



BANK ĊENTRALI TA' MALTA  
EUROSISTEMA  
CENTRAL BANK OF MALTA

# AN ANALYSIS OF MALTA'S POTENTIAL TO TELEWORK

## BOX 1: AN ANALYSIS OF MALTA'S POTENTIAL TO TELEWORK<sup>1</sup>

### Introduction

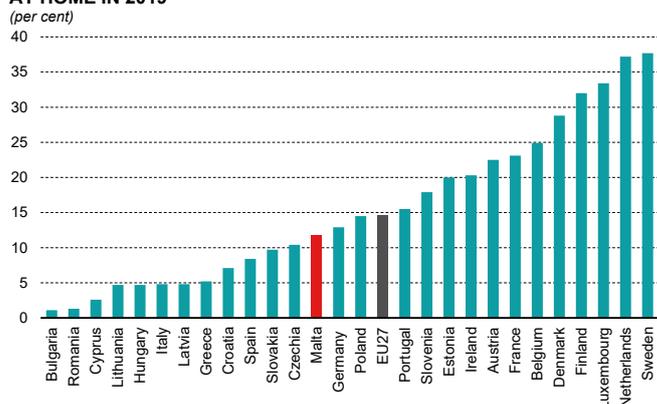
The COVID-19 pandemic has brought about significant changes to individual lifestyles. The measures put in place have also impacted work patterns, with many governments advocating the use of teleworking facilities whenever possible. This was also the case in Malta, where early in the outbreak of the COVID-19 pandemic, Malta Enterprise issued a scheme designed to assist employers to invest in technology to facilitate teleworking among their employees.<sup>2</sup>

In light of the circumstances brought about by the COVID-19 pandemic, this box builds on recent literature and estimates the share of jobs that could be performed from home in Malta through an analysis by economic activity. Different scenarios are constructed to reflect the difficulties in accurately ascertaining the degree of teleworking potential in normal and extraordinary times. For instance, certain jobs that could be considered as non-teleworkable in normal times – such as education activities – had to be performed from home during the outbreak of the COVID-19 pandemic. In normal times, teleworking in education activities can arguably be considered as less effective and productive than teaching in person. Following an estimation of the current share of teleworkable jobs in Malta, this study also explores how Malta's utilisation of its teleworking potential has developed in recent years and how it now compares with that in the European Union.

### Prevalence of teleworking in Malta and the European Union

Before the pandemic, the prevalence of teleworking in Malta was lower than the EU average and stood at 11.7% in 2019 (see Chart 1).<sup>3</sup> This should not mask the fact that this figure represents a substantial improvement over the corresponding position at the start of the decade when only 3.6% of all employed individuals did some work from home. This increase in the use of teleworking has coincided with the rise in employment among females, who often require flexible working arrangements in

**Chart 1**  
SHARE OF PERSONS IN EMPLOYMENT (aged 15+) DOING SOME WORK AT HOME IN 2019  
(per cent)



Source: Eurostat.  
Note: Individuals doing "some" work from home comprises individuals who work from home "usually" and "sometimes".

<sup>1</sup> Prepared by Nathaniel Debono, a Research Economist in the Research Department at the Bank. Helpful comments by Prof. Edward Scicluna, Dr Mario Vella, Mr Alexander Demarco, Dr Aaron G. Grech and Dr Brian Micallef are gratefully acknowledged. The views expressed in this article are those of the author and do not necessarily reflect those of the Central Bank of Malta. Any errors are the author's own.

<sup>2</sup> Malta Enterprise (2020), "Business Development and Continuity Scheme: Call for the Facilitation of Teleworking Activities".

<sup>3</sup> Eurostat. (2020), "Employed persons working from home as a percentage of the total employment, by sex, age and professional status (%)".

order to strike a balance between work and family commitments. Nonetheless, the prevalence of teleworking in Malta remains relatively low by European standards. While this may be influenced by cultural factors, a country's teleworking potential is also largely dependent on its industry composition.<sup>4</sup> In terms of employment, wholesale and retail trade, and manufacturing are the two largest sectors in Malta, employing a quarter of all those in employment. A further one-tenth work in human health and social work activities while construction, and accommodation and food service activities employ 7% and 8%, respectively. These industries often necessitate physical presence at the place of work and are thus not usually compatible with teleworking.

