Economic Analysis

Mexico's economic recovery will be slow and 'square root'-shaped

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- **Our base case for 2020-2025 GDP growth forecasts does not point to the recovery of the 4Q19 GDP level until the end of 2023**
- **But given the downward bias to our 2020 GDP growth forecast more towards the lower limit of our forecast interval ranging between -6% and -12%, the recovery of such level would not occur until after 2025**
- **The anticipated recovery of GDP after the Covid-19 pandemic effect shows that it would neither have a "V" nor "U" shape but would look more like the square root symbol**
- **Using the intervention analysis methodology, we estimate that such effect on the 2Q20 GDP will be -10.8% and -16.0% in relation to 1Q20 under our base and adverse scenarios, respectively**
- **This methodology also indicates that the magnitude of such effect will vanish very slowly and will be lower than 1.0% in two and four years under the base and adverse scenarios, respectively**

The social distancing measures introduced with the Covid-19 pandemic are having a devastating effect on economic activity in countries all over the world. Mexico will be one of the worst affected emerging economies for the following reasons: i) social lockdown measures will depend on the health criteria in each federal state and for this reason the opening up of the country's economy will be staggered; ii) it is a relatively more open economy, which makes it more vulnerable to external demand shocks; iii) the relatively low average growth of recent years, complicated by a new local political environment that slows down private investment; iv) public finances are largely dependent on oil, which is not at all favorable in a global economic situation that has caused a destruction of around 35% of global demand for this commodity; and v) a very insufficient countercyclical fiscal policy reaction coupled with a monetary stance that has not yet achieved levels associated with looseness.[1]

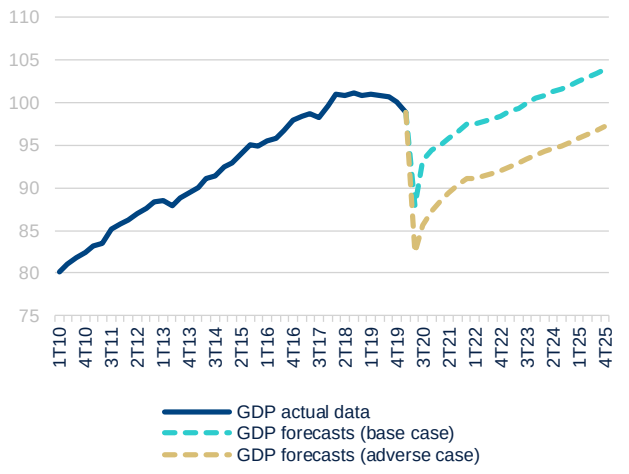
The uncertainty associated with the economic impact of the pandemic and the length of time that social distancing measures will last have led to the downward revision of our forecast. In other words, although our forecast for GDP growth in 2020 was initially -7% (baseline scenario), we now position growth close to the lower limit of -12% in our range of -6% to -12%. We consequently defined an adverse scenario for GDP with -12% as the annual growth forecast for 2020. Figure 1 shows GDP projections for 2020-2025 with seasonally adjusted data for the baseline and adverse scenarios. Figure 1 also shows that the expected economic recovery will not be in the shape of a "V" or a "U" but will

1: Werner (2020) shows that Mexico's fiscal response of about 1% of GDP is the second weakest of all the Latin American economies. The interbank interest rate objective is at a level of 5.50%, which is within the estimation range for a neutral interest rate. It is worth mentioning that a neutral interest rate is a level of interest rate that is not high enough to slow economic growth nor low enough to promote higher inflation.

be rather similar to the square root symbol.[2] However, it is important to note that new waves of contagions could lead to a "W"-shaped economic recovery.

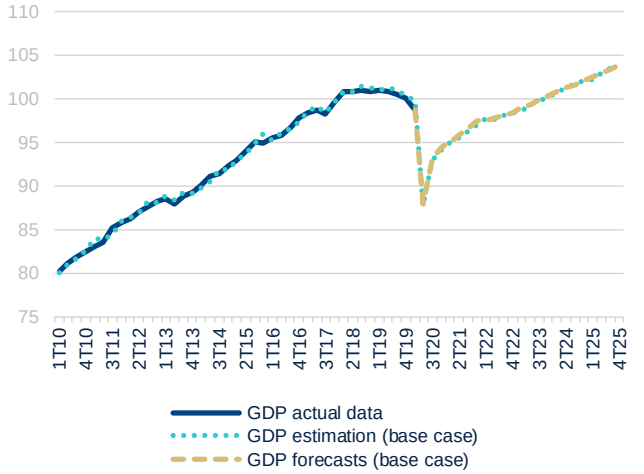
In order to estimate the impact of the Covid-19 pandemic on our GDP forecasts for both scenarios, we decided to use the intervention analysis methodology from Box and Tiao (1975). This methodology allows us to evaluate how an event, whether natural or man-made, affects a data-generating process by changing the function of the mean or the trend of a time series. The case discussed in this paper is an event (the pandemic) that involves a temporary change in the GDP trend. Figures 2 and 3 show the estimated series for GDP after applying the intervention analysis methodology to the GDP series under the baseline and adverse scenarios, respectively.

