Section 2 Economic effects of uncertainty

Uncertainty generates far-reaching effects on the real economy and financial markets. Below, those effects will be quantitatively analyzed.

Table I-3-2-1 shows the correlation coefficients between the EPU and VIX Indexes and major economic and financial variables. In consideration of the structural escalation of policy uncertainty, the coefficients were calculated for the period from 2005 to 2014 and for the period from 2015 to 2024 separately. Although it should be kept in mind that the table shows time-sequential correlations, rather than causal relations, some trends can be identified.

In both periods, the EPU Index showed negative correlations with industrial production, global trade volume, and stock prices, which means that escalated policy uncertainty is associated with an economic downturn. The correlations with production and trade volume were stronger in 2015-2024, indicating that the effects of uncertainty have grown in recent years. On the other hand, although the correlations between uncertainty over trade policy and production, trade and stock prices were weak in both periods, the correlation coefficients in 2015-2024 were negative. The Trade Policy Uncertainty Index tends to spike up frequently compared with the overall EPU Index, so its correlations with economic variables appear to be weak.

In a recession phase, money flows show increased risk aversion. Until the middle of the 2010s, U.S. government bonds and other assets denominated in the U.S. dollar and the yen, regarded as safe haven currencies, had a strong tendency to attract risk-averse funds. However, in 2015-2024, gold and other precious metals were favored over government bonds and dollar-denominated assets as investment vehicles.

As for the VIX Index, the correlations with variables such as the economic cycle, stock prices and interest rates were negative, as in the case of the EPU Index. The correlations were stronger in 2005-2014 than in 2015-2024. The finding suggests that destinations of money flows due to risk aversion are shifting from assets denominated in the dollar and in the yen to precious metals, just as indicated by the EPU Index's correlations with the variables.

Table I-3-2-1. Correlation coefficients between various uncertainty indexes and economic and financial variables

2005-2014

	World industrial production	World trade	U.S. stock price	U.S. long-term interest rate	U.S. dollar	Japanese yen	Energy price index	Precious metals price index
EPU Index	-0.24	-0.24	-0.18	-0.79	0.32	0.31	-0.20	-0.18
U.S.	-0.20	-0.20	-0.20	-0.60	0.21	0.32	-0.11	-0.08
Trade policy	0.14	0.11	0.00	-0.18	-0.11	0.17	0.18	0.10
VIX	-0.56	-0.49	-0.70	-0.17	0.36	0.74	-0.26	0.00

2015-2024

			World industrial production	World trade	U.S. stock prices	U.S. long-term interest rate	U.S. dollar	Japanese yen	Energy price index	Precious metals price index
EPU Index			-0.40	-0.32	-0.13	0.01	-0.04	0.01	0.03	0.51
	U.S.		-0.51	-0.42	-0.17	-0.43	-0.01	0.19	-0.12	0.45
		Trade policy	-0.13	-0.10	-0.01	0.01	-0.04	0.31	-0.07	0.26
VIX			-0.36	-0.30	-0.34	-0.30	0.19	-0.03	-0.04	0.17

Note: This table shows the calculation results of the correlation coefficients between the two variables at each row-column combination by using monthly data for the given period. For the variables other than various uncertainty indexes and U.S. long-term interest rates, the correlation coefficients are calculated by using the rate of year-on-year changes in the variables. In this table, darker red indicates a stronger positive correlation, while darker blue indicates a stronger negative correlation. The data on world industrial production and world trade is sourced from the Netherlands Bureau for Economic Policy Analysis. The indexes for energy and precious metal prices are based on World Bank data. U.S. stock prices are based on the S&P 500 stock index. The data on U.S. dollar and Japanese yen is based on the nominal effective exchange rates, which represents the comprehensive value against multiple currencies.

Sources: *World Trade Monitor* (CPB Netherlands Bureau for Economic Policy Analysis), *Commodity Price Data (The Pink Sheet)* (World Bank), Economic Policy Uncertainty, FRED, CEIC.

In light of the correlations between the uncertainty indexes and economic and financial variables, it is presumed that the escalated uncertainty indicated by a steep rise in the EPU Index since late 2024 (Figure I-3-1-1 above) is putting downward pressure on the global economy regardless of whether tariff policy change is actually implemented.

However, it is difficult to capture the quantitative impact of uncertainty by merely looking at concurrent correlations. Therefore, we conducted estimation under a time-sequential analysis approach while controlling for other factors that affect economic and financial variables and while taking into consideration the possibility that the effects of uncertainty may remain for a while, the results of which are shown in Figure I-3-2-2. In this analysis, we calculated the effects of the acute escalation of uncertainty indicated by the steep rise in the EPU Index in January 2025 on variables such as the global economy, global trade, U.S. long-term interest rates, and U.S. stock prices, which showed some degree of correlation with the EPU Index in the abovementioned analysis.[19] For the variable that represents the global economy, the combined real GDP of the G20 countries was used as an approximate substitute.[20]

According to the estimation, the escalation of uncertainty in January 2025 will push down real global GDP by a maximum of 1% one year later compared with the case that assumes that uncertainty did not grow, with the effects gradually fading later. The average estimated size of the negative impact in the first year, at around 0.7%, is substantial given that the global economy was projected to grow 3.2%