Notwithstanding this, the number of employees working from home increased substantially during the COVID-19 outbreak in Malta. Official statistics show that a third (33%) of all employed persons did some work from home in March and April 2020.<sup>5</sup> While this represents a 21 percentage points increase relative to the situation in 2019, it also points towards substantial under-utilisation of the country's potential to work from home prior to the COVID-19 outbreak. Increased take-up of teleworking during the pandemic has also been observed in the European Union, where in July, 48% of employees reported that they had worked from home at least some of the time during the pandemic.<sup>6</sup>

### Academic interest in the potential for teleworking

The rise in the application of teleworking during the COVID-19 pandemic has inspired numerous studies to estimate the potential to work from home in various countries. Dingel and Neiman (2020) estimate the work-from-home capacity in the United States using two Occupation Information Network surveys and an alternative manual classification.<sup>7</sup> It emerges from their work that 37% of the jobs in the United States can be performed from home, with jobs in finance and insurance, management of companies and enterprises and professional, scientific and technical services among the most likely to be performed from home.

Alipour et al. (2020) primarily use survey data from the 2018 wave of the BIBB/BAuA Employment Survey to calculate Germany's capacity to work from home by sector. The share of teleworkable jobs by industry is also calculated using the 2-digit NACE classification. While jobs in the financial services industry turn out to have the largest capacity to telework, activities such as publishing activities, telecommunications, programming and broadcasting activities, and real estate activities are also found to have large capacities to work from home in Germany, with at least 70% of jobs in these sectors found to be teleworkable.

Gottlieb et al. (2020) use occupational data at ISCO level to explore differences in the capacity to work from home in urban areas by country income levels, finding that the share

<sup>4</sup> Alipour, J., Falck, O., & Schüller, S. (2020), "Germany's capacities to work from home", *Discussion Paper*, IZA Institute of Labour Economics.

<sup>5</sup> National Statistics Office (2020), "The Effect of COVID-19 on the Labour Market: A comparison between March and April 2020".

<sup>6</sup> Eurofound (2020), "Living, working and COVID-19", COVID-19 series, Publications Office of the European Union, Luxembourg.

<sup>7</sup> Dingel, J. I., & Neiman, B. (2020), "How many jobs can be done at home?", *Journal of Public Economics* Vol. 189.

of jobs that can be performed from home varies between 22% in poor countries and 37% in rich countries.<sup>8</sup>

In their analysis of the impact of the COVID-19 confinement measures on the EU labour markets, Fana et al. (2020) classify economic sectors into one of the following five categories: fully active; teleworkable; partly active; mostly non-essential; and closed.<sup>9</sup> On the basis of these classifications, they then estimate the share of workers in each EU country that would likely be affected by COVID-19 mitigation measures.

## Method

Similar to the approach taken by Fana et al. (2020), the share of jobs which could be performed from home in Malta is estimated through an analysis by economic activity. Employment data at the NACE 2-digit level was gathered from the LFS. This is the highest level of disaggregation at which data is publicly available, yielding 99 different economic sectors. Next, a distinction is made between sectors that could realistically have their operations conducted remotely and others that cannot. In determining which sectors are compatible with teleworking, the studies by Fana et al. (2020) and Alipour et al. (2020) are considered, supplemented by expert judgement where necessary to reflect domestic industry-specific considerations.

At a minimum, all the sectors deemed teleworkable in the work of Fana et al. (2020) are considered as such in this analysis, although it is qualified that some are less likely to be performed from home in normal circumstances. For instance, while education activities had to be conducted remotely during the COVID-19 pandemic, it is to be expected that in normal circumstances such activities require face-to-face interaction. Furthermore, given that the main purpose of this work is to estimate Malta's potential to telework, other sectors not classified as teleworkable by Fana et al. (2020) but which in normal circumstances could also realistically be performed from home are also considered to be teleworkable. The determination of these additional activities is guided by the work of Alipour et al. (2020) who estimate the work-from-home capacity of each economic sector in Germany. In the absence of more detailed information about Malta, it is assumed that the sectors that are estimated to have more than 70% capacity to work from home in Germany are teleworkable in Malta. One exception relates to the treatment of gambling and betting activities, which Fana et al. (2020) classify as "forcefully closed" within the COVID-19 context and Alipour et al. (2020) estimate to have a 48% work-from-home capacity in Germany. In light of the relatively large presence of gaming companies in Malta and their compatibility with teleworking, this economic activity is also considered teleworkable.

As has already been qualified, some economic activities are more compatible with teleworking than others. As a result, Malta's potential to telework is calculated under three scenarios. Each scenario differs in the assessment of which industries could have their operations shifted away from the place of work and a share of teleworkable jobs is calculated under

<sup>8</sup> Gottlieb, C., Grobovsek, J., & Poschke, M. (2020). "Working from Home across Countries", Cahiers de recherche 07-2020, Centre interuniversitaire de recherche en économie quantitative, CIREQ.

