The Distributional Impact of the Wage Supplement Scheme on Households in Malta. Insights from EUROMOD[1]

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Abstract

This paper analyses the distributional impact of Covid-19 on households in Malta upon its onset in 2020, by focusing on the implications of the pandemic on the labour market and the subsequent introduction of the Covid-19 wage supplement scheme as a mitigating measure. This is one of the main discretionary policy measures which the Government introduced to counteract the disruption in the economy brought about by the pandemic. The microsimulation model EUROMOD[2] is used to assess the distributional characteristics of three different policy scenarios, including the Baseline scenario. In particular, the distributional effect of the growth in unemployment due to the pandemic, as well as the impact of Government intervention, is illustrated. The main findings show that, in the absence of the wage supplement scheme in 2020, the pandemic would have resulted in a disproportionate increase in the risk of poverty for children and the working age population, with middle-higher income earning households facing the largest decline in disposable income.

JEL: C53, D31, E24, H24

Keywords: Covid-19, pandemic, income distribution, microsimulation, wage supplement, short-time work scheme, unemployment, Malta

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[2] The results presented here are based on EUROMOD version I4.109+. Originally maintained, developed and managed by the Institute for Social and Economic Research (ISER), since 2021 EUROMOD is maintained, developed and managed by the Joint Research Centre (JRC) of the European Commission, in collaboration with EUROSTAT and national teams from the EU countries. We are indebted to the many people who have contributed to the development of EUROMOD.

1. Introduction

This paper analyses the distributional impact of Covid-19 in 2020 on households in Malta by focusing on the implications of the changes in the labour market conditions. In particular, we focus on the impact of the increase in unemployment and also analyse the impact of the introduction of the wage supplement scheme. The pandemic brought several unprecedented challenges with major socio-economic consequences for all countries affected. In Malta, the pandemic and the containment measures implemented to restrict the spread of the virus caused a contraction in economic activity of 7.0 per cent in nominal terms and 8.3 per cent in real terms during 2020. This compares to a decline in the EU average Gross Domestic Product (GDP) of 4.3 per cent in nominal terms and 5.9 per cent in real terms (EUROSTAT, 2022).

EUROMOD, the European tax and benefit model (Sutherland and Figari, 2013) is used to assess the distributional impact of the increase in unemployment due to the pandemic, as well as the impact of Government intervention, through the wage supplement scheme. Although the study seeks to assess the effectiveness of the wage supplement in cushioning the effects of the pandemic, there are also other policies which assist households during an economic shock. Automatic stabilisers are embedded in the current standard tax and benefit system including the unemployment benefit, means-tested benefits, income tax and tax credits. Furthermore, the Government also introduced other discretionary policy measures in 2020 in response to the pandemic which are not included in the model. In particular, the following social measures are not included in our analysis: the additional unemployment benefit, parental benefit, medical benefit and disability benefit. The analysis focuses only on the wage supplement scheme because of two factors; the budgetary size of the measure which was one of the largest and the other factor is due to data limitations.

This analysis utilises the EU-SILC micro-data, however the data for 2020 portraying household income during the pandemic will only become available with a two year' lag. In fact, this study uses the 2019 SILC with an income reference year of 2018. To address this data limitation, the study randomly selects individuals, more specifically employees and self-employed, that could be affected by the pandemic based on survey and administrative data sources from EUROSTAT and Malta Enterprise Corporation, and through the tax-benefit model, EUROMOD, the households' income is predicted during the year 2020.

The main findings suggest that, during 2020, without government intervention, persons of working age and children would have experienced the highest increase in the risk of poverty as a result of the pandemic. Middle-higher income earning households would have faced the largest decrease in disposable income. Moreover, the introduction of the wage supplement scheme was instrumental in providing income protection to households against the risk of poverty and loss in disposable income.

The rest of the paper is structured as follows: Section 2 provides an overview of the economic impact of Covid-19 and Malta's policy response to the pandemic. It also describes the tax and benefit policies that provide protection to household income from negative shocks. Section 3 describes the data and the methodology; specifying the assumptions adopted and the scenarios simulated in EUROMOD; Section 4 presents the main results while Section 5 concludes.

