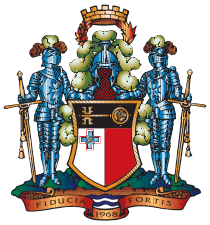


BANK ĊENTRALI TA' MALTA
EUROSISTEMA
CENTRAL BANK OF MALTA

THE ECONOMIC EFFECTS OF THE COVID-19 TOURISM DOWNTURN

Article published in the Quarterly Review 2022:3, pp. 51-56

BOX 2: THE ECONOMIC EFFECTS OF THE COVID-19 TOURISM DOWNTURN[1]

In response to the rapid spread of the COVID-19 outbreak, national governments, including that of Malta, have implemented a range of mitigation measures designed to limit the transmission of the coronavirus. Most of these measures have been focused on limiting social interactions and consequently, have had disproportionately large effects on contact intensive industries such as tourism. Most of the first measures that were introduced globally were directly aimed to restrict international travel, thus having substantial effects on the global tourism industry. Indeed, the tourism industry is considered to be one of the worse hit industries worldwide, with estimates suggesting that in 2020 global tourism arrivals dropped by more than 70%, reducing global GDP by around 2% and putting more than 100 million employees at risk (UNWTO, 2021).[2]

In line with measures introduced at a global scale, Maltese authorities have started introducing inbound passenger screening by late February 2020, followed by a rapid implementation of further containment measures (Sant, 2021).[3] Among others, these included restrictions on gatherings and public events, closures of schools and of the non-essential retail shops and services, and the suspension of all inbound passenger flights, with some exceptions for repatriation flights. As a result of these developments, together with the direct effect of the outbreak of the pandemic, Malta's real GDP in 2020 declined by 8.3% when compared to a year earlier. In line with global estimates, the Maltese tourism industry was the most heavily hit sector in Malta, with tourist arrivals in 2020 falling by around 76% when compared to 2019. Given the unprecedented scale of the crisis that hit global tourism, as well as the considerable intersectoral linkages that characterise the industry, it is likely that the downturn in the tourism industry had far reaching effects in other sectors of the Maltese economy. This study aims to quantify the sectoral and macroeconomic effects that this unprecedented fall in tourism had on the Maltese economy during 2020, while taking in consideration the considerable interlinkages this industry has with the rest of the economy.

Method

This study makes use of a Leontief demand module found within the Input-Output framework put forward in Rapa (2020),[4] updated with the latest symmetric input-output table (SIOT) available for the year 2015. This simulation framework is exceptionally well-suited to capture the sector-dependent direct and indirect economic effects of the contraction in the tourism industry following the COVID-19 crisis.

The calibration of this scenario analysis requires the estimation of the direct exposures each sector has to the tourism industry. The latest information in this respect is available

---

1 Prepared by Noel Rapa, Manager Modelling Office in the Research Department at the Bank. The views expressed are the author's own and do not necessarily represent the views of the Central Bank of Malta.

2 See World Tourism Organisation, (2021). Tourism Data Dashboard, https://www.unwto.org/unwto-tourism-dashboard, viewed 29 October 2021.

3 See Sant, K. (2021). The COVID-19 pandemic and disruption in 2020: Developing a government response tracker for Malta. CBM *Policy Note*, April 2021.

4 See Rapa, N. (2020). A sectoral model extension to STREAM. CBM *Working Papers*, WP/08/2020, Central Bank of Malta.

from the Tourism Satellite Accounts (TSA) of 2010. Table 1 shows the proportion of sectoral output that is directly supplied to fulfil tourism related expenditure.

These figures convey two points. First, there is considerable heterogeneity in the sectors' direct exposure to the tourism sector. Second, there is even more heterogeneity when we decompose tourism demand into inbound tourism, domestic tourism for the purposes of domestic trips and domestic tourism for the purposes of outbound trips.[5,6] Against this backdrop, the calibration of the shocks needs to reflect the heterogeneity in the cross-sectoral exposures to the three different types of tourism expenditure which have been impacted to varying degrees by the pandemic emergency. The calibration of the tourism shocks is further complicated by the fact that the latest TSA for the Maltese economy have been published in 2010. While still relying on TSA 2010 tables, the calibration of the simulation analysis needs to take in consideration the profound structural changes that have significantly changed the relative size of some sectors within the Maltese economy.

