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THE NATIVE MALTESE POPULATION: PROJECTIONS AND IMPLICATIONS ON THE LABOUR SUPPLY

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Policy Note

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The projections in this Policy Note do not necessarily align with standard demographic methodologies and should therefore not be construed as official demographic projections. Readers should interpret this Policy Note as a product of research from an economic perspective which is intended to provide a short brief on current issues in Malta.

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Abstract

In 2023, Malta's population reached 563,443 people of which 28.1% were of foreign nationality and mostly of working age. Meanwhile, the share of native Maltese in the total and working age population continued to decline. This Policy Note examines trends in the fertility rate, mortality rates and migration for both Maltese and foreign residents. In the absence of demographic projections specifically covering the native Maltese population, this study presents three scenarios assessing the potential evolution of the native population based on the aforementioned factors. Results suggest a persistent decline and ageing of the native Maltese population due to low fertility and mortality rates. Such findings imply a continued reliance on the contribution from foreign workers to sustain the labour supply as the native working age population shrinks and participation rates remain well below that of foreigners.

JEL classification: E27, J11, J13, J20

Keywords: Population, Demographic factors, Fertility rate, Labour Supply, Labour market participation

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Executive Summary

The population in Malta has increased rapidly in recent years primarily due to growth in the foreign population mostly within the working age bracket. At the same time, the native Maltese population has been declining due to low fertility rates, and ageing driven by falling mortality rates. This Policy Note examines how the native Maltese population is expected to evolve based on fertility, mortality and migration factors and its implications for the labour supply in Malta.

A review of these demographic factors shows that foreign migration played a key role in increasing the population during the past decade with annual net migration flows reaching around 20,000 people in recent years. Net migration of Maltese natives has also been positive since 2018 although to a lesser extent than migration of non-natives. The total fertility rate in Malta has been declining since 2015 and stood at 1.06 in 2023 below both the European Union (EU) average of 1.38 and the required replacement rate of 2.1 children per woman. However, the fertility rate among Maltese women specifically stood at 1.16 in 2023 which implies that the total fertility rate measure is not entirely reflective of the trend within the native population. Mortality rates of both males and females have generally declined over the past decade and data shows instances where the mortality rate of foreigners in younger age groups is slightly lower than that of Maltese counterparts. Such trends have led to a larger population of foreigners in Malta and a smaller and older population of natives over time.

The native Maltese population is projected under three scenarios based on expected trajectories of fertility, mortality and migration:

- The baseline scenario assumes that the dynamics of mortality and fertility rates will change in line with Eurostat's assumptions in the EUROPOP demographic projections, while migration of native Maltese is assumed to remain in line with that observed in recent years. In particular, this scenario is consistent with an increase in the native fertility rate.
- Scenario 1 projects the native population under the same assumptions as in the baseline but keeps the fertility rate of Maltese women unchanged at the current level.
- Scenario 2 assumes that in addition to an unchanged fertility rate as in Scenario 1, migration levels of Maltese natives is zero, thereby projecting the native Maltese population based solely on natural factors.

In all scenarios, the native Maltese population is projected to decline. Under the baseline scenario, the native population is expected to reach a level of around 350,000 people by 2050, down by around 14.0% from the level in 2023. Scenarios 1 and 2 predict an even steeper decline in the population of Maltese natives because of an unchanged fertility rate.

The decline in the total population of native Maltese has direct implications on the native working age population and hence, on the labour supply. Since foreigners are expected to continue entering Malta's workforce, albeit at a more moderate rate than in previous years, their higher participation in the labour

market compared to Maltese natives suggests that growth in the labour supply, at least in the medium-term, will continue relying on the contribution from foreign nationals.

One key takeaway from this Policy Note is the importance of understanding the demographic characteristics of Maltese natives with particular attention paid to the trend in the fertility rate of Maltese women and not the total fertility rate. Efforts to counteract this trend should be in favour of balancing family and career choices of both men and women without undermining the participation of Maltese natives in the labour market. Furthermore, decreasing Malta's reliance on labour by enhancing the productivity of the workforce and shifting to a more capital-intensive economy may moderate population growth by slowing down net foreign migration flows.

Introduction

Malta has experienced significant demographic changes in recent decades, with strong growth in the population mainly driven by a surge in the foreign population that profoundly impacted the country's demographic structure. In 2023, Malta's population reached 563,443 people – 31.0% above the level in 2000. This increase mainly reflects a rise in the foreign population of working age. Indeed, the share of foreign nationals in the total working age population rose from 2.5% in 2000 to 31.8% in 2023 since most foreigners tend to migrate to Malta to participate in the labour market. In view of the significant impact of foreign migration on the population in Malta, the developments in fertility and mortality rates among Maltese natives, which are the natural factors that shape a population, have been somewhat masked and thus, developments in the native population remain uncertain. Furthermore, as shown in Borg (2019), foreign workers have a very short length of stay in the labour market, therefore, the role of Maltese natives in the working age population and the workforce remains central in sustaining the labour market.

Such developments in the total and working age population are highly relevant to our understanding of the labour market as well as the Maltese economy in general. The Central Bank of Malta (the Bank) publishes quarterly forecasts of key economic variables, including employment growth, the unemployment rate, and the labour supply. These projections are based on a cohort model of labour supply, as outlined in Rapa (2019) which projects the total labour force in five-year age groups by gender. However, this approach does not differentiate between Maltese natives and foreign residents, despite their significantly distinct behaviour and length of stay in the labour market. Thus, recent demographic trends shaping Malta's labour supply may not be fully represented in these projections as the impact from foreign migration flows dominates.

The current EUROPOP demographic projections provided by Eurostat include a no migration scenario however, they still lack a proper decomposition of the foreign and native populations in Malta. By decomposing population projections, the labour market can be analysed according to the behaviour of the different populations. Since foreign migration is largely demand-driven and is expected to moderate in view of recent policies, understanding how the current trends in fertility, mortality and migration influence the native Maltese population will provide insight on future developments in the total population as well as the working age population and labour supply.

The first question of this Policy Note looks into the recent demographic trends of the population in Malta with an emphasis on the differences between native and foreign residents. Drawing on the methodology outlined in Antunes et al. (2023), the second section shows a long-term projection of the native Maltese population based on fertility rates, mortality rates and migration flows of Maltese persons to demonstrate the evolution of the native population without foreign migration. Accompanying the baseline projection are two scenarios with a different assumption on Maltese fertility rates and migration of natives. Finally, the third question shows how the baseline projection of Maltese natives is incorporated into the Bank's labour supply model. This shows how the working age population, labour supply and participation rate

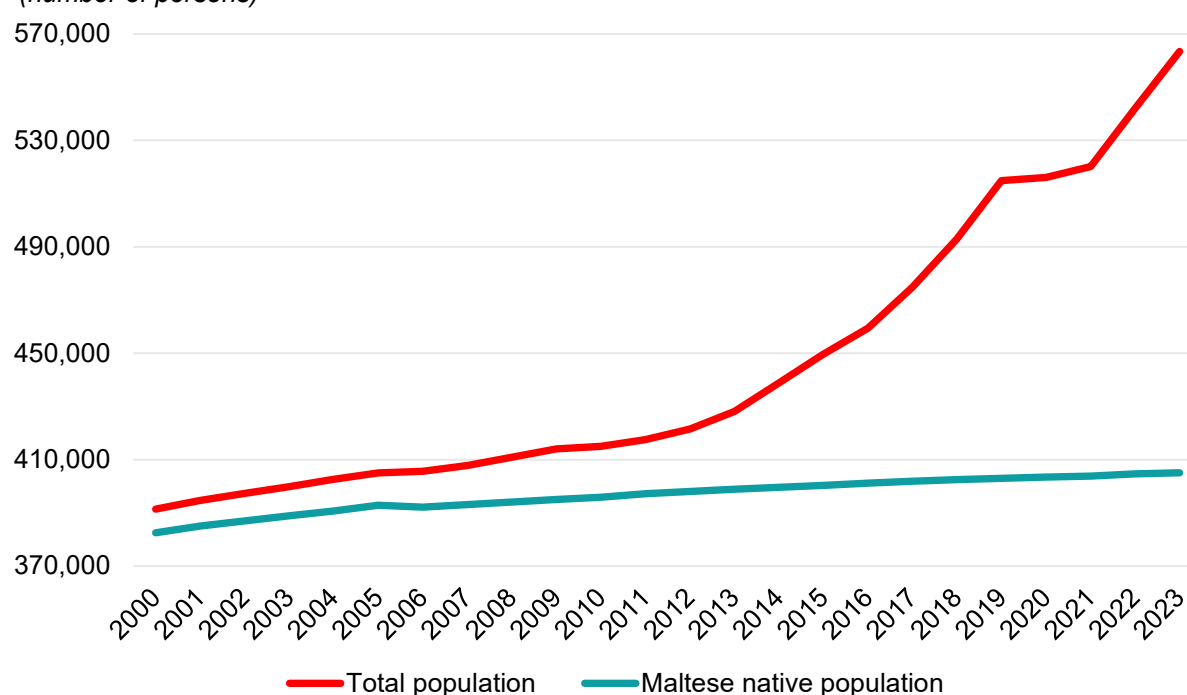
are expected to change given expected medium-term developments in the native Maltese population while also accounting for the different degree of labour market participation between Maltese and foreign workers.

1. How has the population in Malta developed over time?

The total population in Malta has undergone rapid growth, especially during the past decade. The population in the year 2000 stood at 391,415 persons, which increased to 414,989 by 2010. Over the period 2010 to 2019, the population increased sharply rising by almost 24.0% to 514,564. The level stabilised somewhat during the peak of the pandemic years in 2020 and 2021, before spiking up again in 2022 and reaching a level of 563,443 persons in 2023. (Chart 1). Meanwhile, the native Maltese population reached a level of 405,075 persons in 2023, increasing by almost 6.0% over the year 2000 and by just 2.3% from 2010.