<sup>9</sup> Fana, M., Tolan, S., Torrejón, S., Urzi Brancati, C. & Fernández-Macías, E. (2020), "The COVID confinement measures and EU labour markets", EUR 30190 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-79-18812-4. DOI: [10.2760/079230](https://doi.org/10.2760/079230), JRC120578.

each scenario.<sup>10</sup> An important caveat is that, since disaggregation is only available at the 2-digit level, this study assumes that all jobs classified under each of the sectors deemed teleworkable can be performed remotely. Hence, the share of teleworkable jobs estimated under each scenario is likely an upper bound of the true figure.

### Results: analysis by economic activity

Table 1 presents the three scenarios explored in this analysis. Scenario 1 includes only those jobs which require minimal, if any, interaction with others and are therefore deemed relatively easy to perform via teleworking. These mainly include jobs in information and

**Table 1**  
**SELECTION OF JOBS DEEMED TELEWORKABLE IN MALTA**

	Scenario 1	Scenario 2	Scenario 3	Fana et al. (2020)
<b>Sector</b>				
<u>Highly likely to be able to telework</u>				
Computer programming, consultancy and related activities	✓	✓	✓	✓
Information service activities	✓	✓	✓	✓
Financial service activities, except insurance and pension funding	✓	✓	✓	✓
Insurance, reinsurance and pension funding, except compulsory social security	✓	✓	✓	✓
Activities auxiliary to financial services and insurance activities	✓	✓	✓	✓
Legal and accounting activities	✓	✓	✓	✓
Activities of head offices; management consultancy activities	✓	✓	✓	✓
Architectural and engineering activities; technical testing and analysis	✓	✓	✓	✓
Advertising and market research	✓	✓	✓	✓
Other professional, scientific and technical activities	✓	✓	✓	✓
Gambling and Betting activities	✓	✓	✓	
<u>Possible to perform by telework</u>				
Publishing activities		✓	✓	
Real estate activities		✓	✓	
Security and investigation activities		✓	✓	✓
Office administrative, office support and other business support		✓	✓	
Public Administration; <sup>1</sup> Compulsory Social Security		✓	✓	✓
Activities of membership organisations		✓	✓	✓
<u>Less likely but may be possible to telework under special circumstances</u>				
Scientific research and development			✓	✓
Motion picture, video and television programme production, sound recording and music publishing activities			✓	
Programming and broadcasting activities			✓	
Telecommunications			✓	
Education			✓	✓
Number of employees (aged 15+) working in these sectors in 2019	39,400	59,400	86,200	73,100
Total number of individuals (aged 15+) in employment in 2019	254,700	254,700	254,700	254,700
Share of individuals in employment (aged 15+) working in teleworkable jobs in 2019	<b>15.5%</b>	<b>23.3%</b>	<b>33.8%</b>	<b>28.7%</b>

Sources: Author's calculations based on Eurostat data.

(1) An estimate of individuals working in *Public Administration* is obtained by excluding police officers and individuals working in armed forces occupations from the total number working in *Public Administration and Defence*. As key elements in the country's defence system, these occupations are highly unlikely to be possible to perform by telework. Data about the number of police officers is only available up to 2018 and it was assumed that this number remained unchanged in 2019. Fana et al. (2020) do not distinguish between *Public Administration* and *Defence* activities and consequently consider both activities to be teleworkable.

<sup>10</sup> The classification of each economic activity under the respective scenario is the author's judgement, shaped by a subjective assessment of the ease with which jobs performed in each economic activity (NACE Rev. 2) could be teleworkable.

communication, financial and insurance activities, professional, scientific and technical activities and online gaming and betting activities.

Scenario 2 incorporates those activities that although deemed less practical to be conducted via telework, may still be possible to perform away from the workplace. Activities classified under this scenario include public administration and some of the sectors that Alipour et al. (2020) find to have more than 70% capacity to work from home, such as publishing activities (including software publishing), real estate activities, and office administrative and support service activities. Finally, scenario 3 considers other jobs that are deemed less likely to be performed from home in normal circumstances, either because they require a significant element of human interaction or due to the use of machinery which may be required. However, as shown by the extraordinary times brought about by COVID-19, they may be teleworkable under abnormal circumstances. Notable examples of activities classified as teleworkable under this scenario include telecommunications (including wireless telecommunications) and education. The 15 activities classified as teleworkable within the context of COVID-19 by Fana et al. (2020) and the resulting share of Maltese teleworkable jobs obtained from following their approach are provided for comparison purposes.

