# Clue to the oil demand outlook

YANAGISAWA Akira | The Energy Data and Modelling Center, The Institute of Energy Economics, Japan

People want to know the future. Knowing the future is useful for allowing people to act strategically and avoiding risks. As a result, there are a number of projections. The importance of the short-term outlook for oil cannot be overemphasised, even from the perspective of supporting the current economy and society. Representative examples include the International Energy Agency (IEA) "Oil Market Report", the Organization of the Petroleum Exporting Countries (OPEC) "Monthly Oil Market Report" and the U.S. Energy Information Administration "Short-Term Energy Outlook".

In the markets, not only projections, but also the degree of hit or miss and changes in them are taken into account. A well-known example is the employment statistics in the United States. Normally, the number of employees and the unemployment rate are important indicators of economic situation. However, rather than the statistical values themselves, it is the deviation from prior projections that carries greater significance, especially in the short term.

Perhaps for this reason, the IEA "Oil Market Report" for the "most important" Table 1, which shows global oil supply and demand, the changes from the previous month's issue are published as Table 1a (in the OPEC "Monthly Oil Market Report", this corresponds to Table 11-2 for Table 11-1). It is not uncommon for such revisions to jolt oil prices. In recent times—except for the March 2022 issue, which was affected by the global upheaval caused by Russia's invasion of Ukraine—there has not been an excessively large amount of projection revisions. However, the global demand cut of only 0.1 Mb/d in the September 2024 issue of the OPEC "Monthly Oil Market Report" contributed to the $2.65/bbl plunge in Brent crude oil prices that day. Revisions to projection that exceed or disappoint expectations become news in the markets.
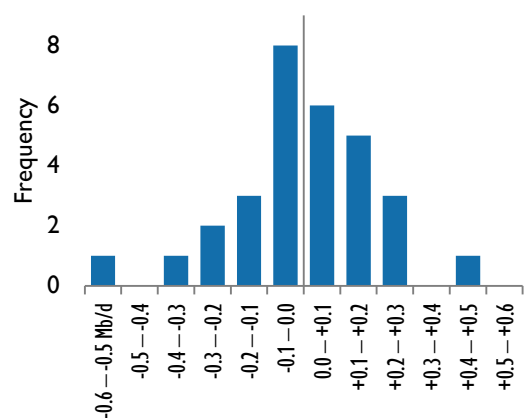
Figure 1 | Revisions of global oil demand projection
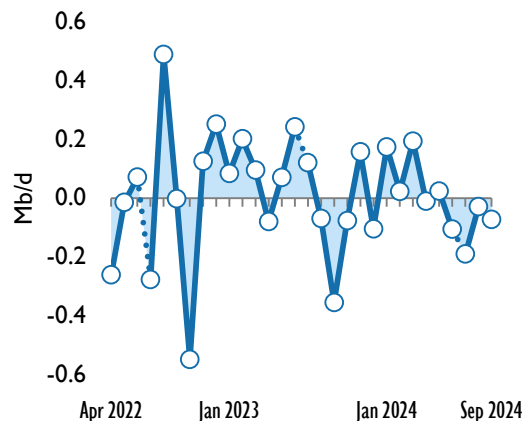
Note: January-June for the current year projection and July-December for the following year projection
Source: Compiled from IEA "Oil Market Report"

If we approach the projection with foresight, we will be comfortable. Here, we take a look at the IEA "Oil Market Report" to assess the current trends. No significant bias in the mean or distribution of the revision from the previous month projection[1] has been observed since the April 2022 issue, in which the first wave of the impact of the invasion of Ukraine was examined. Note that the assessment of the standard deviation of 0.2 Mb/d may vary from person to person.

Figure 2 | Distribution of revisions to global oil demand projection

Notes: April 2022 to September 2024. Others are the same as Figure 1.
Source: Compiled from IEA "Oil Market Report"

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[1] January-June for the current year projection and July-December for the following year projection

In other words, in the world as a whole, there are few features that can be used as clues to foresight. However, when we delve a little deeper, something emerges.