Chart 1: Population level in Malta

(number of persons)

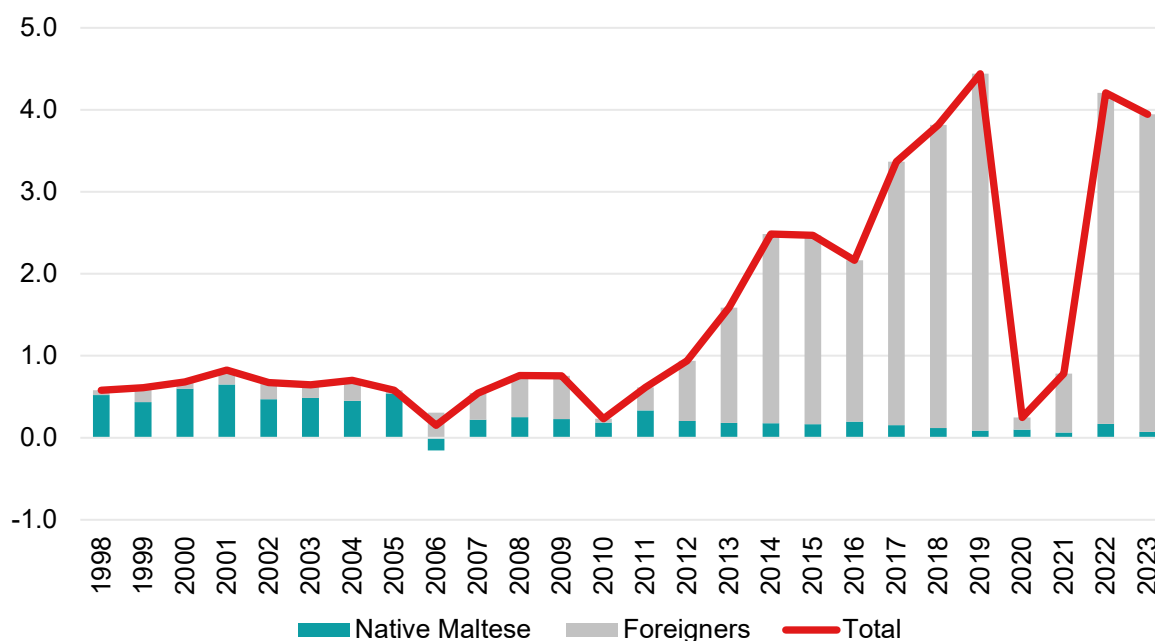


Source: Eurostat, NSO.

Chart 2 shows that the population was largely driven by strong contributions from growth in the foreign population particularly during the past decade. The highest growth during this period was reached in 2019 when the population grew by 4.4% with the foreign population contributing almost entirely to this increase. In the following years, growth decelerated due to a lower contribution from the foreign population as a result of restrictions on the movement of people during the pandemic. However, population growth picked up again in 2022 and 2023 reaching rates of 4.2% and 3.9%, respectively. The contribution from the native Maltese population during the past ten years was very low, averaging around 0.1 p.p. to total growth. This implies a sharp deceleration in the increase of the native population in contrast to strong net foreign migration flows.

Chart 2: Population growth

(% growth, p.p. contribution)



Source: Eurostat, NSO.

Developments in the structure of the population

The population pyramids for the year 2000, 2013 and 2023 are shown in Charts 3-5. These show the structure of the population in terms of the share of males and females in five-year age cohorts and by nationality (native Maltese and foreign) in the total population. The population pyramids visualise the developments in the natural and physical drivers of the population over the past two decades.

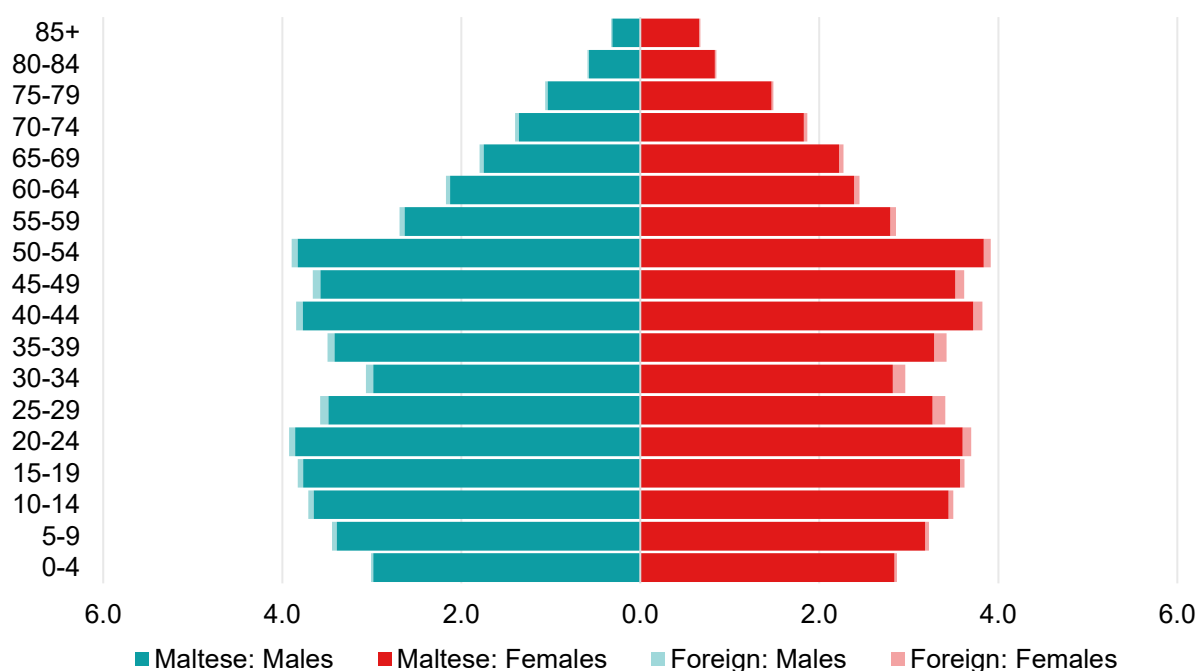
In the year 2000, the total population in Malta stood at 391,415 persons, of which 97.7% were of Maltese nationality and the rest were foreign (Chart 3). Chart 3 also shows that the foreign population is primarily of working age, that is, aged between 15 and 74² and consisted of just 2.5% of the total working age population in Malta.

The cohorts with the largest share in the population were those within the 5-29 and 35-54 age groups for both males and females. Together, these made up 65.6% of the total population while young children (0-4 cohort) and people aged over 74 comprised 5.9% and 5.0%, respectively.

² The definition of the working age population used within this Policy Note is standard across National Central Banks (NCBs) within the Eurosystem in the transmission of macroeconomic projections.

Chart 3: Total population structure - 2000

(percentage of total population)



By 2013, the total population increased by 9.4% reaching a level of 428,156 persons. Chart 4 indicates a higher share of the foreign population in the total population, especially in the 20-44 age group. In fact, the foreign population made up 6.8% of the total population and 7.4% of the total working age population. This means that the share of foreigners in the total population and the total working age population increased by around 4.6 p.p. and 4.9 p.p. respectively from 2000.

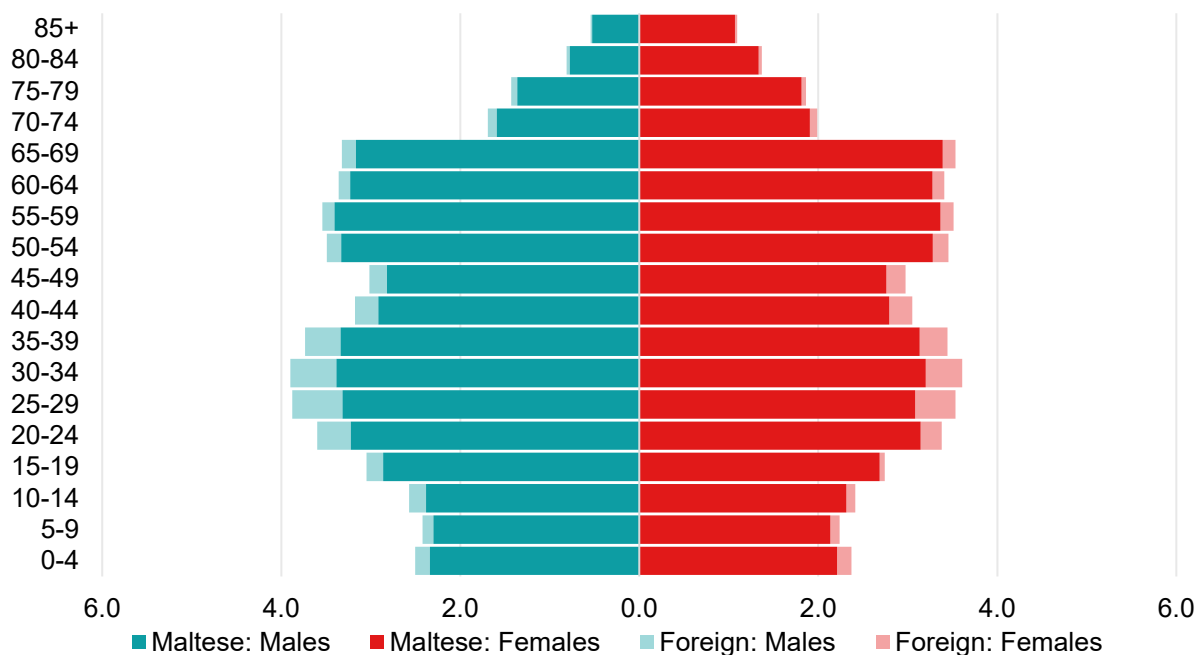
The cohorts with the largest share in the total population were those within 20-39 and 50-69 age groups. These held a share of 29.1% and 27.6% respectively, with males holding a slightly larger share in the former partly due to a larger share of foreign males in the total foreign population.

