

Appendix: Global reflation?

To get a sense of the underlying forces pushing up inflation, this appendix compares actual headline inflation with inflation rates that would be predicted using four factors. These four factors are: (i) energy prices (log year-on-year change in the global energy price index divided by the CPI or PCE index, converted into local currency); (ii) the 12-month moving average of industrial production gap;¹ (iii) inflation lagged by 12 months (often used as a proxy for expectations); and (iv) the (log) yoy change in the nominal effective exchange rate.

Energy prices and domestic slack as drivers of inflation Table 1

Dependent variable:	Germany	Japan	UK	USA
<i>Headline inflation</i>				
<i>Intercept</i>	1.23 *** (0.07)	0.03 (0.06)	0.97 *** (0.11)	1.79 *** (0.06)
<i>Energy price inflation</i>	0.01 *** (0.00)	0.00 (0.00)	0.01 *** (0.00)	0.02 *** (0.00)
<i>Industrial production gap</i>	0.05 *** (0.00)	0.06 *** (0.01)	0.05 *** (0.01)	0.06 *** (0.01)
<i>Lagged headline inflation</i>	0.05 (0.05)	0.20 ** (0.07)	0.48 *** (0.05)	0.02 (0.03)
<i>Log-change of NEER</i>	0.00 (0.01)	-0.01 (0.01)	-0.03 *** (0.01)	-0.03 *** (0.01)
Observations	243	243	243	243
R ²	0.64	0.20	0.50	0.83

*** p < 0.001; ** p < 0.01; * p < 0.05.

Sources: Federal Reserve Bank of St. Louis, FRED; authors' calculations. Sample: monthly data from 2008M1 through 2021M3.

The sample consists of monthly data from 2008M1 through 2021M3. Predictions are obtained by simple OLS regression of headline inflation on the four factors. When predicting inflation using one specific factor, the others are kept at their sample mean. Table 1 shows the regression results for Germany, Japan, the United Kingdom and United States. While the four factors explain about 83% of inflation variability in the United States, they fit inflation in other countries less well, especially Japan. Industrial production is statistically significant for all countries in the sample, whereas energy prices are significant for all except Japan.

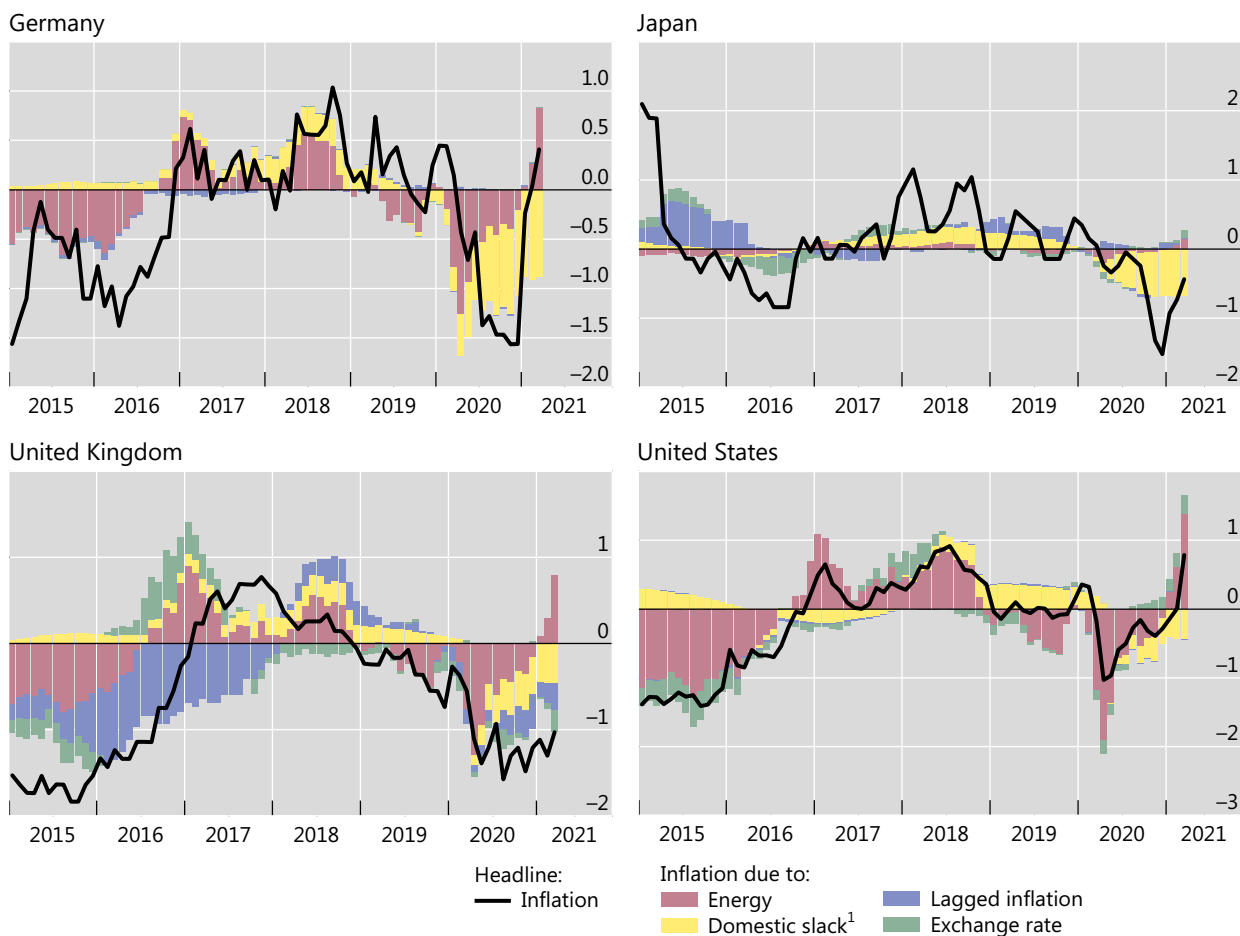
We use these regression results to predict inflation and compare it with actual inflation, as shown in Graph 1. For all countries, energy prices would predict considerably higher inflation, albeit to a much lesser extent in Japan. Domestic slack appears as the main factor offsetting this force, while the exchange rate and inflation inertia appear more idiosyncratic across countries.

¹ Gaps are computed as difference between the time series and its trend. The trend is extracted using the Hamilton (2018) filter.

Decomposition of inflation among AEs

Percentage points, deviation from the mean

Graph 1



¹ Industrial production relative to trend. Lagged inflation consists of 12-month lagged yoy inflation. The exchange rate consists of the yoy change of the log nominal effective exchange rate.

Sources: Federal Reserve Bank of St. Louis, FRED; authors' calculations. Sample: monthly data from 2008M1 through 2021M3.

References

Hamilton, JD (2018): "Why you should never use the Hodrick-Prescott filter", *Review of Economics and Statistics*, vol 100, no 5, pp 831–43.