2. Economic Impact of COVID-19 Pandemic

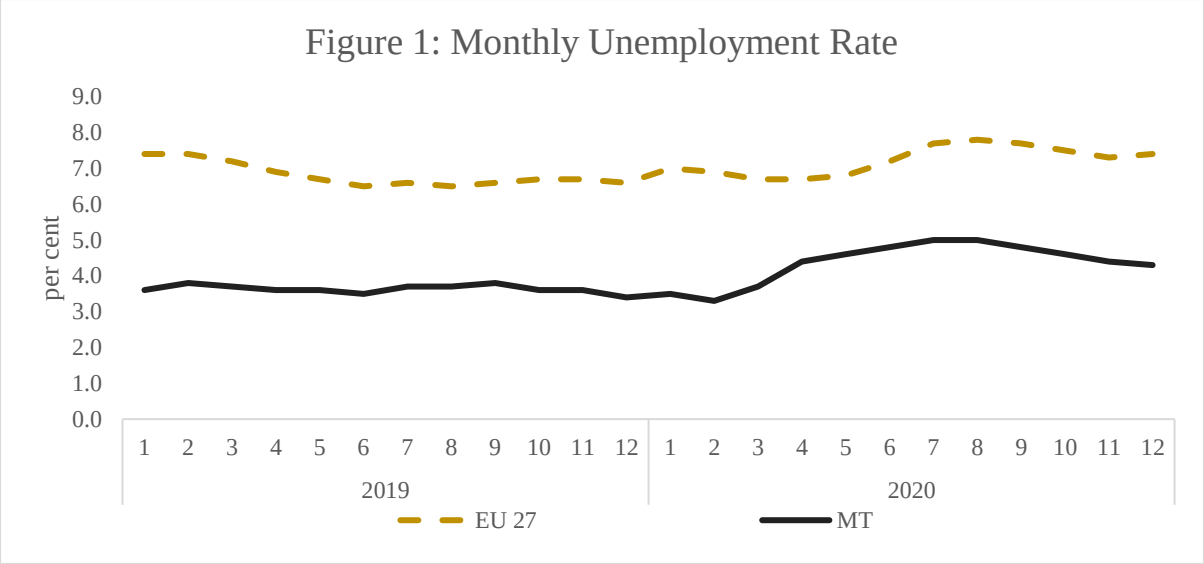
2.1. Overview

The Covid-19 pandemic brought about unprecedented strains to the global economy. The effect of this shock distinguishes itself from previous crises as the decline in demand was accompanied by supply restrictions resulting from the impositions of various lockdowns and other restrictions aimed to reduce the spread of the virus. Furthermore, the effect of the pandemic has been prolonged as new strains of the virus resulted in periodic increases in infections and the re-introduction of public health restrictions. Nevertheless, vaccinations have proven effective at mitigating the adverse health impacts of COVID-19 thus supporting the economic recovery. At the same time, the negative repercussions of the pandemic, are still present in the form of supply chain distortions and shortages, which have resulted in post-pandemic inflationary pressures, whilst strong fiscal responses to mitigate the economic shock resulting from the pandemic have led to increasing budget deficits and rising government debt levels.

During 2020, total Gross Value Added (GVA) declined by 5.6 per cent in nominal terms over 2019. The sector that experienced the highest decline in GVA was the wholesale and retail trade; transport; accommodation and food service activities (34.4 per cent), mainly as a result of the travel restrictions imposed and the interlinkages of this sector to the tourism industry. Other sectors which were negatively impacted by the pandemic include the agriculture, forestry and fishing sector (14.8 per cent) and the professional, scientific and technical activities sector (6.0 per cent). On the other hand, other sectors were more resilient to the pandemic, in particular the information and communication sector (9.7 per cent) and the arts, entertainment and recreation, repair of household goods and other services sector (8.0 per cent).

The Covid-19 pandemic also brought unprecedented challenges for the Maltese labour market due to the unexpected disruption in business activities in several sectors. The closing down of the airport, education institutions and other non-essential retail, service and catering industries together with other restrictive public health measures imposed by the Government had an impact on the employment status and employment conditions of several individuals, with several foreign workers choosing to return to their home countries amid the economic circumstances. Survey data published by the NSO[3] shows that by the end of April 2020, 62 per cent of all persons who were employed before the onset of Covid-19 in Malta claimed that their working conditions were affected. In addition, during the same period, 31 per cent reported a reduction in the number of working hours or complete absence from work. In this regard, it is relevant to note that Article 42 of the Employment and Industrial Relations Act (EIRA) allows businesses who face less favourable conditions to change the working conditions of their employees through the reduction of hours worked or the implementation of periods of unpaid leave. This can be done through an agreement between the business concerned and the Department for Industrial and Employment Relations (DIER).

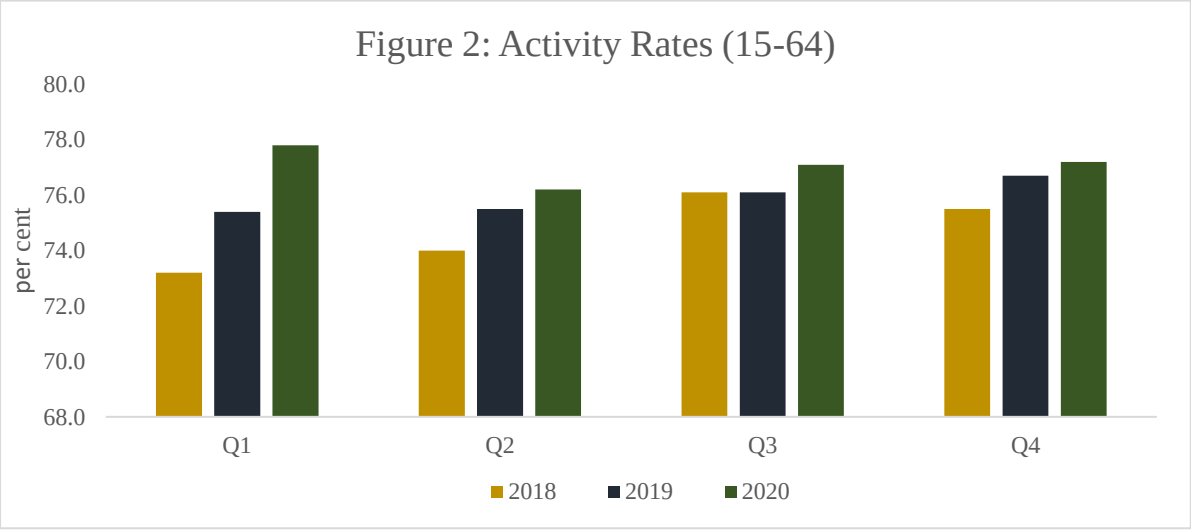
[3] Source: The Effect of COVID-19 on the Labour Market: A comparison between March and April 2020.https://nso.gov.mt/en/News_Releases/Documents/2020/06/News2020_107.pdf



Source: EUROSTAT

The pandemic curtailed the downward trend in unemployment rates observed in recent years. The highest unemployment rate was recorded in July and August 2020, during which months the rate reached 5.0 per cent. In the following months the unemployment rate gradually declined to 4.3 per cent in December 2020, 0.9 percentage points higher than the unemployment rate in the same month of the previous year.

Notwithstanding this increase in unemployment, both the activity rates and the employment rates remained stable in Malta. Activity rates in 2020 stood at 77.1 per cent, 1.2 percentage points higher than the rate in 2019, with improvements registered in all quarters. In addition, despite the marginal decline in the employment rates in Quarter 4 of 2020 when compared to the same quarter of 2019, there was an overall improvement in the employment rates in 2020 which increased by 0.6 percentage points over 2019, reaching to a rate of 73.7 per cent. Additionally, employment rates in the second and third quarter of 2020 stood unchanged from the rates recorded during the same months of 2019. Such results highlight that despite the magnitude of the economic shock resulting from the pandemic, the impact on the labour market was rather contained (both in Malta as well as in the EU), reflecting the strong fiscal response by governments to mitigate the economic impact of the pandemic, and in particular to safeguard jobs through various schemes, as discussed further in Section 2.2.