Meanwhile, the share of the older cohorts increased when compared to that in 2000. Indeed, the share of people aged 70 and over stood at 10.8% from 8.3%. Females within this age group held a larger share in the total population than males by 1.8 p.p. which is reflective of the lower mortality rates of females (see sub-section on mortality rates).

The population pyramid of 2013 also highlights a decline in the share of infants and children when compared to the population structure in 2000, as shown by the bars of the 0-4 and 5-9 age cohorts. Together, these cohorts consisted of 12.5% of the total population in the year 2000 while this fell to 9.5% in 2013. This decline was due to a lower share of Maltese-born children in the population while the share of foreign infants and children rose during this period.

Chart 4: Total population structure - 2013

(percentage of total population)



Source: NSO.

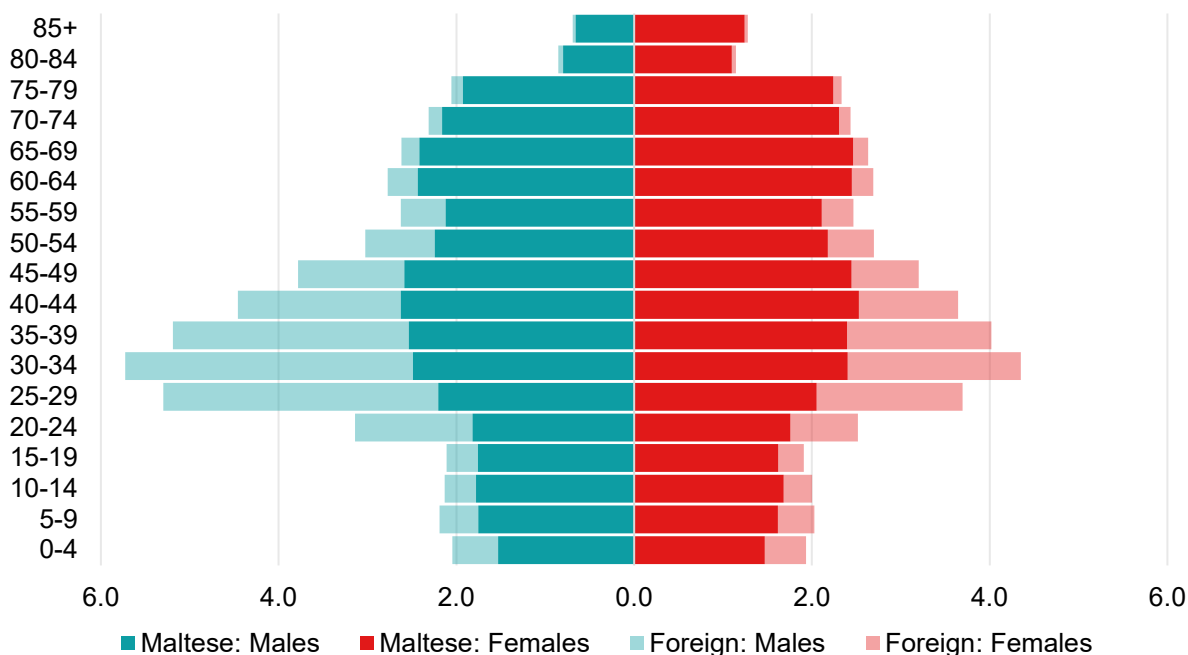
Chart 5 shows a remarkable transformation in the shape of the population pyramid from those of 2000 and 2013. In 2023, the population reached 563,443 persons, up from 428,000 in 2013. By 2023, more than a quarter of the population was of foreign nationality.

The most remarkable transformation occurred in the share of foreigners within the 20-54 age group, which became dominant by 2023. In contrast, the native Maltese population in the population pyramid is typical of an ageing population, with a relatively low share of infants and children and a relatively high share of older persons.

Indeed, the proportion of older persons in the total population continued to increase when compared to 2013. Moreover, the share of females in older cohorts continues to surpass that of males with women aged over 74 holding a share of 4.8%; 1.2 p.p. higher than that of men. In contrast, the share of Maltese infants and children (0-4 age group) declined while the share of foreign children continued to increase. Indeed, the share of Maltese children fell by 1.6 p.p. compared to 2013 which led to a lower overall proportion of young persons in the total population.

Chart 5: Total population structure - 2023

(percentage of total population)



Source: NSO.

The population pyramid in Chart 5 provides further evidence of economic migration into Malta, especially since the largest share in the total foreign population is found in the 25-39 age cohort. Indeed, almost 90% of the 158,368 expatriates in Malta in 2023 were aged between 15 and 74, making up slightly more than 31.0% of the total working age population in Malta.

Moreover, Chart 5 shows a larger share of males than females in all cohorts of the foreign population, except for the 75+ cohorts where the shares are equal. Research shows that gender differences do impact the decision and process of migration (World Migration Report, 2024 & Anastasiadou, 2024), however, in the case of Malta this could partly be due to a higher demand for foreign workers in male-dominated industries over the past few years, such as construction and food and accommodation services.

Despite the large share of persons aged between 15 and 74 in the foreign population, the share of foreign persons beyond working age remains small which further reinforces the fact that foreigners in Malta settle for a short period of time to work and then re-migrate as documented in the analysis of the length of stay of foreign workers in Borg (2019).

The population pyramid in Chart 5 illustrates a high concentration of Maltese natives in the 30-49 and 60-79 cohorts reflecting the ageing of the Maltese population driven by low mortality and fertility rates. The ageing phenomenon is also reflected in the Maltese workforce. The share of Maltese individuals aged over 50 in the Maltese working age population stood at 42.3% in 2023 when compared to 33.7% and 41.2% in 2000 and 2013, respectively. This trend has been partly masked by the strong inflows of foreign workers of younger age as highlighted in Grech (2020) which helped in balancing the structure of the working age population by counteracting the ageing of the Maltese.

Migration

Chart 6 shows that net migration of Maltese natives has been consistently positive since 2018 but is significantly smaller than net migration of foreigners (Chart 8).³

Chart 6: Maltese migration flows

(number of persons)

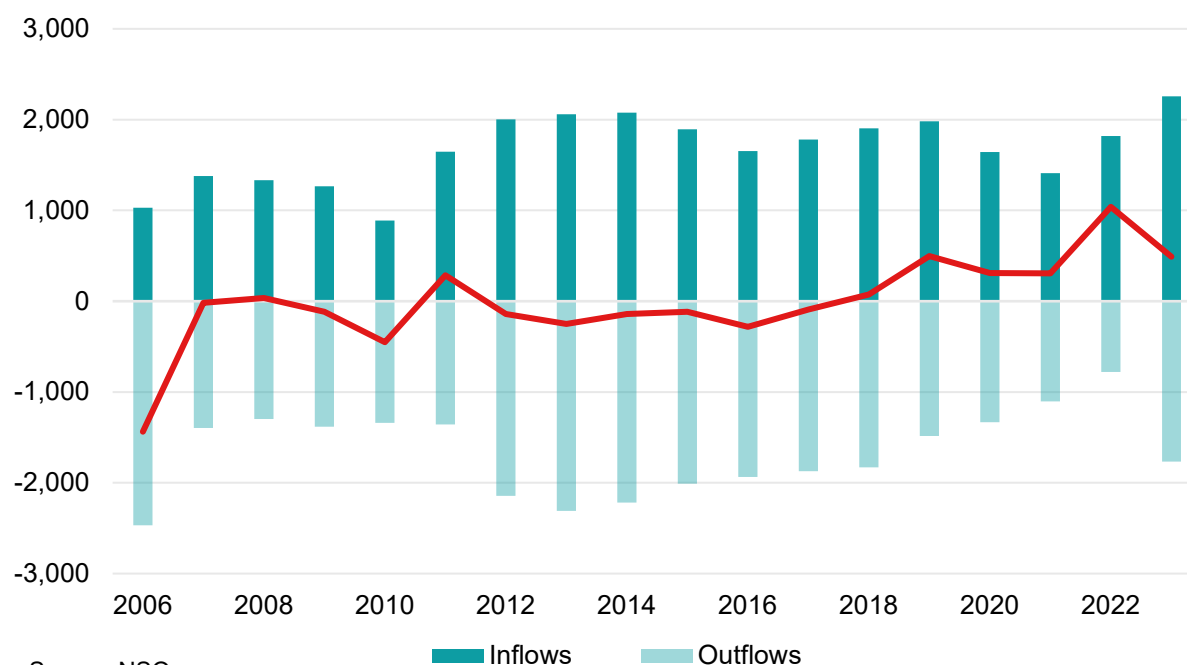
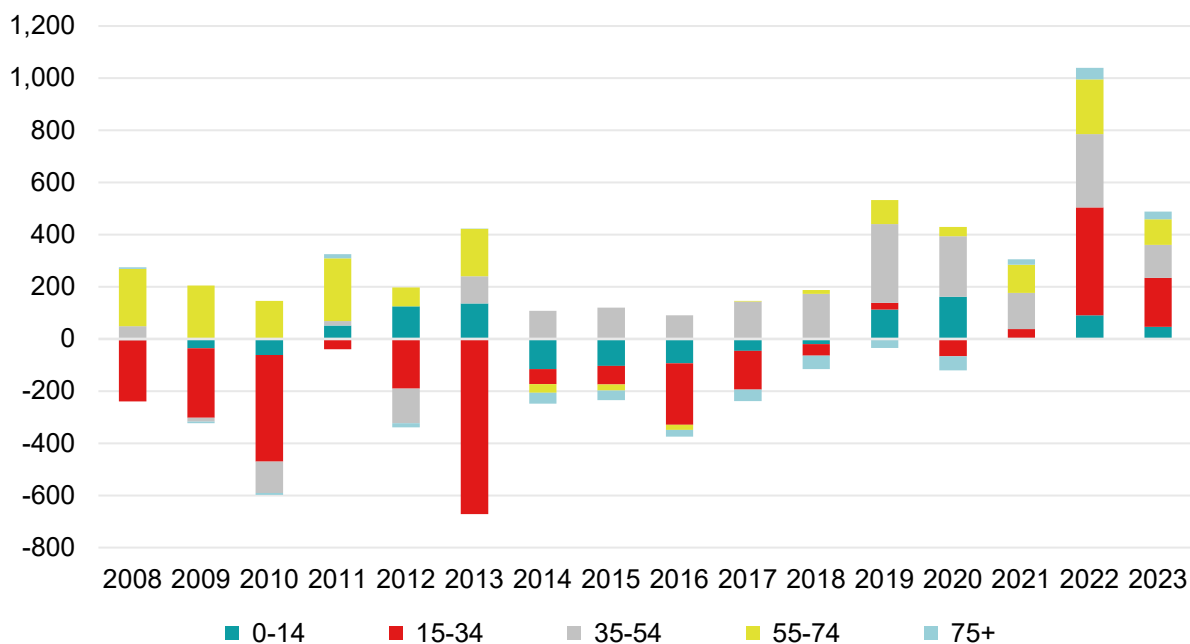