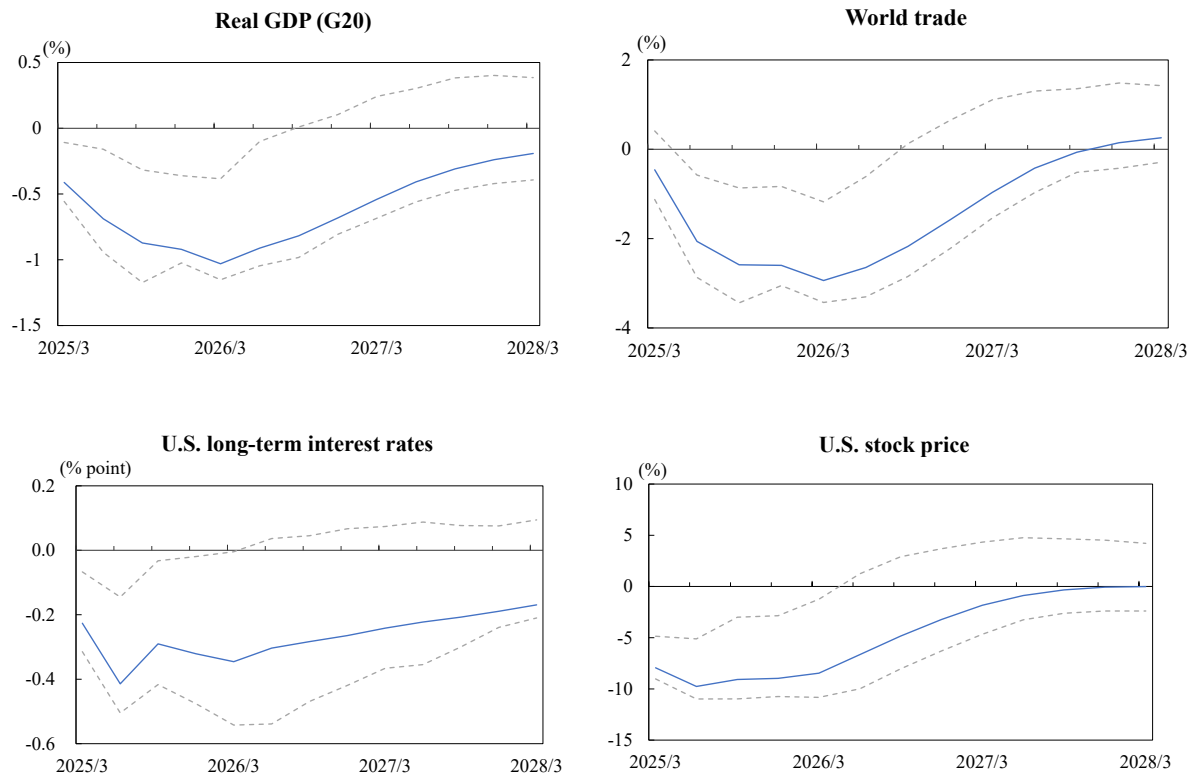
[19] For the detailed calculation method, see Notes.

[20] In Table I-3-2-1, indicated earlier, global industrial production was used because the data is on a monthly basis. However, in Figure I-3-2-2, real GDP, which can capture production in non-manufacturing industries, was used because the data is on a quarterly basis.

before the inauguration of the Trump administration (according to the WEO published by the IMF in January 2025). Likewise, global trade, U.S. long-term interest rates, and U.S. stock prices are expected to be pushed down considerably by the effects of uncertainty. Global trade volume one year later is estimated to be reduced by a maximum 3%, while U.S. long-term interest rates are estimated to be pushed down by 0.4 point, and U.S. stock prices are estimated to be dragged down by around 10% in the first year. Afterwards, downward pressures on those variables are expected to continue for several years.

The above findings are the results of nothing more than mechanical estimation. In addition, the data used for the estimation do not include those for the period since February 2025, when uncertainty has escalated more acutely. On the other hand, if a positive shock that may reduce uncertainty occurs in the future, the negative effects will be mitigated, so room for some margin of deviation must be allowed for. Even so, the acute escalation of uncertainty in January 2025 could create a powerful headwind against the global economy in the immediate future.

Figure I-3-2-2. Impact of the increase in uncertainty at the beginning of 2025



Note: This figure shows the impact of an uncertainty shock implied by the sharp rise in the EPU Index in January 2025 (the deviation from the case where any uncertainty shock would not occur), based on a vector autoregression (VAR) model comprising five variables: EPU Index, real GDP of G20 countries (values aggregated by the OECD), global trade volume, U.S. long-term interest rates, and U.S. stock prices (S&P 500). The broken lines represent the 90% confidence intervals using the bootstrap method.

The estimation period for the VAR model spans from the first quarter of 2000 to the fourth quarter of 2024, using four lags. As an exogenous variable, a dummy variable for the COVID-19 pandemic is included, taking the value of one (1) in the second quarter of 2020 (zero in other periods). All variables are in logarithmic form, except for long-term interest rates and dummy variables.

Sources: Economic Policy Uncertainty, OECD, CPB Netherlands Bureau for Economic Policy Analysis, CEIC.