Swiss Re Institute

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Economic insights

Beneath the surface: uncovering "true" growth and inflation

Key takeaways

- "Carry-over" effects in economic forecasts mean that the previous year's dynamics influence the current year's annual average growth rates.
- Strong positive carry-over effects from the exceptional economic rebound in 2021 are boosting our 2022 GDP growth and inflation forecasts across key economies. We see "true" GDP growth much weaker in 2022, while "true" inflation is still very strong.
- In 2023 we expect negative carry-over effects on growth in the US and Europe, but slightly stronger true growth, while true inflation momentum will likely lose strength.
- To fully assess the economic outlook one needs to analyse both the headline numbers and the narrative.

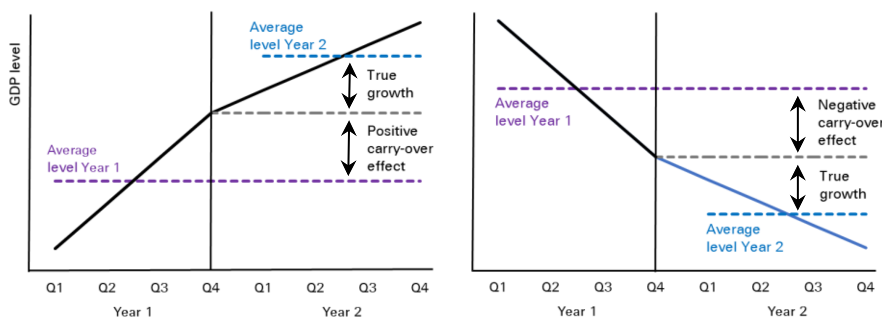
In a nutshell

Forecasts for GDP growth or inflation can be skewed by "carry-over effects", in which the prior year's growth dynamics impact the current year's forecast. We see this in our 2022 real GDP forecasts, which make our numbers look higher than the "true" growth this year. In 2023 this effect should reverse for GDP growth – but should intensify for inflation. "True" growth and inflation are key to watch in volatile economic periods like today.

You may wonder why Swiss Re Institute's (SRI) forecasts for GDP growth aren't lower. After all, our global baseline projection is for "inflationary recessions" in major economies within 12-18 months, with Europe worst hit this winter. Yet, for example, our 2022 UK real GDP growth forecast is a solid 3.3%, higher than for the US. This conundrum stems from a statistical effect arising from the method of calculating annual growth rates, both for GDP and inflation.

As per common convention, we forecast real GDP growth as an annual average growth rate: the year-on-year change of average real GDP over the four quarters of each year. However, this means the rate is determined by growth dynamics in the four quarters of the previous year as well as those in the current year. The influence of the prior-year growth trend is known as the "carry-over effect", which captures how much of this year's annual average growth is ascribable simply to fluctuations in the level of real GDP from quarter to quarter in the earlier year.[1] Stated differently, carry-over effects capture what GDP growth in a given year would be if all quarterly growth rates in that year were zero (i.e. the quarterly levels of GDP remain unchanged from the fourth quarter of the prior year), which can be positive or negative (see Figure 1).[2] "True" growth is the difference between the annual average rate and carry-over effects.

Figure 1
Illustration of carry-over effects from year 1 to year 2, which can be either positive (left) or negative (right)



Source: Swiss Re Institute

Last year's exceptional post-COVID growth rebound creates particularly strong positive carry-over effects in 2022 – so our 2022 GDP forecasts are higher than "true growth" (see Table 1). However, we expect negative carry-over

[1] "The carry-over effect on annual average real GDP growth", European Central Bank, March 2010.
[2] Carry-over effects are always present, and mostly positive as real GDP and the CPI index generally increase.

effects in Europe and the US in our 2023 forecasts, as we anticipate recessions in these markets this winter. This implies that underlying "true" quarterly growth should be a bit stronger next year to achieve our relatively low full-year forecasts.

Table 1
Decomposition of SRI's annual average real GDP and CPI inflation forecasts

	2022			2023		
	SRI forecast	Carry-over effect	"True" growth	SRI forecast	Carry-over effect	"True" growth
Average annual change in real GDP						
US	1.50%	1.95%	-0.45%	0.80%	-0.03%	0.83%
Germany	1.40%	0.84%	0.56%	0.20%	-0.41%	0.61%
UK	3.30%	2.76%	0.54%	0.20%	-0.47%	0.67%
Japan	1.30%	0.58%	0.72%	1.30%	0.31%	0.99%
China	3.40%	1.62%	1.78%	5.30%	2.67%	2.63%
Average annual change in CPI index						
US	7.80%	2.89%	4.91%	3.30%	2.37%	0.93%
Germany	8.30%	2.02%	6.28%	5.50%	4.74%	0.76%
UK	9.60%	3.14%	6.46%	8.50%	5.93%	2.57%
Japan	2.10%	0.44%	1.66%	1.20%	0.57%	0.63%
China	2.30%	0.32%	1.98%	2.60%	1.03%	1.57%

Source: Swiss Re Institute

For inflation, similar to growth, we forecast the year-on-year percentage change of the average of the headline CPI index over the 12 months of each year. Given the strong inflation momentum that built during 2021, most major economies entered 2022 with notable positive carry-over effects, largest in the US and UK. This year's further inflation surge will bring even larger carry-over effects in 2023, especially in Europe (see Table 1 above). "True" inflation momentum is very strong this year, but we expect it to moderate in 2023.

By extension, be careful when comparing economic outlooks from different sources. For example, it is also common to present annual CPI forecasts as the year-end inflation rate, as the Bank of England (BoE) reports. Its end-2022 forecast of 13% is not an "apples-to-apples" comparison to our forecast of 9.6%, but when converted into a comparable average annual rate, the BoE forecast is roughly the same as ours. Similarly, there are different definitions of "recession".[3]

When using annual macroeconomic projections, for instance in insurance premium calculations, is it essential to carefully consider the narrative provided with numerical forecasts (you can read ours here). The narrative captures the underlying dynamics of quarterly or monthly data, which provide insight into past and expected future "true" momentum. The narrative also accounts for absolute levels, which matter in addition to relative rates of change. For example, a "moderation" in CPI inflation rates does not mean absolute price levels are coming down (that would be deflation), but that prices are just expected to increase at a lower rate – households (and insurers) will still suffer from high and rising prices. When comparing narratives and numbers make sure to compare "apples to apples" and choose the best-suited data carefully.

About Economic Insights
Analysis of key economic developments and their implications for the global re/insurance industry.

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[3] We define a recession as at least two consecutive quarters of negative quarter-on-quarter real GDP growth, implying the annual growth forecast for a given year can still be positive.