Chart 7 looks into the dynamics of Maltese net migration in greater detail by decomposing these flows into broad age groups. Until 2017, the largest net outflows occurred in the 15-34 age group, which is indicative of younger persons leaving the country to perhaps find better study and work opportunities abroad. At the same time, the 35-54 and 55-74 age cohorts have been generally positive, indicating that Maltese persons typically tend to return to Malta following relatively short periods of study or work abroad. Since 2019 however, net migration flows have turned positive across all age groups under the 75+ cohort, even among the 15-34 age cohorts, that traditionally had negative flows.

³ Data on migration of Maltese natives should be interpreted with caution as this is based on interpolations of two census data points corresponding to 2011 and 2021.

Chart 7: Net migration of Maltese by broad age group
(number of persons)

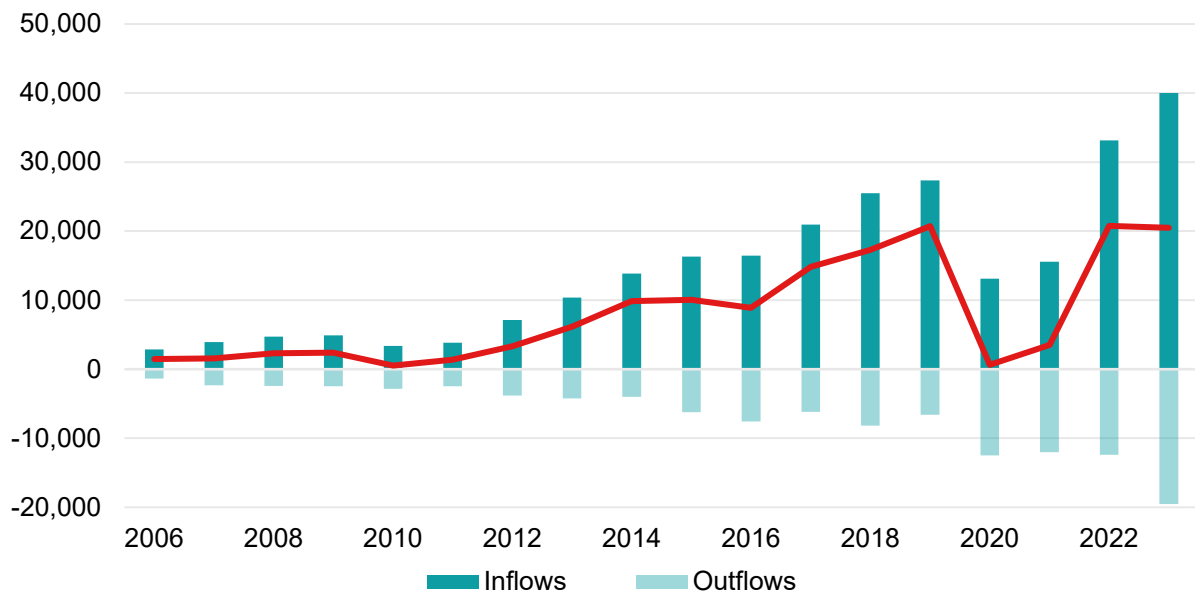


Source: NSO.

On the other hand, net migration of foreigners has been trending upwards in the years leading to 2019 (Chart 8). These declined sharply during the pandemic in 2020 and 2021 due to lower inward and higher outward migration. Net migration flows of foreigners picked up again in 2022, broadly reaching the net migration level in 2019 of approximately 20,000 persons and stood around this level in the year after. In 2023, both inflows and outflows increased from the year before, the latter further suggesting a short length of stay of foreigners in Malta in line with that documented by Borg (2019). As indicated by the population pyramids, net foreign migration flows in Malta are mostly persons of working age.

Chart 8: Foreign migration flows

(number of persons)



Source: NSO.

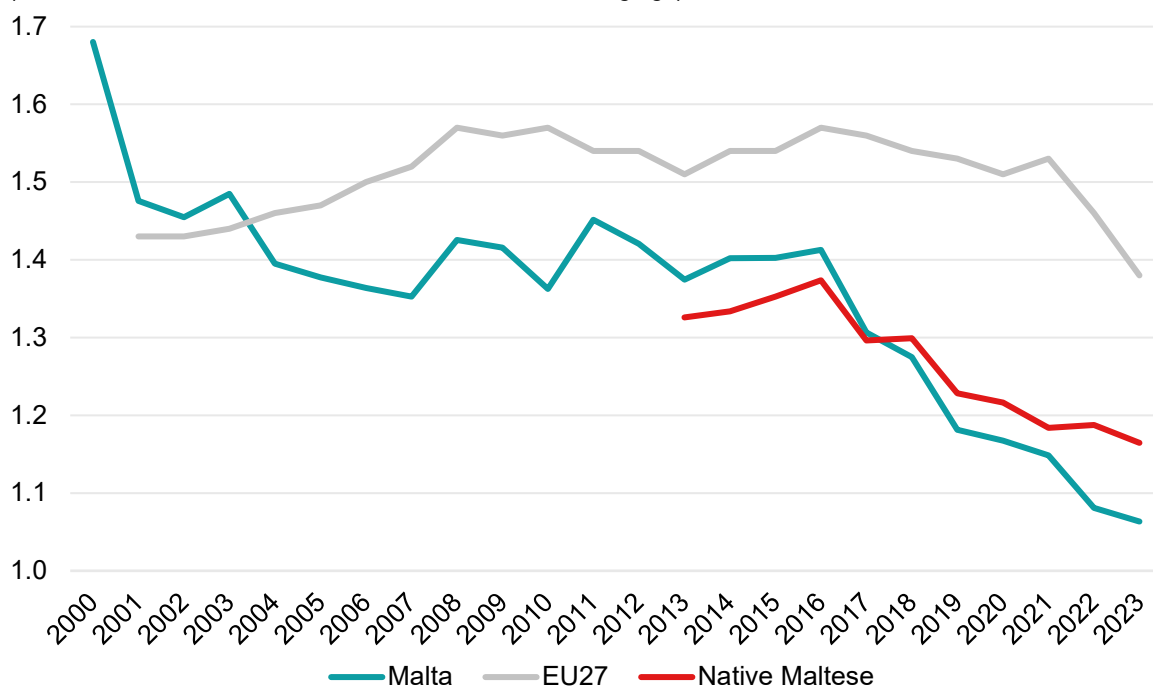
Fertility rate

The developments at the bottom of the population pyramid are partly tied to changes in the fertility rate, that is, the average number of children a woman is expected to birth during her lifetime of child-bearing age. Chart 9 shows that the total fertility rate in Malta stood at an average of 1.4 from the early 2000s until 2016 before declining sharply to 1.1 in 2023. The divergence from the EU average continued to increase following the steep decline in the mid-2010s as the former remained relatively stable at around 1.5 children per woman, albeit still below the required replacement rate of 2.1.

Chart 9 also looks specifically at the fertility rate of native Maltese women. This also shows a declining trend in the past decade, albeit less prominent than that exhibited by the total fertility rate. Indeed in 2023, this stood at 1.2 which broadly reflects one child per Maltese-born woman of childbearing age. This implies that the child-bearing decisions and preferences of foreign women are the main driver behind the fall in the total fertility rate in Malta.

Chart 9: Fertility rate

(mean number of children born to a woman of childbearing age)



Source: Eurostat, NSO.

