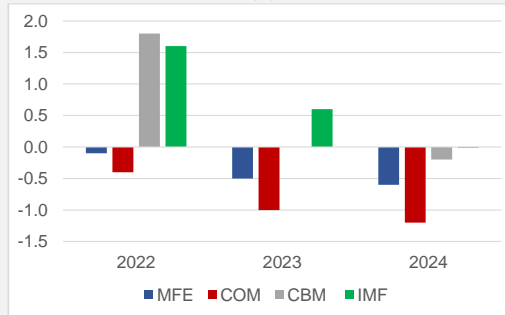


Output gap forecast by MFE and other institutions (%)



Source: MFE, COM, CBM, IMF

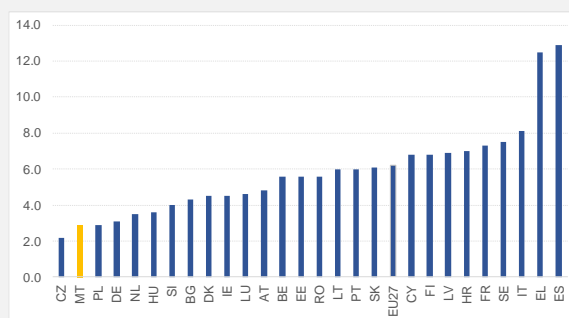
Overall, the forecasts presented by the other institutions for real GDP, inflation rate, and employment growth seem to follow similar trajectories and are quite close. The fact that MFE forecasts lie within a range of forecasts as presented by the other institutions, substantiates the endorsement of the Council. In terms of the output gap, the Council's views tend to incline more towards the forecasts as presented by the IMF for 2023 as indicated in the risk assessment presented for potential output and the output gap.

### BOX B: UNEMPLOYMENT AND OUTPUT NEXUS: TESTING OKUN'S LAW FOR MALTA

The last twenty years or so have been marked by notable periods of economic uncertainty, global instability and international upheavals. Events such as the dot-com crash and the terrorist attacks of 9/11 in 2001, the economic and financial crisis of 2008–2009 and the sovereign debt crisis that followed, the Covid-19 pandemic that started in early 2020, and Russia's invasion of Ukraine in February 2022, have all had a negative impact on the global economy and consequently also on labour markets, albeit to varying degrees across countries. This is best exemplified by the differences in unemployment rates amongst EU member states. For example, in 2022, Czechia had the lowest unemployment rate in the EU, at 2.2%, while Spain had the highest rate, at 12.9%. The unemployment rate in Malta is 2.9%, which is the second lowest rate in the European Union. The disparity in unemployment rates across EU countries is largely attributed, though not limited, to differences in labour market regulations and policies, differences in the industrial structures composing the economy and the extent of labour intensity in key sectors and the economy, and variations in policy initiatives designed to counter effect negative economic shocks and firms' response to such policies.

### Unemployment Rate in EU Countries in 2022

(Percentage of the labour force)



Source: Eurostat

The link between output and unemployment, known as Okun's law, was originally studied and published in economic literature in the early 1960s using post-second World War US data, revealing a negative relationship between the two.<sup>20</sup> Indeed, Okun found that a drop of 1 percentage point in output increased the unemployment rate by around 0.3 percentage points.

More recent estimates for the EA reveal that from 1996 to the beginning of the 2008-09 recession, typical Okun coefficient estimates were close to -0.4.<sup>21</sup> However, studies based on data samples, which include the financial crisis of 2008-2009, find that the unemployment rate became less responsive to changes in output. This could be partly explained by the principle of labour hoarding, which, during the 2008-2009 subprime mortgage crisis, was further supported by short-time working arrangements. Such policies have, to some extent, distorted the unemployment-output relationship.

During the COVID-19 pandemic, a similar distortion was seen in 2020 and 2021. The COM had urged Member states to adopt countercyclical fiscal policies to strengthen their economies and help them endure the harsh consequences of COVID-19. This has been accomplished by activating the general escape clause in the SGP. It also provided financing for short-time work schemes and similar measures, through the temporary SURE (Support to mitigate Unemployment Risks in an Emergency) instrument. Focusing on Malta, the labour market remained strong in 2020 despite an 8.1% fall in the country's real GDP, with the unemployment rate rising very little during that time. This was mainly because of the significant assistance provided by the Maltese government to safeguard employment through various initiatives, such as the COVID wage support scheme, which allowed most Maltese firms to retain their existing workforce.