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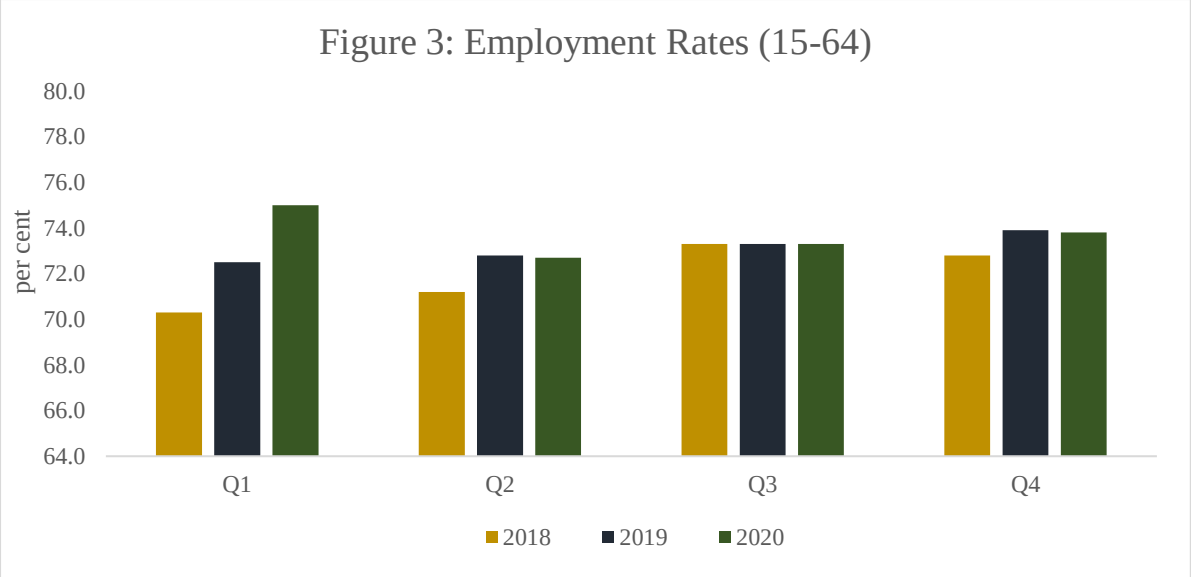


Source: EUROSTAT

Needless to say, the impact of the pandemic is still evident since as observed in Figure 3, employment rates in the third quarter of 2020 were significantly lower than the employment rates in the first quarter of the previous year. Furthermore, the constant employment rates in the second and third quarters of 2020, when compared to the same quarters in 2019, suggest that, whilst there was no reduction in the employment rate, the pandemic stalled growth in employment.

2.2. Malta's Policy Response to Covid-19: Main Measures Targeting Households

To combat the negative impact of the pandemic on the labour market and in particular to safeguard jobs, the Maltese Government introduced the Covid-19 wage supplement scheme, in addition to other measures targeted at easing the impact on the industry. Whilst the scheme helped to support household disposable income during the pandemic, it also avoided a massive increase in unemployment due to the impact of the restrictive measures which hindered business operations as well as lowered demand. Furthermore, without the wage supplement scheme, the pandemic would have had severe implications on the profitability of the enterprises, leading to bankruptcies and potential contagion affecting other sectors of the Maltese economy. Government also introduced a set of social measures for the period between March and June 2020, intended to minimise the impact of Covid-19 on the financial condition of households. These measures included the additional unemployment benefit scheme, the parental benefit scheme, and the disability and medical benefit schemes.

2.2.1 Wage Supplement Scheme

Initially, this scheme provided financial assistance for the period covering 9th March to 1st July 2020 for both employees and the self-employed who operated in economic sectors that were negatively affected by the pandemic. This was later extended until the end of May 2022, with minor changes until the end of December 2020 and a complete revision of scheme from 2021. The wage supplement scheme, apart from financially supporting households from adverse declines in their disposable income, also supported businesses in absorbing labour costs, thus easing their financial burdens and saving jobs.

This wage supplement scheme in 2020 involved three categories of benefits depending on the sectors and how they were impacted by the pandemic, as detailed in three annexes explained below:

Annex A covered employees and self-employed who were operating in sectors that were drastically affected by Covid-19 or had to temporary suspend operation. For these sectors, the benefit was set at

€800 per month for full-timers and €500 per month for part-timers. Whereas during the first phase of the scheme from March to June 2020, this category included several sectors that were required to shut down temporarily, as from 1st July 2020, this benefit was maintained for sectors related to tourist accommodation, travel agencies, language schools, event organisation and air transport. During the same period, this scheme was also extended to pensioners and students that work part-time in the affected sectors.

Annex B included employees working in sectors that were adversely affected by the pandemic but whose operation was not entirely suspended. This partial supplement amounted to €160 per month for full-timers, while part-timers were entitled to €100 per month. This partial supplement also applied to self-employed without employees, while those self-employed who employ workers and Gozo based enterprises were assisted through a monthly benefit of €320 for full-timers and €200 for part-timers. Employers and self-employed who were assisted under the partial supplement retained this aid until September 2020 but employees continue benefiting from Annex B until December 2020. Personal services and other related activities started benefiting from the partial supplement of Annex B from July 2020. Beforehand, during the months from March to June 2020, these same services were receiving the benefit under Annex A.

From July 2020, **Annex C** was introduced, which included other sectors that were previously supported under Annex A from the period from March to June 2020 and not included in the revised sector of Annex A from July 2020. These sectors were assisted through a monthly benefit of €600 for full-timers and €375 for part-timers[4].

Until December 2020 the number of beneficiaries from the wage supplement scheme amounted to around 5,183 registered businesses and 11,796 self-employed covering a total of 71,882 employees.

The scheme remained operative in 2021 until the end of May 2022. During this period, there were a number of changes to the eligibility rules to ensure that the scheme was focused in assisting businesses that were the most severely impacted by the pandemic. The benefit rates that businesses were entitled to were based on the percentage drop in sales they incurred during 2020, as reported in their VAT returns. However, businesses whose operations have been suspended as a result of the restrictive measures imposed in March 2021 (including the closing down of non-essential services), were granted the full benefit. In August 2021 the Government also introduced a two-step phase-out mechanism. In phase one, between August and September 2021, the supplement decreased by 60 to 80 per cent and in phase two, from October 2021 to May 2022 the supplement decreased by an additional 50 per cent.