The causes behind the declining fertility rate in Malta are diverse and range between increased access to education and career opportunities for women, leading to delayed childbearing and smaller family sizes. Studies exploring the fall in native fertility rate in Malta are quite limited. Micallef (2018) suggests that a drop in the fertility rate in Malta may be one of the factors behind the increase in the female participation rate in the labour market, while Balzan (2006) suggests that there might be a two-way relation between fertility and participation rates. Empirical literature has found that globally, there tends to be a negative relationship between income levels and fertility rates, at least at the start of a country's development. As countries continue to develop, they tend to enter into a phase that exhibits a negative relation between female participation and fertility rates. However, Doepke et al. (2022) show that recently, the empirical relationship between women's participation and fertility rate has either flattened or even reverted in some economies. This means that some countries have been successful in making women's family and career choices compatible namely through family-friendly policies, the increased involvement of fathers, adapting social norms to a more modern societal role of men and women and ensuring flexibility in labour markets. This shows that reversing the downward trend in Malta's fertility rate may be possible by adopting a similar approach.

Mortality rates

Charts 10 and 11 show mortality rates of Maltese natives and foreigners, respectively, by cohort for the years 2013 and 2023. In general, and as expected, mortality rates among older cohorts are higher for both groups of the population. However, death rates of young foreigners are slightly lower than that of Maltese natives. This could reflect the fact that most of the inward migration that occurs is based on

economic grounds with foreigners migrating to Malta specifically to join the labour force. This would imply that in general, foreigners joining the Maltese workforce would enjoy better state of health than the Maltese population average, which includes persons who might not be fit to work. Furthermore, male mortality rates are higher than those of females especially within older cohorts for both foreign and Maltese natives due to an overall higher life expectancy among females.

Over the past decade, mortality rates have largely declined in line with trends found in most advanced economies driven by better quality and access to healthcare, changes in health-related behaviours and attitudes as well as socio-economic policies, amongst others (Cutler and Meara, 2001). This decline is slightly stronger among females which further reinforces the higher life expectancy when compared to males.

Chart 10: Maltese mortality rates 2013 & 2023

(number of deaths per 1000 people)

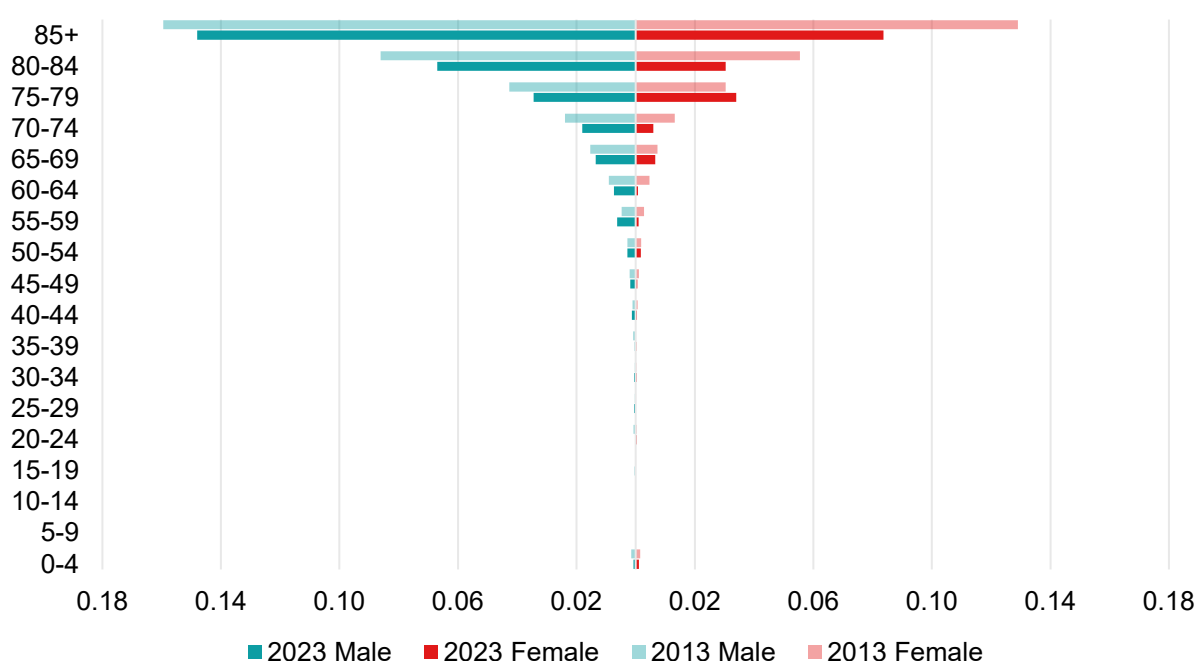
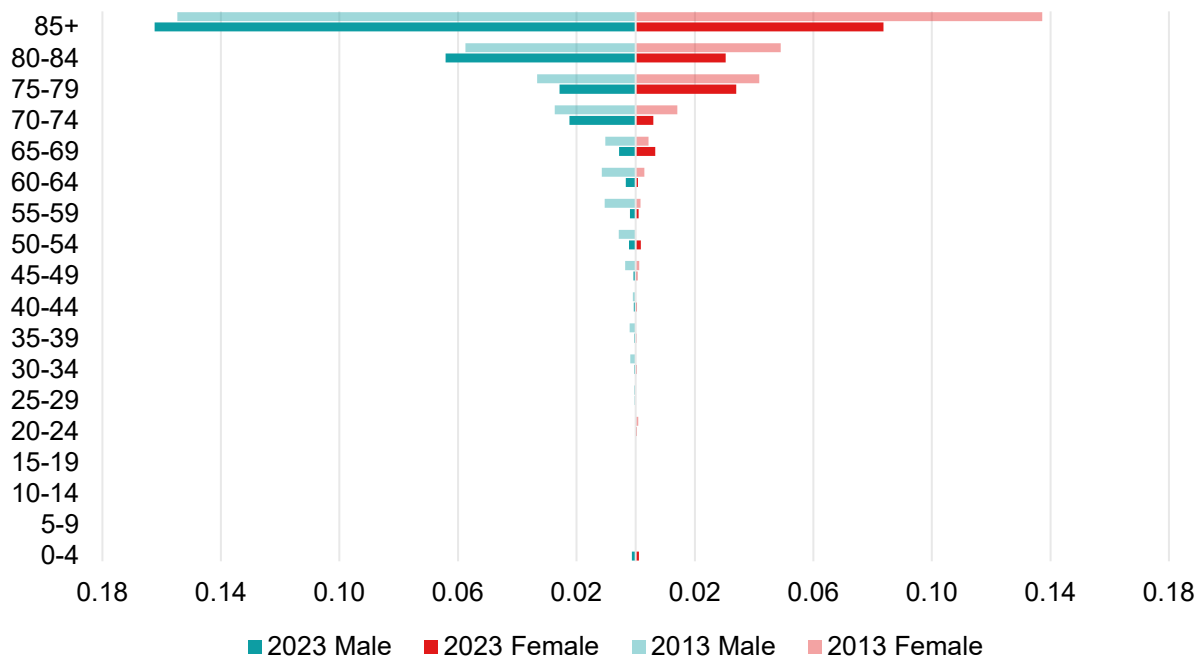


Chart 11: Foreign mortality rates 2013 & 2023

(number of deaths per 1000 people)



Source: NSO.

2. How is the Maltese native population projected to evolve?

The observed trends in the determinants of the size and structure of the population give rise to questions about how these will shape Malta's population in the future. The previous section showed that the foreign population in Malta is largely made up of persons of working age that migrate for economic reasons and many stay in the country for a relatively short period of time. In contrast, the Maltese native population is primarily determined by births and deaths, with migration playing a lesser albeit still relevant role. Therefore, a projection of the native Maltese population without foreign migration is crucial for examining the far-reaching implications on the labour market and the macroeconomy.⁴

The methodology of the projection follows closely that of Antunes et al. (2023) which utilises the projected paths of fertility, mortality and net migration in an equation to project the population level by age and gender. In this framework, the population is projected in five-year age cohorts, accounting for the transition of persons having survived from one cohort to another as they age. The underlying assumption of the approach used by Antunes et al. (2023) is homogeneity in age distribution, mortality and fertility across cohorts since it is assumed that 20% of each five-year cohort is of the same age and all ages in a cohort share the same mortality and fertility rate.

Since age-specific mortality and fertility rate data for Maltese natives are available, the approach adopted here projects the Maltese population in single years of age, thereby relaxing the homogeneity assumption. Following the rationale in the equation employed by Antunes et al. (2023), first, mortality rates are applied to the population level of each age to calculate the number of persons that survive. Second, the number of infants born to surviving women of child-bearing age during the year are added to the population in the following year. Third, the net migration flow is added to the projected level of the population. Given the considerable uncertainty surrounding developments in the fertility rate and future Maltese migration, three scenarios that differ across these dimensions are provided.

- 1) In the baseline scenario, the expected trajectory of age-specific fertility and mortality rates evolves in the same way as assumed in Eurostat's EUROPOP demographic projections⁵ while the net migration flow is added according to the average level observed in 2019, 2022 and 2023⁶.
- 2) The first alternative scenario (Scenario 1) employs the same assumptions for mortality and migration as in the baseline but adopts a "no change" situation of the age-specific fertility rate. Therefore, age-specific fertility rates for Maltese natives are assumed to remain at the same

⁴ A brief overview of the existing EUROPOP demographic projections for Malta and how this is used in our labour supply model is provided in Appendix A.

⁵ This is done by extending the age-specific fertility and mortality rates with the growth rate of Eurostat's assumptions on these factors in the EUROPOP projections for Malta.

⁶ Since Maltese migration data is based on the 2011 and 2021 census as mentioned in Footnote 3, an average of flows is used to eliminate some of the uncertainty surrounding the data on the most recent years. Furthermore, the years 2020 and 2021 are omitted from the average due to possible effects from restricted movement during the pandemic period.

level as observed in 2023 such that the total fertility rate among Maltese women remains at 1.16.