Okun's law has fluctuated in popularity as a tool in the macroeconomics toolbox. Even while it is often acknowledged that this "law" is merely a statistical link and not

<sup>20</sup> See Okun, A.M., "Potential GNP: Its Measurement and Significance", Proceedings of the Business and Economic Statistics Section, American Statistical Association, 1962, pp. 98 – 104.

<sup>21</sup> See box entitled "Back to Okun's Law? Recent developments in EA output and unemployment", ECB Monthly Bulletin, June 2011.

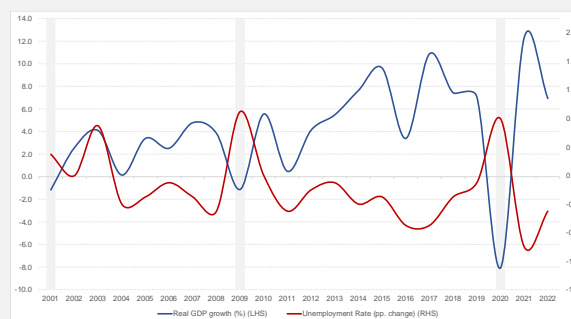
always a structural aspect of an economy, part of its attraction is still its simplicity. This suggests that this association might not hold up over time, particularly if the economy experiences significant structural changes. In fact, new research indicates that this association varies greatly between countries, especially following periods of severe economic distress.<sup>22</sup> Additionally, research suggests that Okun's relationship has asymmetries, with unemployment tending to increase more during recessions than to decline during periods of growth.<sup>23</sup>

Against this background, this box presents empirical estimates of the link between output and the unemployment rate in Malta during 2001-22 based on Okun's law. It also compares the strength of this relationship in other EU nations.

### ESTIMATING OKUN'S LAW FOR MALTA

According to GDP data, there were three recessions (grey columns) over the time under consideration, with the most recent one being the most significant in terms of the recorded contraction in real GDP. Malta saw strong rates of real GDP growth in most of the remaining years of the study period. The data also points to the possibility of a negative correlation between changes in GDP growth and changes in unemployment rates; that is, when real GDP growth accelerates, the unemployment rate typically declines and vice-versa. Therefore, a priori, it is expected that the Okun coefficient will be negative and statistically significant.

GDP growth and changes in the unemployment rate  
(annual series)



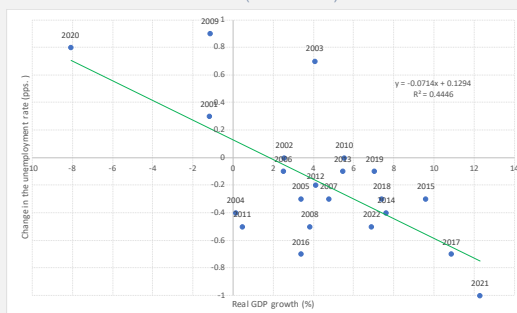
Source: Eurostat

Indeed, when regressing the changes in the unemployment rate against real GDP growth using annual data from 2001 to 2022, the coefficient values obtained are 0.13 for the y-intercept and -0.07 for the Okun coefficient. This confirms a negative relationship between output and unemployment. The rate of output growth consistent with a stable unemployment rate is estimated at 1.8%. This means that a 1.0 percentage point increase in real GDP growth in excess of 1.8% lowers the unemployment rate by around 0.07 percentage points.

<sup>22</sup> See Pizzo, A., "Literature Review of Empirical Studies on Okun's Law in Latin America and the Caribbean", EMPLOYMENT Working Paper, Employment Policy Department, International Labour Organisation, Working Paper No. 252, 2019.

<sup>23</sup> See Harris, R. and Silverstone, B., "Testing for asymmetry in Okun's Law: a cross-country comparison", Economic Bulletin, 2001, 5, pp. 1 – 13.

