, a sudden oil price increase is likely to be compensated by labor adjustments. Thus, there might be a structural effect on employment, affecting the entire economy.

Furthermore, there are also large exchange rate devaluations associated with a drop in oil prices, creating import substitution and export expansion for oil-exporting countries like Russia. Lastly, Volchkova concluded that the negative effects of oil price shocks on trade balances could be dealt with by suitable policy measures diversifying the commodity composition of trade as well as the geographical composition of trade partners.

The case of Russia is again an interesting one to consider. As illustrated in Figure 3, both exports and imports in Russia have decreased since July 2014 – after the sharp fall in oil price occurred.

In addition, there are also direct externalities of oil-price changes on the trade between Russia and Commonwealth of Independent States (CIS) countries. Becker mentioned that the CIS countries' share of trade with Russia has decreased by 40% between June 2014 and 2015, which is a larger fall than the sanctions-related fall of 34%. Many of the CIS countries have strong export relationships and financial ties with Russia, which together make up a large share of their respective GDP. For instance, remittances from workers in Russia to countries in the CIS-region have fallen substantially during the last year. This, Becker concludes, shows that countries outside the energy-exporting sector fare badly when oil prices fall due to their trade and investment links with oil exporters. This conclusion can also be seen in Table A below, where the net energy-importing countries show real GDP decreases in 2014 and 2015.

#### The Opportunity to Engage in Energy Reform

A change of the oil-price level impacts the fueling countries' economies as well as their trade partners, but it also affects the trade-off between "dirty" and "green" energies. According to Luca De Lorenzo, Senior Researcher at the Stockholm Environment Institute (SEI), cheaper oil shapes opportunities for a transition to a new climate economy and for reforming energy markets. Based on Klevnäs, Stern and Frejova (2015), De Lorenzo mentioned that there is an opportunity to engage in reforms of the energy market while oil prices are low. He pointed out that low oil prices might be an opportunity to "correct the course": When the price of oil is low, the time for energy transition is right. De Lorenzo suggested removing oil subsidies and introducing a price of carbon as a short-term measure to make this transition happen. Moving away from fossil fuels will also be a way to avoid the usual swings in commodity prices.

#### From Price Variability to Price Uncertainty

So far, we have discussed how economies are affected by a change in the oil-price level. However, some might argue that it is rather the oil-price variability and the uncertain forecast possibilities of the oil price that hurt the economy.

The oil price is indeed difficult to predict. As an example, Becker illustrated the growing uncertainty of future oil prices with the large width of the confidence intervals of the IMF's World GDP growth projections in their latest World Economic Outlook (IMF, 2015). The price per barrel fluctuates within an interval of \$20 per barrel to up to \$140 per barrel in the 95% confidence interval (see Figure 4, lower panel). Becker argued that there is a lot of uncertainty regarding the supply side in the future, and related this back to the large volatility observed in the oil price during the past months. The difficulty of predicting the oil price poses major challenges for policy makers around the world in making their forecasts.

As pointed out by Becker, a country will, irrespective of its stand as an oil importer or an oil exporter, be affected by the uncertainty in oil prices due to its trade and capital-flow links with other oil-exporting countries. Moreover, international trade is affected by the uncertainty and volatility of oil prices in terms of increased risks facing both importers and exporters. Volchkova mentioned that the competitive advantages of both net-oil exporting and net-oil importing countries could fall quite substantially as a result of oil-price fluctuations (Aziz, 2010).

Financial institutions are perhaps best equipped to deal with oil-price uncertainties and volatility. This point was discussed by Hubert Roslund, Senior Strategic Risk Manager at Nordea. Roslund proposed an “analytical toolbox” that would equip financial institutions with the tools needed in order to deal with external risks connected to fluctuations in the oil price. This toolbox would consist of two main approaches, where the first would involve reduction of the portfolio in relative terms by selling off the exposure to oil. The second, and more ambitious approach, would be to have long-term plans and to start preparing back-up plans as well as amortizations and repayment plans even if the organization is satisfied with the prevailing risk levels.

#### Conclusion

A change in the oil-price level as well as its variability poses many challenges to a diverse range of actors in the global market: Governments and institutions meet increasing difficulties in predicting the oil price and reacting to its changes; financial institutions have put forth specific efforts to hedge themselves from the risks associated with variability in oil-prices; and globalization and international trade fares badly in times of large oil-price variability. While researchers have put much effort into refining the techniques for predicting the oil-price level, challenges to forecast it accurately still remains.

The overall effect of changes and uncertainties in oil prices on the economy as a whole depends on many parameters, including a country’s position in the oil market, its degree of competitiveness, the very composition of its competitive advantage, as well as the specific nature of the oil price shock.

Importantly, the effects of severe oil price changes do not have to be only negative. Low oil price opens up for the opportunity to “correct course” through investments in greener technology and energy systems. In this way, economies might be able to hedge themselves from the harm that oil price fluctuations make to their markets and economies — irrespective of their stand as oil consumers or oil importers — and simultaneously take steps towards building a new climate economy.