The first is trends by country and region. The Organisation for Economic Co-operation and Development (OECD) member countries have a small variance in the amount of projection revisions despite the large scale of demand, and their contribution (the sum of the variance and the related covariance[2]) to the revisions of global projection is also small. In contrast, the variance in non-OECD countries, especially China, is large compared to demand. This may be due to the dynamism of the economy and society and the accuracy of statistics. However, the contribution of China shrinks considerably from the variance. This is because China's revisions are negatively correlated with all other regions—when China is revised upward, the other regions tend to revise downward as if there were a loose aggregate constraint on the entire world.

The second is trends by product. Sales of new electric vehicles (EVs) have been slower than expected, except for China. This has led automakers to reassess their strategies, and, consequently, to expectations of higher gasoline demand. However, the revision of projection for motor gasoline has not resulted in a disproportionately large revision in overall demand given the scale of demand. Is it because the IEA's EV outlook is excellent, or is it because the impact of new car sales on energy consumption is only slowly becoming apparent? On the other hand, although the demand scale for gas/diesel oil is similar to that for gasoline, the revision is large. This is assumed to be attributable to the industry and buildings/agriculture sectors, although consumption is less than in the transport sector. This is because fluctuations in gas/diesel oil consumption due to changes in production in the manufacturing industry—which is strongly influenced by China—and temperature are large in the short term. The impact of EVs, which are mostly passenger cars, is less than that of gasoline because diesel-fuelled vehicles are mainly heavy-duty vehicles.

If we face oil demand projection with information on China, industrial production and temperature in advance, we may see a slightly different picture.

Figure 3 | Variance and contribution of revisions to the global oil demand outlook and demand scale
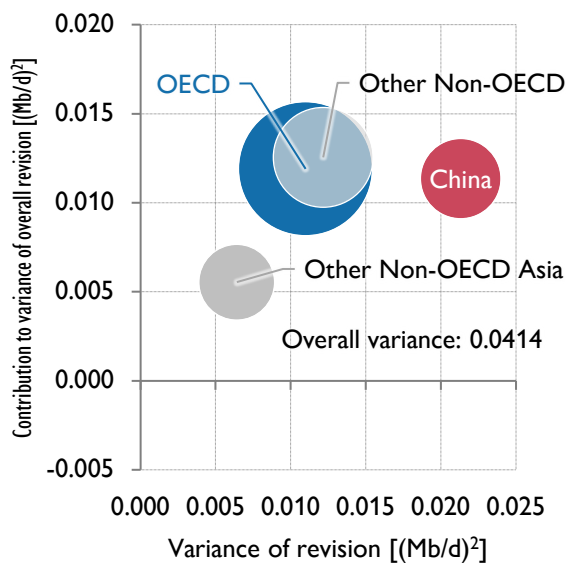
By country/region   By product
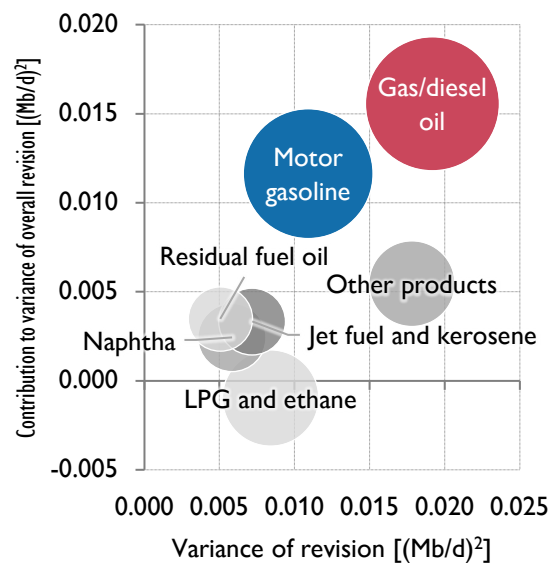
Notes: The contribution is the sum of the variance and the related covariance. The size of the circles is the scale of demand. Others are the same as Figure 2.
Source: Compiled from IEA "Oil Market Report"

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[2] Since $V\{\sum_i X_i\} = \sum_i V\{X_i\} + \sum_i \sum_{j \neq i} 2\, Cov\{X_i, X_j\}$, the contribution of X_i is defined as $V\{X_i\} + \sum_{j \neq i} Cov\{X_i, X_j\}$.