Figure 1. **Projection for GDP**
(4Q19 GDP=100; data are seasonally adjusted)



Source: BBVA Research based on INEGI data

Figure 2. **GDP estimation (baseline scenario)**
(4Q19 GDP=100; data are seasonally adjusted)

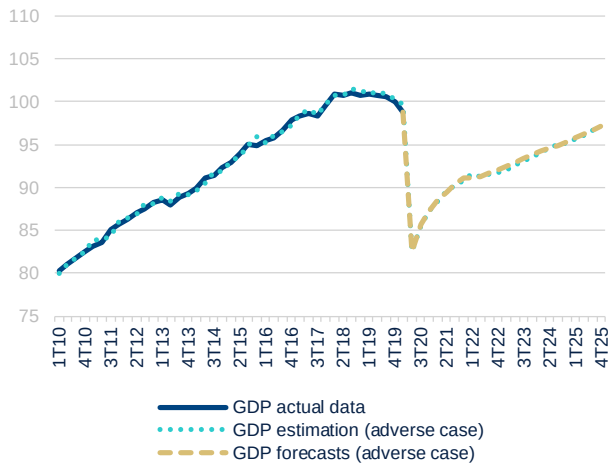


Source: BBVA Research based on INEGI data

Figure 4 shows the estimated impact of the pandemic on GDP over time. This effect on GDP in the second quarter of 2020 will be -10.8% and -16.0% compared to the first quarter of the year under our baseline and adverse scenarios, respectively. Likewise, the disappearance of the effect over time will occur very gradually, so that its impact will only be less than 1.0% by the first quarter of 2022 and the first quarter of 2024, under the baseline and adverse scenarios, respectively. By the fourth quarter of 2022 and the first quarter of 2025, the impact of this effect will be less than 0.5% for the baseline and adverse scenarios, respectively.

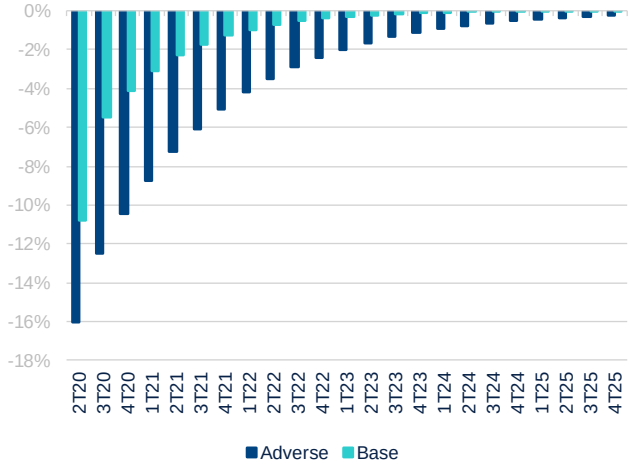
2: Riquier (2020) notes that analysts Pat Tschosik and Rob Anderson of Ned Davis Research are forecasting a 'square root'-shaped recovery for the US economy after the pandemic.

Figure 3. **GDP estimation (adverse scenario)**
(4Q19 GDP=100; data are seasonally adjusted)



Source: BBVA Research based on INEGI data

Figure 4: **Estimated impact of pandemic on GDP**
(% change from 1Q20 GDP)



Source: BBVA Research based on INEGI data

It is important to note that the econometric estimation of the GDP series was done using SARIMA models that incorporated the effects of the intervention analysis. We used the Cryer and Chan's TSA package (2008) within the R computing environment. The estimated parameter values, standard errors and results for the likelihood and AIC criteria are shown in Tables 1 and 2.

Table 1. **Results of GDP estimation (baseline scenario) with SARIMA model (0,1,4) x $(0,1,0)_4$ and intervention analysis**
(GDP data in natural logarithms)

Parameters:								
	ma1	ma2	ma3	ma4	2Q13	3Q17	1Q18	2Q20-MA0
	0.4368	0.3577	0.2415	-0.68	-0.007	-0.009	0.0072	-0.0385
Standard errors:	0.1186	0.1293	0.1446	0.115	0.0022	0.0022	0.0022	0.0063
	2Q20.1-AR1	2Q20.1-MA0						
	0.7442	-0.0758						
Standard errors:	0.0751	0.0069						
Statistical criteria:	AIC = -460.28		ln(likelihood) = 240.14					

Source: BBVA Research based on INEGI data

Table 2. **Results of the GDP estimation (adverse scenario) with SARIMA model (0,1,4) x $(0,1,0)_4$ and intervention analysis**
(GDP data in natural logarithms)

Parameters:								
	ma1	ma2	ma3	ma4	2Q13	3Q17	1Q18	2Q20-MA0
	0.4724	0.4117	0.3145	-0.625	-0.007	-0.009	0.0068	-0.0129
Standard errors:	0.1168	0.1263	0.1445	0.1119	0.0022	0.0022	0.0022	0.0055
	2Q20.1-AR1	2Q20.1-MA0						
	0.8268	-0.1618						
Standard errors:	0.0349	0.0063						
Statistical criteria:	AIC = -460.17		ln(likelihood) = 240.08					

Source: BBVA Research based on INEGI data

Conclusions

The projected collapse of GDP in the second quarter of 2020 not only will be a concern for economic performance in 2020 but also for the following years because potential economic growth will be affected both by the increased idleness of the production factors (capital and labor) and by the weak response of fiscal policy that will hamper a faster economic recovery. Although we recognize that the Mexican government has limited fiscal space to address the current negative shocks, we believe that fiscal discipline could be maintained as long as any increase in public spending goes hand in hand with a tax reform proposal that increases tax revenue and comes into effect as soon as the health emergency is behind us. More than ever, economic support is needed through direct transfers to citizens who have lost their formal jobs or to informal workers who have seen their income sharply reduced.

References

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