Due to data constraints, this analysis focuses on the impact of the scheme during 2020 only. This study may be reviewed and further extended in the future once more data becomes available.

2.2.2 Social Measures

Besides the wage supplement scheme, the Government also introduced a set of social measures targeting individuals that were particularly affected by the restrictions imposed during Covid-19. However, the distributional impact of these social measures is not included in this analysis.

These social measures included:

- **Additional Unemployment Benefit** - This was applicable to employees who had their full-time employment terminated as a result of Covid-19 between 9th March and 1st July. The number of beneficiaries amounted to 2,163.

[4] For further detail of the wage supplement scheme see: https://covid19.maltaenterprise.com/wage-supplement-main/

- **Parental Benefit Scheme** - This was applicable to working parents in the private sector who could not attend work or carry out their functions through teleworking and were required to stay at home to take care of their school-age children. This scheme covered the period 9th March to 1st July, whilst schools were closed. The number of beneficiaries amounted to 4,601.
- **Disability and medical benefits schemes** - These were applicable to working disabled and vulnerable people who could not carry out their jobs due to their vulnerability to the Covid-19 virus and were thus ordered to stay at home between the period 27th March to 5th June. The total recipients amounted to 1,706 and 380, respectively.

Each of the above measures included a benefit amounting to €166.15 per week for full-timers and €103.85 per week for part-timers. Unlike the Wage Supplement Scheme, these measures were not extended after the stipulated periods.

3. Methodology and Data Description

3.1 Data Description

The data used in this study is the European Statistics on Income and Living Conditions Survey (EU-SILC) microdata for 2019. The survey data represents the national population and involves comparable information at both individual and household level on incomes (taxes and benefits), poverty, social exclusion and living conditions in the EU. It also contains a wide set of variables that describe the demographic and socio-economic characterises of individuals.

The EU-SILC is a panel survey with a four-year rotating design, whereby, a panel of households remain in the sample for four years and each year, one of the panels is replaced by a new wave. Thus, the survey contains two types of data: cross-sectional, illustrating information at a fixed point in time, and longitudinal data, illustrating individual-level changes over the observed period.

The cross-sectional survey used in this study was conducted in 2019[5], based on a sample of 4,522 households from Malta, with a response rate of 86.0 per cent. These households are made of 9,557 residents, out of which 8,351 were aged 16 years and over[6]. The income reference year in EU-SILC 2019 is 2018. Market income for 2018 to 2020 is updated using the adequate indices for each income source[7]. Therefore, the level and the distribution of income reflect changes between 2018 and 2020, however other demographic, household and labour characteristics reflect the situation captured in 2019 data. Therefore, labour market changes experienced during 2020 because of the pandemic, are not captured in the dataset. For this reason, the study randomly selected individuals (i.e employees and self-employed) to transition in and out of the labour market on the basis of detailed distributional information on labour transitions obtained from the Labour Force Survey (LFS) and administrative data provided by EUROSTAT. The methodological approach is further explained in Section 3.2.

The income considered in this analysis is the equivalised household disposable income. The equivalised household disposable income is the gross income net of any taxes and inclusive of any subsidies, adjusted to reflect household family size. The equivalised value is based on the weight specified by the

[5] The SILC 2020 data with income reference year of 2019 was not utilised for this study as the weighting factors used to randomly select individuals to transition to unemployment/employment and wage supplement scheme are not yet available.
[6] Information on the accuracy and reliability of data can be viewed in a dedicated quality report available on the NSO's metadata website at: https://metadata.nso.gov.mt/reports.aspx?id=27
[7] A detail description of the uprating factors and 2020 policy rules is presented in Malta's EUROMOD Country Report, available at: https://euromod-web.jrc.ec.europa.eu/resources/country-reports/latest

OECD[8], in which the reference person takes a value of one, all other adults in the household take a value of 0.5 each and children take a weighting value of 0.3.

3.2 Tax and Benefit Model EUROMOD

The simulated household disposable income of individuals who were affected by the restrictive measures to contain the spread of the virus depend on the cushioning effect of automatic stabilisers existing in a country in the form of (i) income taxes and social contributions, (ii) contributory benefits for individuals who experience loss in earnings (iii) other means-tested benefits and tax credit aimed at protecting low-income households and (iv) other income received by other household members such as pensions, benefits and employment income. In addition, the disposable income is also affected by the discretionary policy measures that the Government introduced in order to mitigate the negative consequences of pandemic.

To assess the distributional impact of the different scenarios on household disposable income EUROMOD is utilised, which is the EU-wide static tax-benefit microsimulation model (Sutherland and Figari, 2013). The model simulates benefit entitlements (such as housing benefits, social assistance and family benefits) and tax liabilities including both direct taxes and social insurance contributions for the household population based on the tax-benefit rules of the country, through harmonised micro-data of individuals and households. Components of the tax-benefit system that are not simulated, such as old-age pension and original income, are extracted from the EU-SILC data.

In our analysis, the economic impact of the pandemic is presented as a combination of the changes in the labour market in 2020 due to higher unemployment rates, as well as a reduction in the earnings for employees affected by operational restrictions or lower demand[9]. As highlighted, the labour market changes experienced during the pandemic are not captured in the SILC dataset, and based on estimates provided by EUROSTAT[10], EUROMOD randomly selected individuals from the SILC population to reflect these changes in the labour market. The estimates include these types of transitions:

- transition from employment to unemployment for employees and self-employed[11].
- transition from unemployment to employment.
- transition from employment and self-employment to the wage supplement scheme captured by a reduction in the hours worked.

The random allocation of the first two transitions, (i.e. the transition to employment or unemployment) is simulated by gender and education attainment, which is a proxy variable for skill[12]. Individuals that are affected by this shock are assumed to have a change in the number of months in/out of employment. The shock on the duration of the transition is not the same for everyone but varies based on the assumed weighted shares provided by EUROSTAT. However, the duration is also affected by the number of months individuals report to have earned an employment income in the SILC survey during the year. The total number of people affected by the labour market transitions is around 5,760 individuals out of

[8] Source: What are Equivalence Scales?. https://www.oecd.org/economy/growth/OECD-Note-EquivalenceScales.pdf

[9] Table A.1 in the Appendix highlights the share of workers simulated to be newly unemployed, with reduced hours and earnings and those not affected by the pandemic, by sector. The impact in the GVA described in section 2 and the assumed sectoral shock in the labour market will not necessary be inline given the different data sources. GVA is based on national accounts data; the unemployment/employment transition is based on LFS data and the transition to wage supplement scheme is based on administrative data.