- 3) The second alternative scenario (Scenario 2) utilises all the assumptions consistent with Scenario 1 but assumes no migration flows of Maltese natives. Hence, this scenario shows the projection of the native population from natural factors only while assuming that the fertility rate does not change from the current level.

In addition to the scenario-specific assumptions, it is assumed that the child-bearing age is between 15 and 49 years and the share of boys and girls in the total number of children born is 51.0% and 49.0% respectively, in line with the shares observed in 2023 (NSO, 2024). Furthermore, foreigners that become part of the Maltese population through acquired citizenship are not included in the projection since data is not easily available. Although this may impact the population level in future years, more so if foreigners stay for longer periods in Malta, this is ultimately dependent on net migration of foreigners which is not within the scope of this projection. It should also be noted that the projected number of births are those born to the native Maltese female population only. This means that a considerable number of births to women of foreign nationality in Malta, which may be considered as Maltese nationals, are excluded. Indeed, between 2019 and 2023, births to mothers of Maltese nationality consisted of around 66.6% of total births in Malta and have been decreasing⁷, mirroring the downward trend in the fertility rate (see Chart 9).

Chart 12 shows that the native Maltese population is set to decline in all the cases outlined above. From the current level of around 405,000 persons, in the baseline scenario this would drop to about 347,000 persons in 2050 and to around 275,000 persons in 2075. The population level in the baseline scenario is projected to be around 20,000 higher by 2075 - the end of the projection horizon - when compared to Scenarios 1 and 2. This is driven by the fact that under this scenario, the fertility rate is assumed to converge to the European average determined by Eurostat and hence, is assumed to increase to a level that is higher than that currently observed. In fact, the total fertility rate in the baseline scenario is assumed to gradually rise to 1.51 by the year 2075, up from 1.16 in the starting year of the projection, i.e., 2023. Although higher by around 30.0%, it is still not at the required replacement rate of 2.1 and thus, the decline in the population persists.

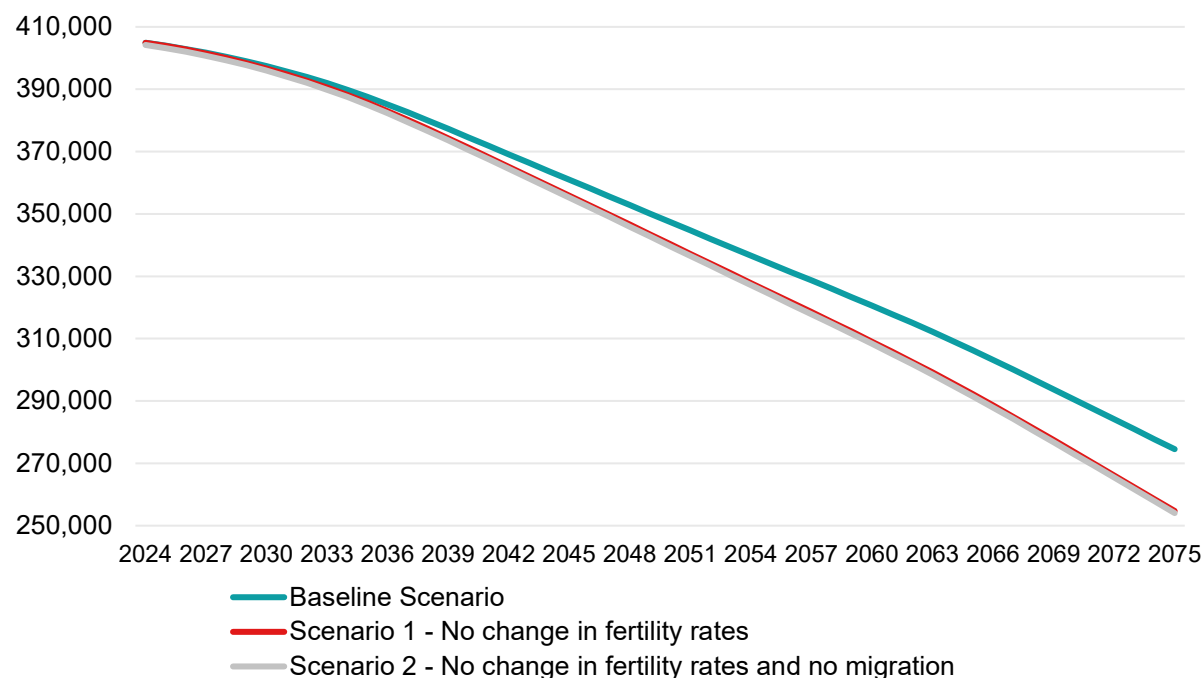
The Maltese native population is projected to decline at a faster rate in Scenario 1 if the fertility rate does not converge to the European average. This is also the case in Scenario 2 which shows how net migration flows of Maltese natives, play a very limited role in increasing the population despite their cumulative impact in later years. In this regard, the projections emphasise how the natural increase in the native population is severely limited (Scenario 2), and that Maltese inward migration, while marginally contributing to population growth (Scenario 1), is not enough to offset the effects from the declining birth rate among Maltese natives. Consequently, without a significant change in fertility trends, the long-term demographic outlook suggests stronger population aging and potential labour force challenges. A substantial increase in inward migration of natives is unlikely as emigration flows in recent

⁷ See Eurostat data on live births by mother's age and citizenship. Accessed from: https://ec.europa.eu/eurostat/databrowser/view/demo_facbc/default/table?lang=en.

years have been minor, and if anything, it is likely that returning migrants will be older, thus exacerbating the ageing transition.

Chart 12: Projection of the Maltese native population

(number of persons)

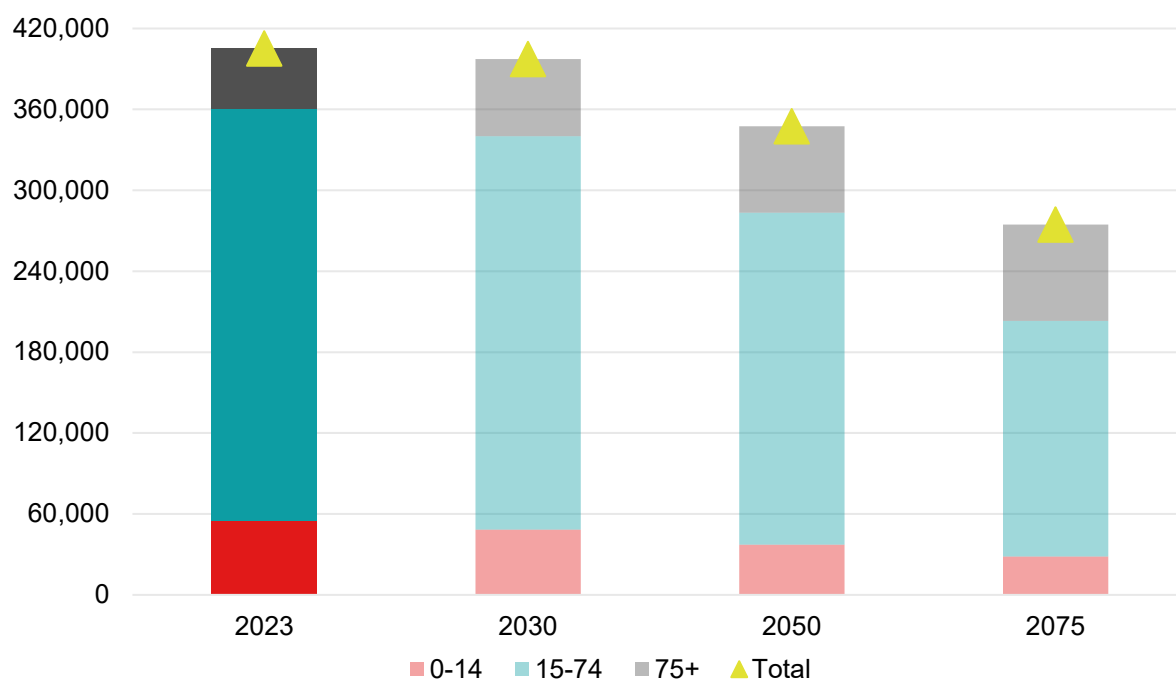


Source: Author's calculations.

A closer look at the age structure of the Maltese population level consistent with the baseline scenario in five, twenty-five and fifty years from now reveals the implications of a low (albeit increasing) fertility rate combined with lower mortality rates (Chart 13). A low fertility rate together with a drop in the number of females of childbearing age leads to a lower number of children under 14 years while the lower mortality rates result into a larger share of persons beyond working age (75+ years). The share of people aged between 0 and 14 is projected to fall to 10.4% of the total population in 2075 from 12.2% in 2030 despite the assumed gradual increase in the fertility rate. On the other hand, people aged 75 and over will comprise 26.0% of the population in fifty years' time.

The impact of low fertility and mortality rates is also reflected in the size of the working age population, which is projected to contract over time. By 2030, 73.4% of the native Maltese population is projected to be of working age. However, this is projected to fall to 70.8% by 2050 and to stand at 63.6% twenty-five years later.