Under scenario 1, 15.5% of jobs in Malta are found to be teleworkable. When a number of other activities that could potentially also be performed from home are included in scenario 2, slightly more than 23% of all jobs in Malta turn out to be potentially teleworkable. The 33.8% figure estimated in scenario 3 is largely contingent on the treatment of those working in education. If education were to be deemed a non-teleworkable activity, Malta's teleworking potential drops down to 24.8%. The upper-bound 33.8% figure estimated under scenario 3 is broadly in line with the share of workers who were working from home during the early weeks of the COVID-19 pandemic in Malta. The estimated teleworking potential under scenario 3 and the actual prevalence of teleworking observed in Malta during March and April 2020 both exceed the 28.7% estimate derived from following the approach of Fana et al. (2020). This reflects the omission, from the approach taken by Fana et al. (2020), of certain activities that continued to be performed remotely in Malta, such as online gaming and betting activities, and office administrative, office support and other business support activities.

### **Teleworking potential: Malta and the European Union**

Chart 2 presents Malta's potential use of teleworking as calculated under the three scenarios outlined in Table 1 and the country's actual prevalence of teleworking. The corresponding figures for the EU average, computed using the same sectoral classification adopted in this study, are also provided to facilitate comparison.

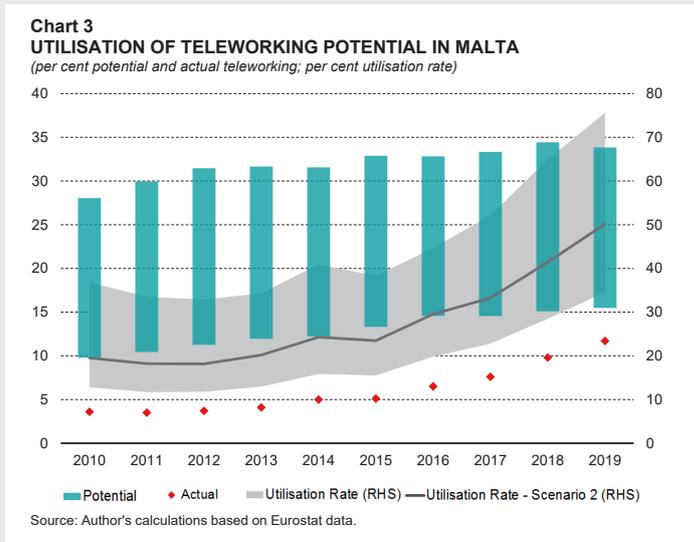
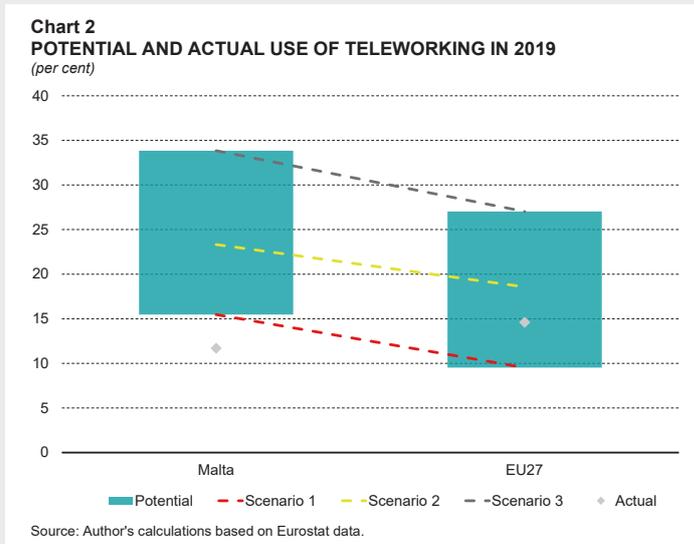
Malta's work-from-home potential is higher than in the European Union under all three scenarios. This is largely driven by the larger share of employees working in online gaming and betting activities, and financial services activities in Malta. For instance, while 3.7% of those employed in Malta worked in the former sector in 2019, only 0.2% had such jobs in the European Union. In the financial services sector, the share of employees working in these

activities in Malta (3.1%) is almost double that observed in the European Union (1.6%). Although to a lesser extent, the share of workers employed in legal and accounting activities and education in Malta also exceeds that observed in the European Union.