[10] For more information about the data and methodology applied by EUROSTAT on the transition in/out of employment consult the following note https://ec.europa.eu/eurostat/documents/7894008/8256843/Methodological-note-2020.pdf/9a70fb55-ceb7-d25a-1b31-ab0c030095d2?t=1625228771763.

[11] The labour market transition estimates assume no change in self-employment.

[12] Table A.2 illustrates the shares of the labour market transitions to employment and unemployment by gender and educational level.

which 640 individuals are assumed to have worked at least one more month in 2020 (thus they are newly employed) and 5,120 individuals are assumed to have spent at least one additional month in unemployment (thus they are newly unemployed). The following table shows the assumed labour market transitions in relation to the duration, focusing on the additional number of months spent in employment or unemployment during 2020.

Table 1: The Duration of the Labour Market Transitions in 2020 (in terms of months)

Duration of the Labour Market Transitions			
Additional number of months in unemployment during the year		**Additional number of months in employment during the year**	
1 month	1,756 employees	2 months	340 employees
4 months	1,080 employees		
5 to 7 months	1,672 employees	11 months	300 employees
10 months	612 employees		

Source: Own calculations based on estimates from EUROSTAT.

Employment income, hours worked, and work-related benefits (for example fringe benefits) are then adjusted accordingly to reflect these labour market transitions.

Furthermore, as outlined above, the impact of the pandemic is also captured by modelling a reduction in the hours worked by a group of employees and self-employed as result of operational restrictions or lower demand. Consequently, these persons start to receive the wage supplement scheme. The wage supplement scheme is modelled within EUROMOD, and the beneficiaries are randomly selected based on administrative anonymised sectoral data obtained from Malta Enterprise Corporation whilst factoring the eligibility conditions of the scheme These individuals are assumed to work fewer hours depending on the sector they work in for the period of ten months[13]. Thus, their employment income derived from the SILC is adjusted to represent the presumed reduction in hours worked. Sectors that were severely hit by the pandemic, such as accommodation and food services sectors, which fall under the category of Annex A and Annex C, are assumed to work around 20 to 50 per cent of the average monthly hours. Whereas sectors such as manufacturing, which were also adversely affected by the pandemic and fall under the category of Annex B, are assumed to work around 50 to 70 per cent of their normal hours during the whole period[14]. The model also includes pensioners and students that work in the affected sectors and it is assumed that they can benefit from the scheme for the maximum period of six months as these cohorts were included in the eligibility criteria of the scheme from July 2020. Moreover, due to insufficient information, not all the elements of the scheme are being simulated, particularly, no distinction was made between employees and self-employed that are based in Gozo from those based in Malta.

The benefit entitlement is allocated based on the eligibility criteria of the scheme. The simulation in EUROMOD captures approximately 59,500 employees and 9,800 self-employed. When compared to the actual number of beneficiaries, as at December 2020, this amounts to 82.8 per cent of the employees and 83.0 per cent of the self-employed/self-occupied recipients[15]. Thus, the scenario described above is

[13] The simulation does not allow for double transitions, employees are either assumed unemployed or face a reduction in their hours worked.

[14] For the first four months, selected individuals that fall under the Annex A category work 20 per cent of their normal hours which increases up to 50 per cent in the remaining months. For the Annex B category, during the first four months, selected employees/self-employed work 50 per cent of their normal hours and in the rest of the months they work at a capacity of 70 per cent.

[15] Overall, EUROMOD is capturing a good representation of the number of beneficiaries of the wage supplement scheme, given we are randomly selecting individuals from the 2019 labour market population, which is less than that of 2018.

of course illustrative in nature. Within EUROMOD, the labour market transitions and the transition to the wage supplement scheme are run through the Labour Market Adjustment (LMA)[16] add-on[17].

For the purpose of this analysis, the study distinguishes between a scenario where the selected individuals are earning an income that is adjusted to reflect the reduction in working hours and another scenario where the persons affected are in receipt of the wage supplement. This allows the study to determine the effectiveness of Government intervention in terms of providing income protection to individuals when faced with an income shock. The following section provides a description of the scenarios considered.

3.3 Counterfactual Scenarios

The following three policy scenarios are considered**:**

- **Baseline Scenario:** is based on the 2020 tax and benefits policy rules prior to the Covid-19 pandemic. Thus, it does not include the unemployment shock and the Covid-19 wage supplement scheme.
- **Scenario 1**: incorporates two types of transitions; the 2020 ex post labour market outcome which mainly reflects the unemployment shock and the reduction in hours worked However, this scenario does not include the mitigating effect of the wage supplement scheme. Thus, comparing this scenario to the baseline, one can determine the scale of the income shock in response to the pandemic, eased by the automatic stabilisers, therefore the tax and benefits system of Malta, in relation to these transitions. The distributional impact of this scenario could be slightly overestimated as the additional unemployment benefit (one of the social measures) is not included in this analysis.
- **Scenario 2:** includes the shock of Scenario 1 and models the rolling out of the wage supplement. In this scenario the distributional impact following Government intervention in combination with the applicable eligibility conditions, are presented.

4. Empirical Analysis

4.1 Impact of Covid-19 on Poverty

This section presents the results of the outlined two policy scenarios in addition to the Baseline for the effects on poverty. Figure 4 shows the increase in the at-risk-of-poverty rate (AROP), for different cohorts of the population[18] when compared to the baseline scenario. The poverty line is kept fixed and equal to the baseline scenario. This will likely overestimate relative poverty in scenario 1 and 2, as both scenarios will probably face a decline in the poverty line[19].

[16] Within EUROMOD the results are produced through the TransLMA_mt policy which is run through the LMA add-on. The following link provides more information on LMA Add-on: https://euromod-web.jrc.ec.europa.eu/sites/default/files/2022-01/LMA_add-on_note_I4.0%2B.pdf.

[17] Table A.3 in the Appendix provides the risk by sector assumed for the unemployment shock and the transition to partial layoffs.