Chart 13: Baseline projection by broad age group
(number of persons)

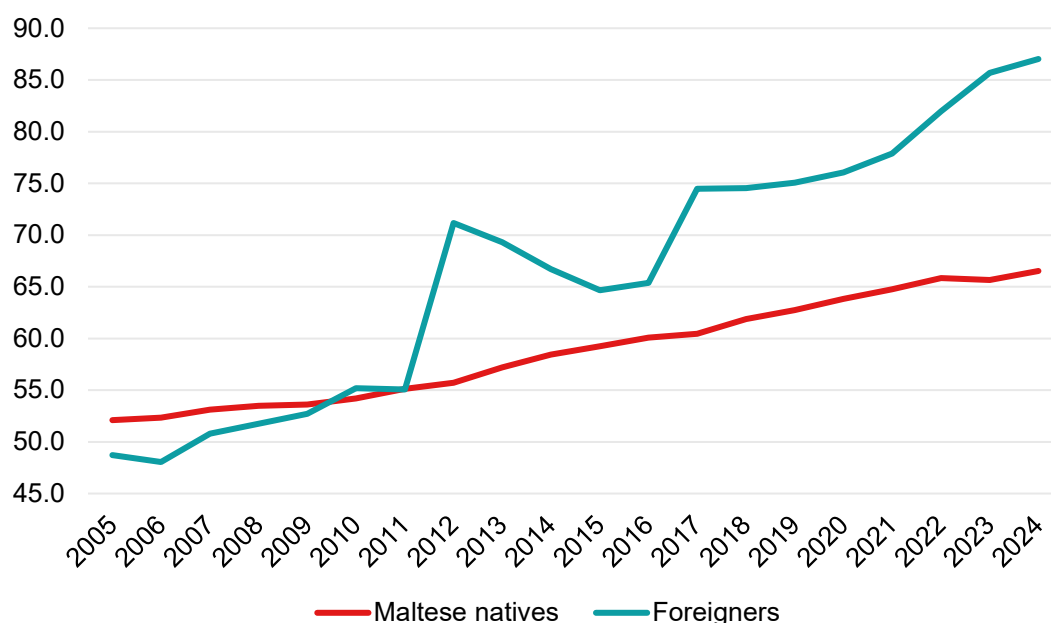


3. What are the medium-term implications of the projected native Maltese population on the labour market?

The projection of a smaller native population aged between 15 and 74 has important implications on the size of Malta's labour supply. To estimate how the latter is expected to evolve in the next decade, the baseline projection of the Maltese population estimated previously is fed into the cohort model developed by Rapa (2019). To take a more complete view at the evolution of the labour supply in Malta, the *total* labour supply (native plus foreign) is projected by taking in consideration the different participation rates of Maltese natives and foreigners.⁸ Since migration of foreign workers is determined by economic activity, and the Bank does not make economic forecasts beyond 2035, this section will limit itself to labour market projections till that date.

As shown in Chart 14⁹, foreigners have higher participation rates when compared to their Maltese counterparts. Although both activity rates show an upward trend over time, the participation rate of foreigners has been significantly higher than that of Maltese natives since 2012. In 2024, the activity rate among foreigners stood at 87.0% while that of Maltese natives was 66.5%. Moreover, Chart 14 also highlights the volatile nature of foreigners' participation rate compared to a more stable trend in that of the Maltese thereby providing further motivation to apply the entry-exit mechanism on Maltese participation rates.

Chart 14: Participation rate by nationality
(percentage of 15-74 Maltese native and foreign population)



Source: Eurostat

⁸ In this part of the Policy Note, the foreign level of the population is still forecasted using information from administrative data on flows. Furthermore, due to the short length of stay of foreigners in Malta, we do not trust that using fertility and mortality rates to project the foreign population is a suitable method. This problem also persists due to the different ethnic groups present in Malta which possess different characteristics among themselves.

⁹ Charts 14 and 15 and Tables 1 and 2 in this section are consistent with the 2024Q4 vintage of LFS data.

In view of these differences, the cohort approach outlined in Rapa (2019) and based on the method in Carone (2005), is applied exclusively on the participation rate of Maltese natives.¹⁰ This method captures the rate of entry and exit of cohorts into the labour market based on the change in their participation rate over time allowing participation rates to be projected for future time periods. The projected participation rates are obtained from the average exit and entry rates during the period 2021-2024 to reflect recent trends.¹¹ These are then applied to the cohorts of the working age population, as projected in the previous section, to obtain the labour supply from the respective cohorts. Hence, the labour supply from each cohort is derived from

$$LS_{a,s,t} = P_{a,s,t} \times POP_{a,s,t}$$

where LS is the labour supply, P is the participation rate and POP is the population level in each five-year age cohort a , by gender s and projection year t . The overall participation rate is expressed as the share of the total labour supply from all cohorts in the total working age population.

Given the volatility in the foreigners' participation rate, the cohort approach is judged to be unsuitable for projecting the participation rates of foreigners. The latter are therefore interpolated from an imposed maximum total participation rate of 89.5% that is assumed to hold over the medium-term horizon. Furthermore, in line with Rapa (2019) the foreign population is determined from expert judgement on the net flow of foreign migrants forming part of the labour supply which are in turn based on macroeconomic projections. Given the latest outcomes and projections, we expect a decelerating flow of foreign workers in the medium term.¹²

Chart 15 shows the projected (LFS consistent) working age population up to 2035 from the steps outlined above. The working age population is expected to continue increasing at a steady rate reaching a level of almost 510,000 persons by the end of the projection horizon, primarily driven by a sustained increase in foreigners within this age cohort, though about a third of the increases seen in recent years. On the other hand, the number of Maltese persons in the total working age population is expected to fall to about 280,000 persons. This reflects the population projected in the baseline scenario and the ageing dynamic in the native Maltese working population implying that the Maltese labour market will continue relying on foreigners of working age over the medium term. Indeed, by 2035, the share of foreigners in the working age population is expected to climb to 45.9% from 30.4% in 2023.

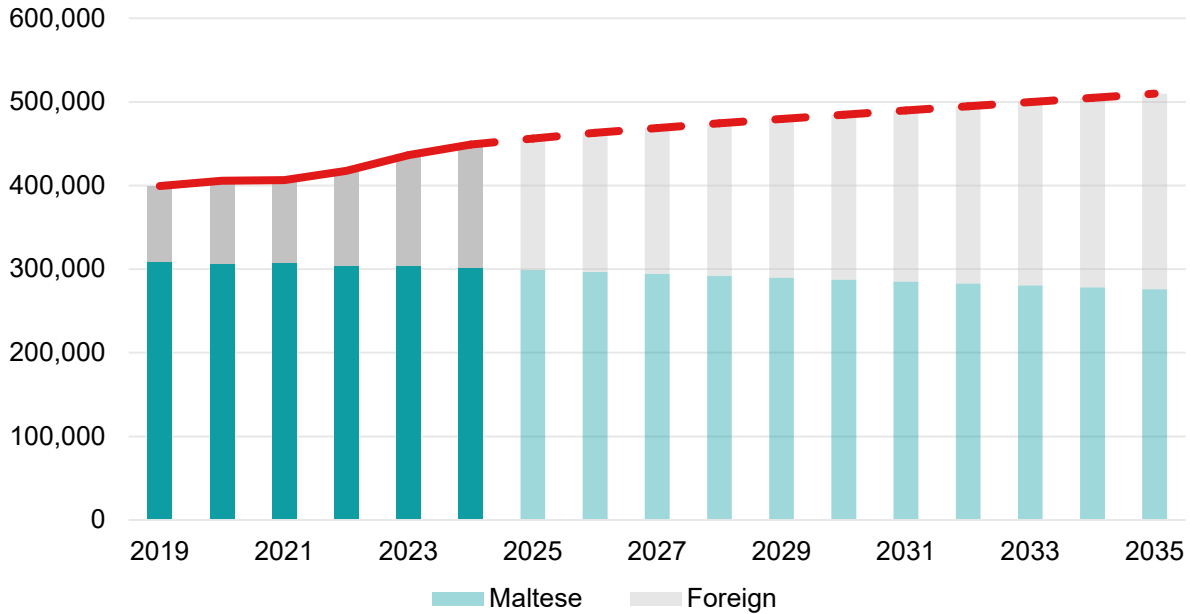
¹⁰ A brief overview of the methodology used to forecast the labour supply and the limitations of the EUROPOP demographic projections is provided in Appendix A.

¹¹ The participation rates of the 15-19 and 75+ cohorts are projected using the trend because there is no entry in or exit from, respectively, these cohorts.

¹² We use an LFS-consistent definition of the working age population, labour supply and participation rate in line with European Central Bank (ECB) requirements. This is done by initially applying the growth rates of the projected Maltese native and foreign population onto the last actual LFS data available of the working age population so that the labour supply is also consistent with the LFS definition.

Chart 15: Working age population by nationality

(15-74 cohort, number of persons)



Source: Eurostat (LFS), Author's calculations.

Table 1 shows the actual and projected overall participation rate of Maltese natives and that of Maltese males and females within the working age population. The activity rate of Maltese natives has increased at a steady rate over the years partly due to the strong rise in the participation of females as a result of government incentives. By 2024, more than half of the females aged between 15 and 74 were active in the labour market, up from a third in 2005. Going forward, the female participation rate is expected to continue rising in the medium term reaching a level of around 67.0%.

On the other hand, the increase in the male participation rate has been much slower than that of females over the years shown in Table 1, mainly driven by its already high level in the 2000s. Indeed, the activity rate among some age groups, especially the young, has declined, partly due to higher education attainment and hence, a decrease in persons leaving school at an early age to work (Gauci, 2021). Although females have also obtained higher education levels over time, this trend has been more pronounced among males and occurred at a time when females were incentivised to work. Going forward, the entry and exit rate mechanism projects a gradual increase to 74.1% in the male participation rate by 2035.

The medium-term expectations of the total participation rate among Maltese natives mirrors the projected developments in the male and female rates. Indeed, this is envisaged to rise to 70.6% of the Maltese working age population, being largely influenced by the expected further entry of women in the labour market.

Table 1: Maltese native population participation rates (15-74 cohort)

	Total	Male	Female
2005	52.1	72.0	32.3
2015	59.3	71.3	46.7
2023	65.7	73.0	57.8
2024	66.5	73.3	59.3
2025	66.8	73.4	59.8
2030	69.0	73.7	64.2
2035	70.6	74.1	66.9

Source: Eurostat (LFS), Author's calculations.