To this end the calibration process used in this study proceeds in three steps. First, we estimate the percentage change in inbound, outbound and domestic tourism expenditure that is attributable to the COVID-19 emergency. Based on this definition, the shock to inbound tourism expenditure in 2020 is estimated at -80.6%. On the other hand, the shock to the expenditure of domestic tourists for the purposes of domestic trips is calculated at +43.9%, largely reflecting the substantial increase in the number of Maltese residents visiting Gozo for leisure purposes in 2020. As less Maltese residents travelled abroad during the year, the expenditure of Maltese tourists for the purposes of outbound trips in 2020 was estimated to have fallen by 78.6% vis-à-vis baseline levels as a result of the pandemic.

Table 1
PROPORTION OF SECTORAL OUTPUT DIRECTLY ABSORBED BY THE TOURISM INDUSTRY
Per cent of sectoral output

	Inbound tourism	Domestic tourism (domestic trips)	Domestic tourism (outbound trips)	Total tourism
Travel agencies and other reservation activities	24.0	0.0	28.1	52.1
Land transport and transport via pipelines,…	45.3	1.3	4.2	50.8
Accommodation and food services activities	42.7	1.9	0.1	45.2
Creative, arts and entertainment activities	32.9	0.0	0.0	32.9
Education	23.4	0.1	0.1	23.6
Rental and leasing activities	15.0	0.1	0.1	15.1
Sports activities and amusement and recreation activities	13.1	0.0	0.0	13.1
Other	0.9	0.0	0.0	0.9

Source: Author's calculations based on TSA 2010.

[5] 'Domestic tourism for the purposes of domestic trips' refers to instances when residents of Malta travel to Gozo for leisure. In the rest of this report, this type of tourism will be referred to as "domestic tourism".
[6] 'Domestic tourism for the purposes of outbound trips' refers to expenditure in Malta that is solely due, or for the purposes of, undertaking an outbound trip. This includes all expenditure incurred in Malta for the purposes of traveling abroad, including any flights, hotels etc booked with local travel agents. In the rest of this report, this type of tourism will be referred to as "outbound tourism".

Table 2
SHARE OF INTERNAL TOURISM OUTPUT USED IN EACH SECTOR
Per cent of tourism output

	Inbound tourism	Domestic tourism (domestic trips)	Domestic tourism (outbound trips)	Total tourism
Accommodation and food services activities	52.3	64.4	2.5	49.6
Land transport and transport via pipelines,…	25.4	20.1	32.8	25.6
Travel agencies and other reservation activities	3.6	0.1	58.4	7.0
Retail trade, except of motor vehicles and motorcycles	3.8	4.4	3.7	3.8
Manufacture of food products, beverages and tobacco products	3.9	4.7	0.4	3.7
Education	3.0	0.3	0.1	2.7
Rental and leasing activities	2.1	0.3	0.1	1.9
Sports activities and amusement and recreation activities	1.8	0.0	0.0	1.6
Wholesale trade, except of motor vehicles and motor cycles	1.5	3.1	1.1	1.5
Creative, arts and entertainment activities	1.3	0.0	0.0	1.2
Publishing activities, motion picture, video…	0.4	0.8	0.3	0.4
Manufacture of textiles, wearing apparel and leather products	0.2	0.2	0.0	0.2
Real estate activities	0.2	0.4	0.1	0.2
Other professional, scientific and technical activities...	0.2	0.4	0.1	0.2
Crop and animal production, hunting and related services…	0.1	0.2	0.1	0.1
Manufacture of paper and paper products, printing…	0.1	0.2	0.1	0.1
Other personal service activities	0.1	0.1	0.0	0.1
Manufacture of computer, electronic and optical products…	0.1	0.1	0.0	0.1
Legal and accounting activities; activities of head offices…	0.0	0.1	0.0	0.0
Activities auxiliary to financial services and insurance activities	0.0	0.1	0.0	0.0
Total	**100**	**100**	**100**	**100**

Source: Author's calculations based on TSA 2010.