[18] The sub-groups of the population considered include: children (persons younger than 18), working age (persons aged 18 to 64), working age economically active (persons aged 18 to 64 who earn an income from employment/self-employment) and elderly (persons aged over 65).

[19] For comparative purposes, results of relative poverty are presented keeping the poverty line fixed with the Baseline.

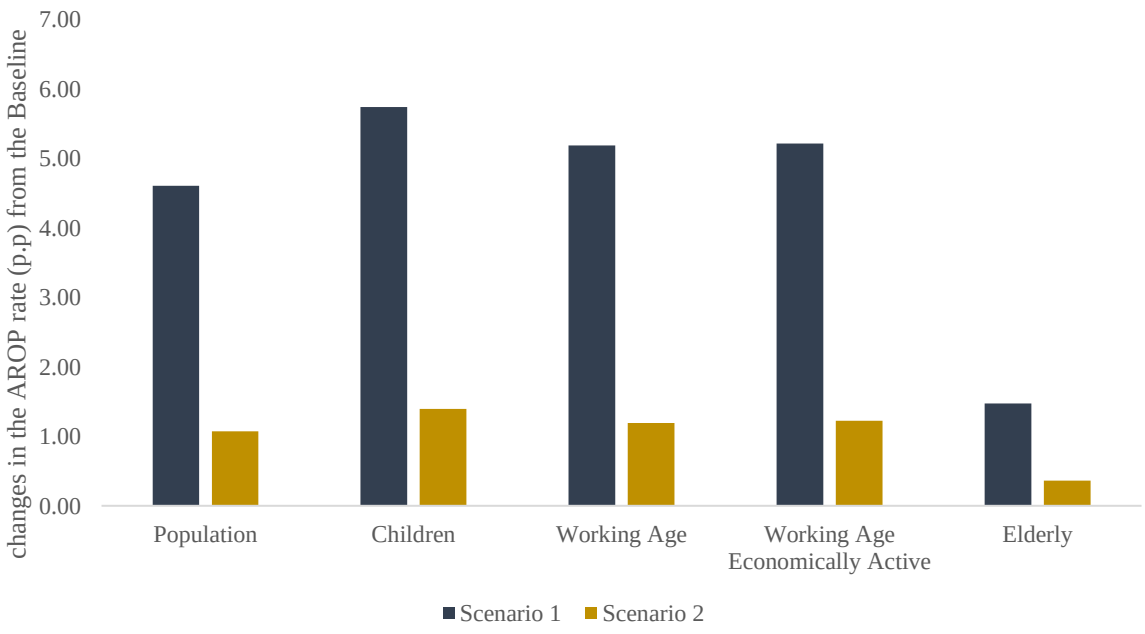
In Scenario 1, it is evident that the AROP increased in all cohorts. The impact of the pandemic alone without any compensation measures is evidently disruptive, with the poverty rate of the overall population increasing by 4.61 percentage points. Despite the partial cushioning effect of the automatic stabilisers, the loss in the employment income caused a significant number of households to fall below the poverty line. The economically active working age population face an increase of 5.22 percentage points in the AROP, as many active workers in sectors subject to the restrictive measures or lower demand experience unemployment or shorter working hours and thus lower income from employment.

The children cohort experience the largest increase in poverty risk, with a 5.74 percentage points increase in the AROP. It is evident that the loss of income of the parents is translating into an increase in the risk of poverty for children. Moreover, a portion of this group aged 16 and over that were working may also have been affected during the pandemic. As expected, the elderly recorded the lowest increase in the AROP (1.47 percentage points), as this cohort has a relatively lower work intensity.

Next, the analysis considers the impact of the wage supplement scheme (Scenario 2). Following the introduction of the wage supplement, the pandemic is still resulting in an increase in poverty due to the income shock, however the magnitude is lower when compared to Scenario 1.

The increase in the AROP in the overall population is around 1.07 percentage points relative to the baseline scenario. The mitigating effect of the scheme on the poverty rate is evident across all cohorts. Among the working age cohort, the wage supplement scheme is estimated to reduce the impact of the economic shock on the AROP to 1.19 percentage points, as opposed to an increase of 5.19 percentage points under Scenario 1. Similarly, amongst the working age population that is economically active, with the wage supplement scheme the increase in the AROP stands at around a quarter of that estimated in Scenario 1. Finally, the impact on the AROP for the children cohort is reduced from an increase of 5.74 percentage points under Scenario 1 to 1.39 percentage points under Scenario 2; thus confirming that working families were affected positively by this measure.

Figure 4: Impact of Covid-19 on the At-Risk-of-Poverty Rate (AROP)



Source: Own calculations using EUROMOD and 2019 EU-SILC data

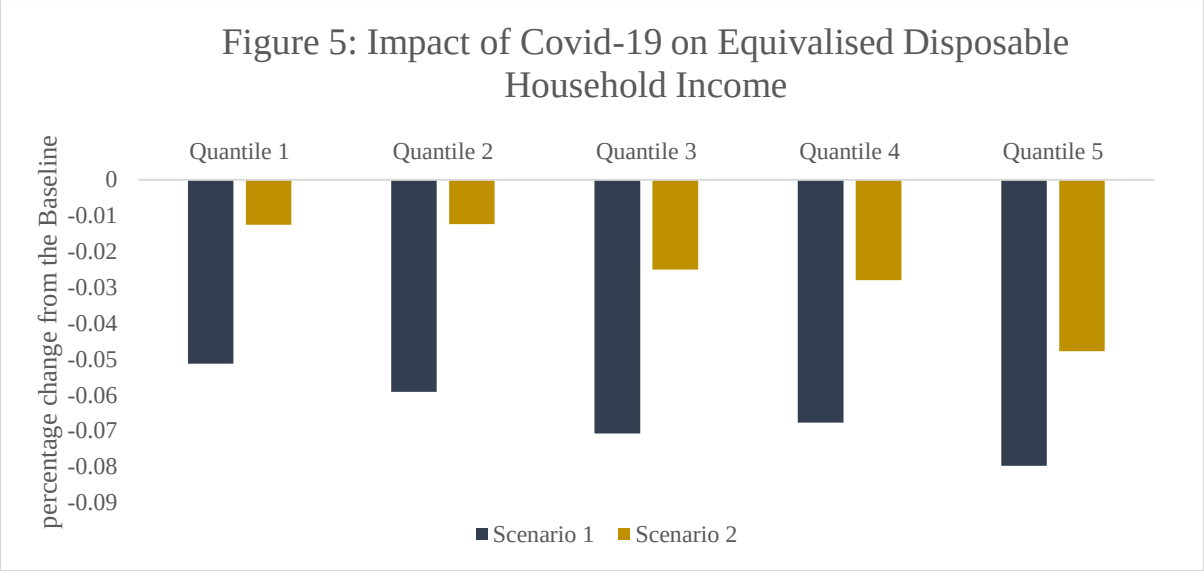
4.2 Impact of Covid-19 on Household Disposable Income