Despite Malta's higher potential for teleworking, the country's actual share of employed persons working from home in 2019 was still 2.9 percentage points below the average in the European Union. This implies that Malta's utilisation of its teleworking potential is below that of the majority of the other EU countries. From this analysis, it is estimated that Malta's utilisation rate in 2019, calculated as the actual share of people teleworking to the potential calculated in each scenario, stood at 75.6% under scenario 1, 50.2% under scenario 2 and 34.6% under scenario 3.

### Malta's utilisation of teleworking in recent years

Chart 3 shows the development of Malta's teleworking potential (estimated under scenarios 1-3) and how much of it has actually been utilised in the past decade. Malta's teleworking potential has increased in recent years, largely driven by substantial growth in employment in sectors such as online gaming and betting activities, professional, scientific and technical activities and information and communication, among others. Actual use of teleworking facilities has also increased substantially, from 3.6% at the start of the decade to 11.7% in 2019. This increased prevalence of teleworking has been reflected in considerable improvements in the utilisation of



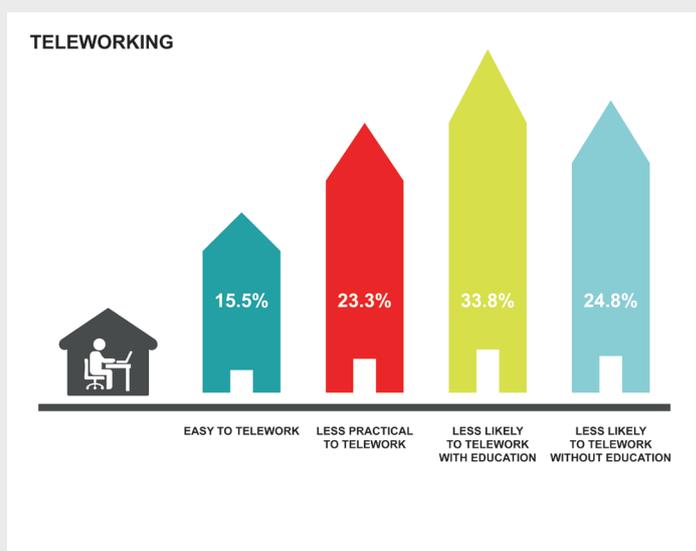
the country's teleworking potential, observed particularly in the second half of the decade under all three scenarios.

### Conclusion and avenues for further research

The ability to work from home has provided shelter from both health risks and the economic shock brought about by the pandemic. Based on an analysis of economic activities, it is estimated that the share of jobs that could be performed by telework in Malta during extraordinary times could exceed one-third. This figure is largely dependent on the assessment of which industries could realistically have their operations performed remotely but is broadly in line with findings of other similar studies carried out abroad and official statistics of teleworking prevalence in Malta during the early months of the COVID-19 outbreak. In normal times, this study suggests that around 15%-25% could be performed from home. The substantial increase in the prevalence of teleworking, which has accompanied the COVID-19 pandemic, implies that utilisation of the country's teleworking potential was rather low before the outbreak, an observation that is confirmed by this analysis. Further analysis shows that although Malta's utilisation remains low compared to the European Union, the past decade has been characterised by considerable improvements in the utilisation of the country's teleworking potential. Closing the gap between the actual and teleworking potential will require a shift in cultural and organisational practices, including higher levels of work autonomy, investment in information and technological infrastructure, and training opportunities to raise firms' and workers' affinity with digital infrastructure.

Constrained by data limitations, the analysis undertaken in this study was limited to economic activities, assuming that all jobs within activities deemed teleworkable could be performed from home. Further research could make use of additional data that may become available about the occupations and economic activities that shifted to teleworking during the COVID-19 pandemic. In this light, information about the beneficiaries of the teleworking scheme issued by Malta Enterprise would be useful to shed some more light in this regard.

While the scope of this study was to estimate Malta's potential to telework, further research is needed to assess the economic impacts of teleworking. Among others, teleworking may affect labour productivity, its effectiveness and employees' well-being. In this respect, it is also relevant to supplement



information about the number of teleworking employees with information about the number of teleworking hours.

Teleworking may also give rise to some economic opportunities and threats. Among others, firms may set up in Malta without the need of a physical presence of employees, and hence positive spill-overs on domestic consumption could be lost. On the other hand, teleworking could make it easier for individuals living in Malta to provide services worldwide without relocating to other countries. In turn, the reduced need to be physically present in the country of employment may also give rise to issues surrounding taxation, such as the determination of the country where it should be charged. The effects of teleworking are also likely to extend beyond the workplace. For instance, while higher prevalence of teleworking may lead to higher electricity consumption, it can also have positive environmental effects, including a reduction in traffic congestion and air pollution, which in turn could help to address the country's climate and energy targets.