

Revised 2020 Macroeconomic Forecast for Macao

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- In response to the rapid spread of the COVID-19 pandemic and its impact on social and economic development, the University of Macau's (UM) Centre for Macau Studies and the Department of Economics have announced the revised 2020 Macau Macroeconomic Forecast using the Macroeconometric Structural Model of Macao. The forecast has been revised internally twice, in February and April respectively, since its first announcement in January this year.
 - **Reasons for revision:** it was to believe that the COVID-19 would soon be under control since its originating outbreak at the beginning of this year. However, it was not the same as the prediction. With the epidemic spreading worldwide, in February, we reconsidered the impact on the economic risk in Macao. Further with the rapid spread of the pandemic in the following month, we readjusted the prediction of the Macao's economy in April for the second time. Until now, we believe that the adjustment of the overall development of the Macao's economy in March will be relatively easier for us to forecast the economic conditions in Macao for the year 2020. During this period of economic adjustment in March, Macao has experienced an economic condition of slightly recovery, social distancing and isolation with the outside to some extent, which provide all possible assumptions for the forecast.
 - **Assumption 1**
 - Total visitor arrivals and the gross gaming revenue now play a more important role in Macao's economic growth.

- Because of the worldwide effects of COVID-19, the growth factors of other regions are relatively not significant.
 - Epidemic prevention and control tends towards normalisation.
 - It appears that the coronavirus has not taken a widely spreading pathway in Africa compared with the rest of the world.
 - China's economic growth is expected to be less than 2 per cent.
 - Hong Kong's economy is expected to see steady deterioration.
- **Assumption 2**
 - **Scenario 1**
 - 2nd Quarter: total number of tourists: 33 thousand
 - 3rd Quarter – 10% of total number of tourists in 2019 (992 thousand)
 - 4th Quarter – 10% of total number of tourists in 2019 (920 thousand)
 - **Scenario 2**
 - 2nd Quarter: total number of tourists: 33 thousand
 - 3rd Quarter – 10% of total number of tourists in 2019 (992 thousand)
 - 4th Quarter – 40% of total number of tourists in 2019 (3,681 thousand)
 - **Scenario 3**
 - 2nd Quarter: 30 thousand of visitors from Mainland China; total number of tourists: 33 thousand
 - 3rd Quarter – 10% of total number of tourists in 2019 (992 thousand)
 - 4th Quarter – 70% of total number of tourists in 2019 (6,642 thousand)
 - **Scenario 4**
 - 2nd Quarter: total number of tourists: 33 thousand
 - 3rd Quarter – 30% of total number of tourists in 2019 (2,975 thousand)
 - 4th Quarter – 40% of total number of tourists in 2019 (3,681 thousand)

➤ **Scenario 5**

- 2nd Quarter: total number of tourists: 33 thousand
- 3rd Quarter – 30% of total number of tourists in 2019 (2,975 thousand)
- 4th Quarter – 70% of total number of tourists in 2019 (6,442 thousand)
- Upon a comprehensive analysis and on the basis of the above assumptions, the research team believes that the first, the second, or a mix of the two scenarios, is likely to materialise for Macao in 2020. If Macao's economy rebounds in the second half of this year, the third, fourth, and fifth scenarios are expected to materialise. Nevertheless, the economy will contract more than 40% even if it rebound in the second half of 2020.
- If the forecast is based on the first and second scenarios, the real output may be similar to that of 2004. If the forecast is based on the third, fourth, and fifth scenarios, Macao's real GDP may be close to that of 2005.

Macroeconomic Forecast for 2020

Economic growth

- The baseline forecast of Macao's economic growth are -59.1%, -58.4%, -57.7%, -55.8% and -55.7% respectively.
- Initially, the lower, baseline, and upper forecasts are -12.0%, -3.7% and 4.7%.
 - The adjustment of the forecast was mainly based on the assumption that the epidemic was short-lived and would not spread on a large scale. However, this hypothesis was not established. Instead, it has made a more pragmatic assessment of the five scenarios for the development of the epidemic.
 - Macao's economic growth during the SARS period in 2003 was 11.7% (of which -9.4% in the second quarter). This new coronavirus is very likely to have a greater negative growth effect.

Exports of services

- The baseline forecast of the exports of services adjusted down by -81.0%, -78.8%, -77.0%, -74.3% and -72.6%.
- Initially, the lower, baseline, and upper forecasts are -14.2%, -4.3%, and 5.7%, respectively.
- The major reduction in the growth of the service industry is mainly due to the fact that in the first two quarters, the gaming industry has greatly reduced the number of tourists owing to the epidemic prevention measures in local and other regions.

Private consumption

- Private gross fixed capital formation adjusted down by around 8%.
- Electronic consumer cards may have little impact to the consumption growth.

Investment

- Total gross fixed capital formation adjusted down by 33%.
- A speedy and stronger public investment is expected to slow down the total investment.

Inflation

- Inflation adjusted up by 2.1% to 2.2%, (both CPI and GDP deflaor) which is a modest change compared with the initial forecast made in January.

Work earnings

- Median monthly employment earnings adjusted down by 5.8% to 6.7%, among which the difference between the highest and the lowest rate is projected to be 6.8%.

Employment

- Unemployment rate is projected to be between 2.2% to 2.8%, which is a moderate increase. Excluding non-resident workers, the unemployment rate for residents is expected to be 3.2% to 3.9%.

Government Revenue

- The ultimate government revenue is expected to drop to between MOP 71.3 billion and MOP 92.9 billion.