The loss in disposable income was decomposed by quantile to identify separately the distributional impact of each scenario considered in this study. Figure 5 identifies the distributional effect of the income shock under the two policy scenarios, when compared to the Baseline. Households are grouped into quantiles of disposable income equivalised for household size. In this analysis, quantiles 1 and 2 can be viewed as low-income earners, whilst the third and fourth quantiles are considered to be middle-income earners. Quantile 5 includes the highest-income earners.

Given that Scenario 1 assumes that a selection of employees and self-employed are working a fraction of their normal hours without receiving any support from Government, as expected, all income quantiles experience losses in their equivalised disposable income. The loss in disposable income is progressive along the income distribution. Household in the top quantiles are the most affected, as an increase in unemployment and a constant percentage reduction in their hours worked will decrease employment income by a much higher magnitude than a reduction among households at the bottom end of the distribution, whose hourly wage tend to be lower. This is also related to the fact that households at the top of the income distribution tend to have a higher work intensity. In addition, pensioners also constitute an important part of the low-income households which are not directly affected by the income shock. The loss in disposable income among the top quantile is of 8.0 per cent, while the income loss among the bottom quantile is of 5.1 per cent. The other quantiles experience a loss in disposable income at an average rate of around 6.6 per cent when compared to the Baseline scenario.

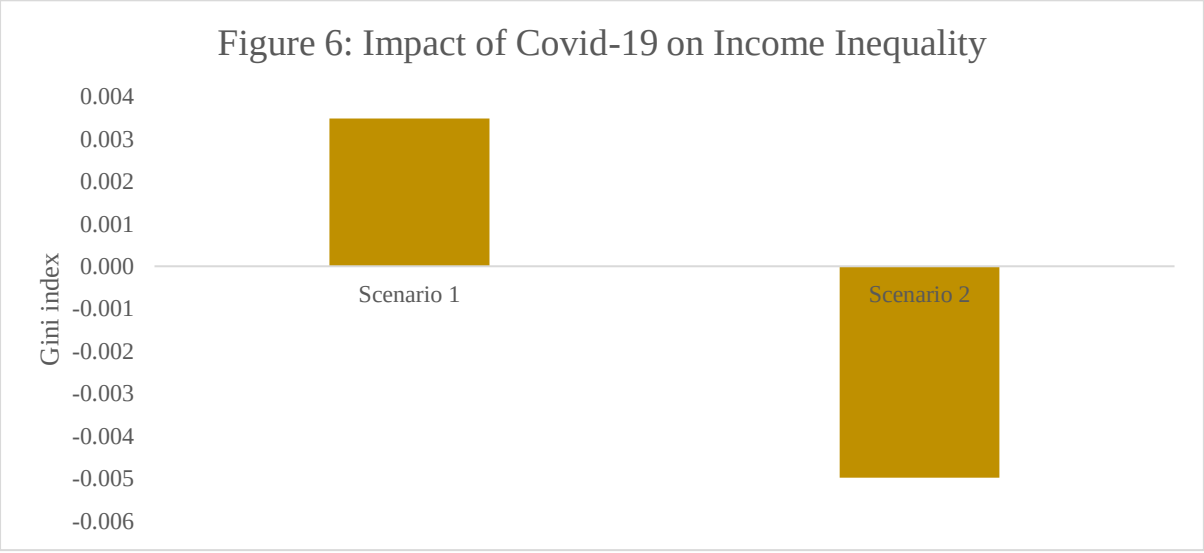
Under Scenario 2, the wage supplement scheme results in a smaller percentage income loss in the equivalised disposable income. However, the distributional effect of the income shock does not change substantially from Scenario 1, with the percentage change in disposable income being larger for the middle- and higher-income groups.

It is evident that the wage supplement has strong distributional implications that benefit most households in quantile 2 and quantile 3 of the distribution. The disposable income in quantiles 2 and 3 suffer a drop of around 1.2 per cent and 2.5 per cent when compared to the Baseline. When compared to Scenario 1, the decrease in income is more contained as the wage supplement scheme mitigates a decrease in the disposable income of 4.7 percentage points in quantile 2 and 4.6 percentage points in quantile 3. For the first quantile the scheme mitigates a decrease in disposable income of 3.9 percentage points, which could reflect a lower work intensity for this cohort when compared to the other quantiles. In addition, Quantile 4 and 5 also shows a decrease in the loss of disposable income of around 4.0 percentage points and 3.2 percentage points, respectively, when compared to Scenario 1. Given that households in the top quantile have higher earnings than other quantiles in the income distribution, the reduction in the negative income shock is less pronounced than the reduction observed in the lower quantiles, as the wage supplement does not entirely replace the loss in income. In fact, when compared to the Baseline, Quantile 5 recorded the largest decline in disposable income.



Source: Own calculations using EUROMOD and 2019 EU-SILC data

Finally, we also assess the impact of the pandemic shock and the wage supplement scheme on income inequality. Following the changes to the labour market and the reduction in hours worked, in Scenario 1, the Gini coefficient[20] increased by 0.0035, highlighting an increase in inequality. With the introduction of the wage supplement scheme, the Gini declined by 0.005 when compared to the Baseline and 0.0085 when compared to Scenario 1. This result reflects the fact that the decline in the disposable income of low-income households is relatively smaller when compared to high-income households. This occurs as the benefit rates under the wage supplement tends to replace a larger proportion of the income received before the pandemic for low-income groups, since the highest rate is equivalent to the minimum wage. Consequently, the economic shock is felt more strongly by higher income groups, since they experience a larger percentage decrease in their income, thus resulting in a decline in income inequality.