### Okun's Relationship in Malta (annual data)



Source: Eurostat; Author's calculations

The difference version of Okun's law for Malta has also been undertaken as shown in the following table, which makes use of quarterly data spanning from the first quarter of 2001 to the second quarter of 2023.<sup>24</sup> The GDP growth rate that is consistent with a stable unemployment rate is estimated to be 1.6%, whereas the first equation, called static, indicates an Okun's coefficient of -0.07. The value of the Okun coefficient is very similar to the estimates obtained in a similar study by the Central Bank of Malta (CBM).<sup>25</sup> The intercept is not statistically different from zero at standard significance levels, though, and this is important to note. Even after accounting for lags in the dependent and explanatory variables, the results hold steady, showing that changes in domestic economic activity have little impact on the labour market while being statistically significant. The dynamic specification, including lags both for the dependent and the explanatory variables, indicates that the long-run Okun's coefficient is close to zero.

### REGRESSION COEFFICIENTS FOR OKUN'S LAW

**Table 1B: Dependent variable:  $\Delta(UR_t)$  Sample: 2001Q1 – 2023Q2**

Specification	Intercept	Explanatory Variables			Adjusted R2
		$\Delta(Y_t)$	$\Delta(Y_{t-1})$	$\Delta(UR_{t-1})$	
Static	0.11	-0.07***			26%
Dynamic (a)	0.11	-0.07***	-0.00*		24%
Dynamic (b)	0.11	-0.07***	-0.02*	-0.32***	41%

Statistical significance: \* at 90% confidence interval, \*\* at 95% confidence interval, \*\*\* at 99% confidence interval

Source: Author's calculations

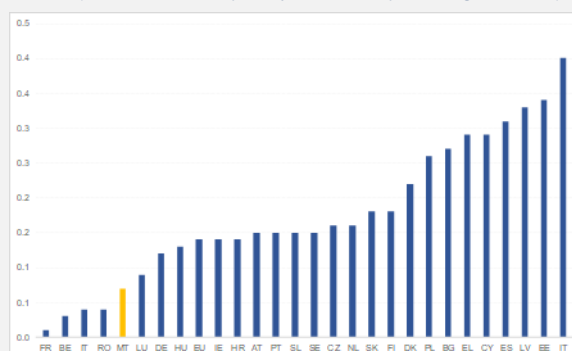
<sup>24</sup> The first four observations are lost when calculating the yearly growth rate of GDP and the change in the unemployment rate because quarterly data only goes back to 2000. The National Accounts and the Labour Force Survey are the sources of the GDP and unemployment figures, respectively.

<sup>25</sup> See box entitled "Estimating Okun's Law for Malta", Central Bank of Malta Quarterly Review, 2013:3.

## COMPARISON WITH EU COUNTRIES

Using the static specification and the same sample of quarterly data, the following chart plots the Okun's coefficient for EU countries. In comparison, Malta's Okun's coefficient is one of the lowest in the European Union.

Comparison of Malta's Okun's Coefficient with EU countries  
(estimates based on quarterly data, static equation, negative values)



Source: Author's calculations

The cross-country comparison shows a considerable degree of heterogeneity in Okun's coefficient. This heterogeneity is due to a number of factors, such as the degree of labour market flexibility, including the ease with which firms can fire and hire workers and the extent to which firms can adjust wages, the power of trade unionism and collective bargaining, including the firm's ability to reduce employees' working hours, employment protection legislation, the magnitude and type of shocks hitting the economy, and the degree of tightness in the labour market. For instance, the high Okun coefficient in the case of Spain could be related to the elevated incidence of temporary contracts.<sup>25</sup>

In the case of Malta, an important reason for the relatively low Okun coefficient is labour hoarding. Hoarding labour would be the best course of action if businesses anticipate that the decline in demand will only be temporary. This is because doing so would prevent them from having to pay more expenses should they need to hire new workers in the future. This is at times complemented by government support to firms to retain workers during periods of deficient demand. A perfect example of this is the unprecedented government support in wage assistance schemes during the Covid-19 pandemic.

## FISCAL ASSESSMENT

**25. At the time of the USP, the MFE had projected that the fiscal deficit ratio would fall beneath the 3% threshold by 2026, but in the DBP, this target has now been deferred to 2027. Meanwhile, the debt-to-GDP ratio is anticipated to rise consecutively over the forecast period, albeit remaining below, but**