All forecasts are in in real term (2018=100), except the government revenue is nominal.

Policy Considerations

- As mentioned above, the coronavirus outbreak mainly affects Macao's economic growth, with less impact on the two major macroeconomic variables: unemployment and inflation. This is how Macao's economy is affected differently by the pandemic compared to other economies.
 - The epidemic is a short-term shock to Macao's economy. However, as it has already impacted the local economy in the first and second quarters of this year, there will be a negative impact on the annual economic growth rate.
 - Following the SARS epidemic in 2003, the Individual Visit Scheme was launched to boost Macao's economy. But similar schemes will have less effect on economic recovery following the COVID-19 as the base number of visitors has increased. W
 - With the economic tension between China and the United States, and the slowdown in China's economic growth, Macao's economy is expected to deteriorate in 2020.

- The positive factors of Macao's economic recovery include the city's fiscal surpluses, business environment, and comparatively reasonable consumer prices and employment rate.
- Therefore, the macroeconomic policy and its objective should aim to stabilise the labour market in the short run, prevent the closedown of businesses, and maintain the confidence of producers and consumers, in order to promote a gradual economic recovery.

Yet, the five scenarios mentioned above and the relevant analysis do require an in-depth study to ensure the accuracy of the forecast and the effectiveness of the policies formulated based on the forecast. If the coronavirus pandemic demonstrates a fundamental change, further revisions are required.

Table 1 Forecasts of Major Economic Variables in 2020						
Year-on-Year Growth Rate (2018=100) (%)		Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Gross Domestic Product	Lower	-60.0	-59.5	-58.8	-56.9	-56.9
	Baseline	-59.1	-58.4	-57.7	-55.8	-55.7
	Upper	-58.1	-57.4	-56.6	-54.6	-54.5
Private Consumption Expenditure	Lower	-10.9	-10.9	-10.8	-10.8	-10.7
	Baseline	-8.7	-8.7	-8.6	-8.6	-8.6
	Upper	-6.5	-6.5	-6.4	-6.3	-6.3
Gross Fixed Capital Formation	Lower	-40.5	-40.5	-40.4	-40.4	-40.5
	Baseline	-36.1	-36.0	-36.0	-36.0	-36.0
	Upper	-31.6	-31.5	-31.5	-31.5	-31.5
Exports of Goods	Lower	-61.7	-61.1	-61.1	-61.1	-61.1
	Baseline	-58.3	-58.3	-58.3	-58.3	-58.3
	Upper	-55.6	-55.6	-55.6	-55.6	-55.6
Exports of Services	Lower	-81.6	-79.6	-77.9	-75.4	-73.8
	Baseline	-81.0	-78.8	-77.0	-74.3	-72.6
	Upper	-80.3	-78.1	-76.2	-73.2	-71.5
Imports of Goods	Lower	-46.5	-43.2	-40.9	-40.0	-35.8
	Baseline	-44.0	-40.2	-37.5	-36.7	-32.0
	Upper	-41.5	-37.2	-34.2	-33.3	-28.2
Imports of Services	Lower	-42.8	-41.8	-41.1	-40.2	-39.6
	Baseline	-40.6	-39.4	-38.8	-37.7	-37.0
	Upper	-38.4	-37.1	-36.5	-35.1	-34.4
GDP Deflator Growth Rate	Lower	0.6	0.6	0.6	0.6	0.6
	Baseline	2.1	2.2	2.2	2.2	2.2
	Upper	3.6	3.8	3.8	3.8	4.0

CPI (Composite)	Lower	1.5	1.5	1.5	1.5	1.5
	Baseline	2.2	2.2	2.2	2.2	2.2
Inflation Rate	Upper	2.8	2.8	2.8	2.8	2.8
Median Monthly	Lower	-9.6	-9.4	-9.1	-8.9	-8.8
Employment	Baseline	-6.7	-6.4	-6.1	-5.9	-5.8
Earnings	Upper	-3.7	-3.5	-3.1	-2.8	-2.7
Unemployment Rate	Lower	2.6	2.4	2.2	2.1	2.0
	Baseline	2.8	2.7	2.4	2.4	2.2
	Upper	3.0	2.9	2.6	2.6	2.5
Unemployment Rate (Residents)	Lower	3.6	3.4	3.1	3.0	2.9
	Baseline	3.9	3.8	3.4	3.3	3.2
	Upper	4.3	4.1	3.7	3.7	3.5
Government Revenue	Lower	652	709	749	810	849
	Baseline	713	778	820	889	929
	Upper	775	847	892	968	1,010

About the Macroeconometric Structural Model of Macao

The Macroeconometric Structural Model of Macao is a quarterly simultaneous-equations econometric model which covers seven blocks of Macao's economy --consumption, investment, external sector, prices, government, labour market, and monetary sector. It includes 89 equations and 251 variables. Time series data start from the first quarter of 1998 and is updated once new data are available. Its results provide the community with a timely understanding of the state of Macao's economy and support prudent decision-making. The model was founded by Prof Sir James Mirrlees, winner of the Nobel Prize in Economic Sciences and honorary doctor of social sciences of the University of Macau, as well as faculty members in the Department of Economics at UM. Project members include Dr Chan Chi Shing, postdoctoral research fellow in the Centre for Macau Studies; Prof Ho Wai Hong, associate professor in the Department of Economics; Prof Kwan Fung, assistant professor in the Department of Economics; and Prof Liu Chun Wah, assistant professor in the Department of Economics. The Centre for Macau Studies, UM is currently responsible for the project.