Source: Own calculations using EUROMOD and 2019 EU-SILC data

[20] Gini Coefficient also known as the Gini index is a measure of income inequality. It may take values ranging from 0 per cent, which implies perfect equality in the income distribution, to 100 per cent, which signifies absolute inequality.

5. Conclusion

As a result of the Covid-19 pandemic, the Maltese economy experienced a contraction of 8.3 per cent in GDP in real terms during 2020. To counteract the negative effects of the pandemic on the economy, the Maltese Government introduced several measures targeted to households and businesses, with the principal support measure being the wage supplement scheme.

Using EUROMOD, the distributional impact of Covid-19 on households in Malta in 2020 was examined, by analysing the increase in unemployment and the reduction in working time as a consequence of the pandemic, together with the impact of the wage supplement scheme. The data used in this study is the EU-SILC 2019. Due to limitations in the availability of the data, employees were transitioned to employment or unemployment by gender and education using distributional information on labour transitions from the LFS and administrative data, which estimates were provided by EUROSTAT. In addition to this labour market shock, it was assumed that a percentage of the labour force will be working on a reduced hours basis with lower earnings. The wage supplement scheme was also modelled within EUROMOD and the beneficiaries were randomly selected based on eligibility conditions of the scheme and administrative data provided by Malta Enterprise Corporation.

The limitations of the studies include:

- Given that there is a data lag, this study utilises the 2019 SLIC data with an income reference year of 2018. To overcome this limitation, the study randomly selects employees and self-employed that could have been affected by the pandemic based on survey and administrative data sources. As outlined, the randomisation is applied by gender and education for transition to unemployment and employment and it is applied by sector for the transition to reduced hours basis. Thus, the results are associated with a degree of uncertainty as the randomisation is not being applied based on an extensive set of variables.
- One of the assumptions of this study is that employees and self-employed who are beneficiaries of the wage supplement scheme are assumed to work on reduced hours basis in Scenario 1, where there is no Government intervention. This assumption may be underestimating the impact of Scenario 1, as the number of employees who would have become unemployed or persons who would have closed their business would have likely been much higher if the Government did not intervene. The EUROMOD model is static and thus does not capture behavioural responses of individuals.
- The EUROMOD model is capturing 80% of the beneficiaries of the wage supplement scheme thus, the distributional impact may be underestimated.
- Due to insufficient data, some elements of the wage supplement scheme, mainly the distinction between Gozitan and Maltese employees and self-employed, could not be captured.

Our results show that the labour market transitions brought about by the Covid-19 increased the risk of poverty for the overall population, with the economically active working age population and children cohorts being affected the most. However, the introduction of the Wage Supplement Scheme dampened considerably the increase in poverty. Nonetheless, households still experienced a decline in their equivalised disposable income but, the scheme partially cushioned the income shock for households from a steeper decline. Our analysis indicates that middle- and higher- income earners experienced the largest income loss, since they tend to have higher work intensity and thus were more subject to the labour market effects of the pandemic, whilst having higher incomes, the wage supplement scheme only provided partial income compensation. The distributional effect of the income shock does not change substantially with Government intervention. In addition, income inequality decreases through the introduction of the scheme. Thus, overall, our preliminary analysis shows that the wage supplement scheme was essential to provide considerable income protection to households against the disruptive

economic and social effects of the pandemic, as well as to partially mitigate against the risk of poverty, especially among children and economically active working age individuals.

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7. Appendix

Table A.1: Share of Workers by Industry relative to Total Employment, %

	Newly Unemployed	Reduced Hours and Earnings	No Change
Agriculture, forestry and fishing	0.0%	0.0%	100.0%
Mining and quarrying, manufacturing, electricity, gas and water supply	2.2%	41.2%	56.6%
Construction	1.7%	13.2%	85.1%
Wholesale and retail	2.2%	54.1%	43.7%
Accommodation and food service activities	3.9%	64.7%	31.3%
Transportation and communication	2.1%	34.8%	63.1%
Financial and insurance activities	1.3%	0.0%	98.7%
Real estate, Professional, scientific and technical, administrative and support service activities	0.9%	38.6%	60.5%
Public Administration and defence; compulsory social security	0.7%	0.0%	99.3%
Education	2.1%	8.3%	89.6%
Human health and social work activities	2.6%	0.0%	97.4%
Arts, entertainment and recreation, other service activities, activities as household as employer	2.7%	40.4%	56.9%

Note: The table highlights the share of workers in each sector which are simulated to be newly unemployed, with reduced hours and earnings and with no change. The sample includes individuals whose number of months receiving employment or self-employment income is positive.

Source: Own calculations based on estimates from EUROSTAT for the newly unemployed and Malta Enterprise for individuals with reduced hours and earnings.

Table A.2: Share of New Employees and Unemployed by Gender and Educational Level relative to Total Employment, %

	Employment		Unemployment	
	Males	Females	Males	Females
Lowest educational attainment	0.0%	0.0%	0.6%	0.9%
Middle educational attainment	0.0%	0.3%	0.7%	0.0%
Highest educational attainment	0.2%	0.2%	0.0%	0.0%

Note: The results represent the labour market transitions to employment and unemployment a percentage of total population.

Source: Own calculations based on estimates from EUROSTAT.

Table A.3: Assumed Distribution of the Transition to Unemployment and Partial Layoffs, by Sector[21]

Sector	Risk
Agriculture, forestry and fishing	Low
Mining and quarrying, manufacturing, electricity, gas and water supply	High
Construction	Low
Wholesale and retail	High
Transportation and communication	Medium
Accommodation and food service activities	High
Financial and insurance activities	Low
Real estate, Professional, scientific and technical, administrative and support service activities	Medium
Public Administration and defence; compulsory social security	Low
Education	Low
Human health and social work activities	Low
Arts, entertainment and recreation, other service activities, activities as household as employer	High

Note: Partial Layoffs refers to the number of employees and self-employed that are transitioned to the wage supplement scheme and are working on reduced hours basis.
Source: Own calculations based on estimates from EUROSTAT and administrative data from Malta Enterprise.

[21] Includes both the impact on employees and self-employed