Second, we normalise the level of final demand changes to all three types of tourism to 2015 EUR million levels, a step necessary to make use of the simulation framework which is based on a set of IO tables covering 2015.[7]

Finally, the shocks to each sector are estimated by decomposing the overall change in aggregate final demand (estimated in 2015 prices) for each tourism type into different sectors in line with the sectoral tourism output decomposition, derived from data contained within the TSA tables. These are illustrated in Table 2 and show the proportion of tourism output by type that is supplied by each sector.[8]

Results

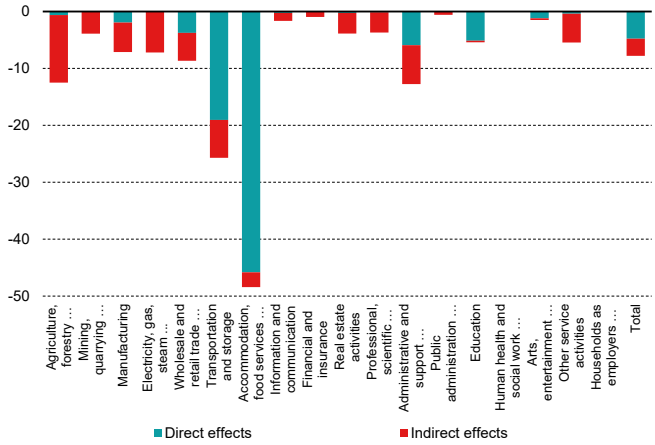
We simulate the model by imposing a series of final demand shocks to all sectors in line with Table 2. Results in Chart 1 show the sectoral effects of the drops in tourism expenditure in terms of GVA. The chart indicates that the contraction in the tourism industry has led

[7] This is done in two stages. First, we use the proportion of output in the Maltese economy that is directly used by the overall tourism industry as per TSA 2010 and apply this proportion to the total final demand in the Input Output database for 2015. Second, we find the aggregate final demand shock for each tourism type by using information contained within the TSA 2010 tables. In particular, we use information on the proportion of total tourism output supplied for the purposes of inbound tourism, domestic trips and domestic expenditure for outbound trips, to disaggregate the shock to total tourism final demand to different tourism types. The reader is referred to the Appendix of Debono and Rapa (2021), The Economic Effects of the COVID-19 Tourism Downturn, Central Bank of Malta *Policy Note*, December 2021, for a detailed explanation of all steps involved in this part of the calibration.

[8] Tables 1 and 2 show different concepts. The proportions in Table 1 are useful in identifying which sectors had the highest direct exposure to the tourism industry. On the other hand, the estimates in Table 2 show the extent to which the tourism industry relies on different sectors to produce its output.

to substantial declines in the GVA of Accommodation and food service activities (-48.4%), Transportation and storage (-25.7%), Administrative and support services activities (-12.8%), Agriculture, forestry and fishing (-12.5%) and Wholesale and retail trade sectors (-8.7%). Moreover, the GVA of sectors covering manufacturing activities as well as the production of electricity and water treatment and supply has also been substantially impacted by the drop in tourism expenditure.

Chart 1
DECOMPOSITION OF SECTORAL EFFECTS
(percentage deviation from sectoral GVA)



Source: Author's calculations.

As expected, the overall results show the strongest losses in GVA for sectors which have been identified as being exceptionally exposed to the tourism industry. These include sectors such as the Accommodation and food services activities and the Transportation and storage sector, where a significant part of final demand is directly absorbed by inbound or outbound tourism expenditure. This is mirrored by the fact that the main drivers of sectoral results relate to direct effects. However, the sectoral effects of the downturn in the tourism industry are not only limited to direct effects. This is most evident for the Agriculture, forestry and fishing sector whose GVA is estimated to have fallen by almost 13% when compared to the baseline projections for 2021, almost entirely on the basis of indirect effects. This is especially due to the fact that 40% of the interindustry supply of this sector is demanded by Accommodation and food services activities, which on the other hand is the sector which is most directly exposed to the tourism industry. Similar arguments apply for Electricity, gas, steam and air conditioning supply and waste collection services, the Administrative and support services activities and the Manufacturing sectors, all of which are indirectly exposed to the tourism industry, mainly through the supply of intermediate production to the Transportation and storage and Accommodation and food services activities sectors.

Table 3 shows the annual economy-wide percentage losses in GVA, employment and labour income together with the respective percentage drops in aggregate final demand components that are directly and indirectly attributable to the decline in the tourism industry in 2020.

The contraction of the tourism industry caused by the COVID-19 pandemic has led to a drop in aggregate GVA of almost 7.8%, mostly driven by a contraction in inbound tourism expenditure. In view of the small contribution that domestic expenditure for the purposes of

Table 3
AGGREGATE RESULTS
Percentage deviation from baseline forecasts

	Inbound tourism	Domestic tourism (domestic trips)	Domestic tourism (outbound trips)	Total tourism
Total GVA	-7.5	0.1	-0.5	-7.8
Total labour income	-7.4	0.1	-0.5	-7.8
Total employment	-9.1	0.2	-0.6	-9.5
Aggregate Final Demand				
Private Consumption	-2.9	0.4	-3.9	-6.4
Government Cons.	-0.6	0.0	0.0	-0.6
Private Investment	-2.9	0.1	-0.1	-3.0
Exports	-6.1	0.0	-0.1	-6.2
Imports	-2.9	0.1	-1.1	-4.0

Source: Author's calculations.

outbound trips has on the domestic economy, the fall in the outbound tourism industry has led to subdued negative effects on the overall economy estimated at 0.5% of baseline GVA. On the other hand, the rise in expenditure incurred on domestic trips is estimated to have led to a marginal rise in the aggregate economic activity in Malta of around 0.2%. Thus, on aggregate, the negative effects attributable to the drop in outbound tourism expenditure have only been partially outweighed by an increase in domestic tourism expenditure, implying that the combined effects of the COVID emergency on the domestic tourism market – defined as the sum of outbound and domestic trips – on the local economy is estimated to have been slightly negative.

As expected, given the size of the sectors and the extent of the fall in their GVA, the Accommodation and food services activities, the sector comprising Land transport and transport via pipelines and the Wholesale and retail trade, except of motor vehicles are main contributors behind the aggregate falls in GVA. Indeed, together these three sectors explain more than half of the drop in aggregate GVA.

Conclusion

This study reveals that the contraction in the tourism industry has significantly affected sectors that are exceptionally directly exposed to tourism, such as the Accommodation and food services activities and the Transportation and storage activities sector. However, given the substantial cross-sector interlinkages, other sectors such as the Agriculture, forestry and fishing, Manufacturing and the Electricity, gas and steam sectors have also suffered considerable GVA losses from indirect effects. On aggregate, taking in consideration both direct and indirect effects, the fall in the tourism industry has reduced overall GVA by 7.8%, mostly due to a contraction in inbound tourist arrivals. Excluding the effects of government intervention, aimed at mitigating the impact of the pandemic on the labour market, this fall in GVA is likely to have reduced labour income by almost 8% and overall employment by 9.5%.

These results should be interpreted within the context of an ever-transforming tourism industry and a lack of more updated TSA. In the last decade, the Maltese tourism industry has undergone significant transformations characterised by a steep increase in the demand for private accommodation and a considerable rise in the proportion of tourists that choose low-cost airlines to travel to the islands. Indeed, while the calibration process is quite robust to changes in the relative size of sectors due to factors other than tourism, changes in the reliance of the Maltese tourism industry to different sectors could have important implications on the results discussed above.