The forecasted activity rate of the foreign working age population in Malta is presented in Table 2. The high level of labour market participation is expected to be sustained over the medium term, albeit it is assumed to grow at a slower rate than historically observed. In 2024, the participation rate of foreigners stood at 87.0% indicating the very high degree of participation in the labour market in comparison with that of Maltese natives during the same year. Although foreign migration flows are expected to stabilise at lower levels than recently observed, their participation in the labour market is envisaged to reach 89.5% by 2035 as the economic motive to migrate is further reinforced.

Table 2: Foreign population participation rates (15-74 cohort)

	Total
2010	55.2
2017	74.5
2024	87.0
2025	87.2
2030	88.1
2035	89.5

Source: Eurostat (LFS), Author's calculations.

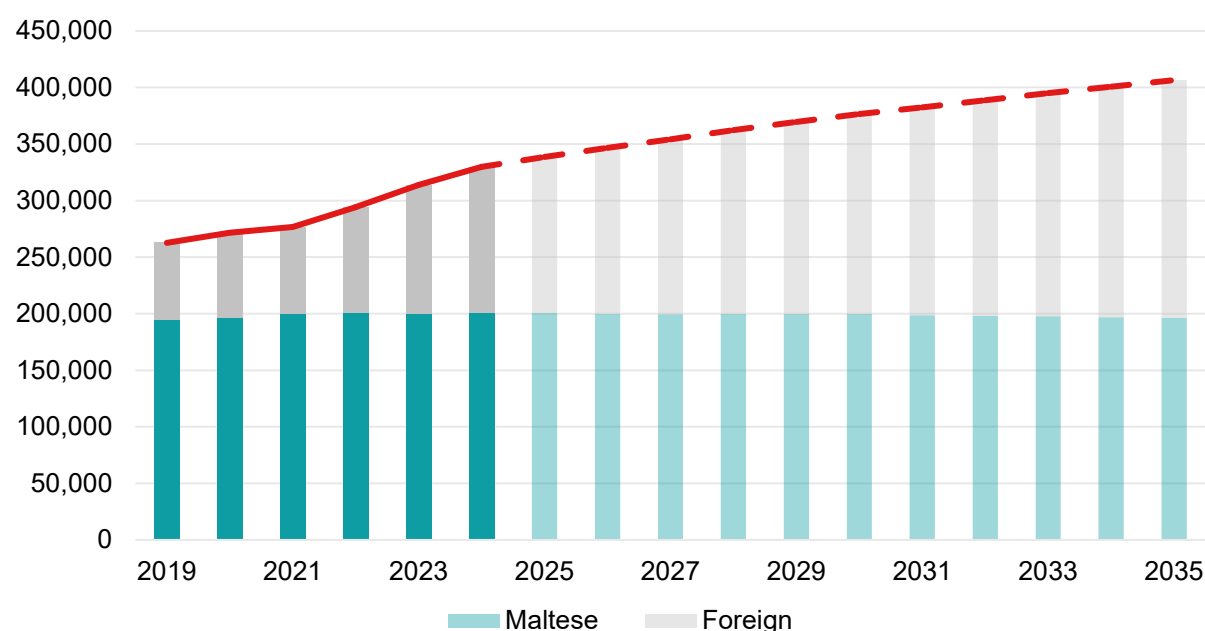
Given these anticipated developments in the working age population and the participation rate among Maltese natives and foreign workers, the labour supply is expected to continue expanding on account

of an increase in foreigners (Chart 16).¹³ As the working age population is projected to increasingly consist of foreign residents while the number of Maltese natives declines, and given that the participation rate of foreign residents is significantly higher than that of Maltese natives, medium-term labour supply growth is expected to remain heavily dependent on foreign workers.

Indeed, by 2035, the labour supply is projected to reach approximately 406,000 people with slightly more than half of these being of foreign nationality. The projected decline in the Maltese working age population is partly offset by an increase in activity rates which broadly stabilises the level of Maltese workers in the total labour supply at around 200,000 persons. Despite this, Chart 16 highlights the role of foreign workers in Malta's workforce in sustaining growth in the labour supply given the assumption on net migrant flows over the medium-term horizon.

Chart 16: Labour supply by nationality

(15+, number of persons)



Source: Eurostat (LFS), Author's Calculations.

¹³ Chart 16 includes persons beyond the age of 74 who are not part of the working age population as shown in Chart 15 but are nonetheless active in the labour market.

Conclusion

This Note provided insights on the drivers of population growth in Malta during recent years. Foreign migration, especially of people of working age, has been the primary contributor to this rapid growth while the exceptionally low fertility rate has limited growth in the native Maltese population. This, coupled with declining mortality rates has contributed to the ageing of the Maltese native population. Such developments in the population are relevant to the macroeconomic projections of the Bank since projected labour supply is based on the forecasted participation rate as well as on the level and cohort structure of the Maltese and migrant populations.

A long-term projection of the native Maltese population is modelled on the observed and expected trends in migration, fertility and mortality. The results show that the Maltese population is projected to decline, even if the fertility rate had to increase in line with European trends. The decline is even stronger if fertility rates fail to rise highlighting the need to address this issue within the native population. In addition to this, the projections also demonstrate that lower mortality rates, in line with recent trends, will lead to older people playing a larger role in the population than younger persons, hence leading to an intensified ageing process.

The results of this study should be interpreted with caution. While this Policy Note does provide alternative scenarios for the fertility rate and Maltese migration flows, it does not experiment with different mortality rates. Moreover, given the inherent uncertainty that surround these parameters, there might be scope for further sensitivity analyses especially with regards to fertility and migration flows. In addition to this, the underlying assumptions of the scenarios contribute to further shortcomings. Since the projections omit additions to the population through acquired citizenship, the population level in the later years may be severely underestimated should this trend be strengthened by a longer stay of foreigners in Malta. Furthermore, the number of births may be significantly underestimated due to the consideration of births to the projected native Maltese female population only. Together, these factors might be contributing to the sudden downturn in the projected level of the native Maltese population. Missing and/or unreliable data on foreign activity rates by cohorts was encountered which hinders deeper analysis of possible exit and entry behaviour in the foreign population. Further research on understanding the behaviour of foreign workers in the labour market and on determinants of foreign migration in Malta would continue to refine the Bank's labour supply model.

In spite of these shortcomings, this study has important policy take-aways. This Policy Note has shown that the drop in the total fertility rate in Malta is partly driven by the fertility rate among foreign women. While the decline in the fertility rate of Maltese-born women was less pronounced than the total, the native fertility rate in Malta is currently well below the EU27 average. In this respect, it might be useful to study how the relationship between family size, and female as well as male career choices, might be developing in Malta. Indeed, recent literature suggests that a family-career conflict can be reversed in an environment of supportive family measures, changing social norms on working mothers, and a labour market adaptive to the needs of both mothers and fathers (Doepke et al., 2022). Proposals in this

domain are aimed at making a family and a career compatible rather than conflicting and thus, dampen the demographic implications which spillover to the labour market and lead to economy-wide repercussions.

When taking in consideration the expected developments in the native Maltese population over the coming decade, it transpires that growth in both Malta's working age population and the labour supply is expected to be fully driven by the number of foreign nationals and their high participation in the labour market. This is likely to lead to challenging choices on how to increase the labour supply to keep pace with a growing economy, especially since sustaining the recent population growth for the foreseeable future would probably require additional investment in the country's infrastructure. Alternatively, efforts at increasing the participation rate of Maltese natives to bring it closer to that of foreign citizens may moderate the demand for foreign workers and further population growth. In doing so, Maltese natives should be equipped with the skills needed by sectors of higher value added. Furthermore, advances in technology, such as digitalisation and the adoption of artificial intelligence, could lead to considerable aggregate productivity growth, reducing the need for steep increases in the labour supply to sustain economic growth. Finally, this Policy Note has assumed a constant effective pension age. Increasing the pension age from 61 to 65, coupled with incentive schemes for people to retire later, has boosted the labour supply in Malta over the last decade. Further improvements in health of older persons and working environments that require less physical stress could entice more persons to remain longer in employment, even in the absence of an increase in the pension age.

References

- Anastasiadou, A., Kim, J., Sanlitürk, E., de Valk, H. A. G. and Zagheni, E. (2024) Gender differences in the migration process: a narrative literature review. *Population and Development Review* (Early View).
- Antunes, A., Cardoso, F., Cunha, V. and Duarte, C. (2023). Demographic scenarios for Portugal in the 21st century. Special issue in Banco de Portugal Economic Bulletin June 2023.
- Balzan, C. (2006). The influence of female labour force participation on fertility. Bachelor's Dissertation, University of Malta.
- Borg, I. (2019). The length of stay of foreign workers in Malta. Policy Note, Central Bank of Malta.
- Carone, G. (2005) Long-term labour force projections for the 25 EU Member States: A set of data for assessing the economic impact of ageing". *European Commission Economic Paper*, No. 235.
- Cutler, D. and Meara, E. (2001). Changes in the age distribution of mortality over the 20th century. Working Paper 8556, NBER Working Paper Series.
- Doepke, M., Hannusch, A., Kindermann, F., and Tertilt, M. (2022). The economics of fertility: a new era. Working Paper 29948, NBER Working Paper Series.
- Gauci, T. M. (2021). An analysis of educational attainment in Malta. Policy Note, Central Bank of Malta.
- Grech, A. G. (2020). The ageing of the Maltese workforce and the impact of pension age changes. Policy Note, Central Bank of Malta.
- Micallef, B. (2018). Estimating the impact of structural reforms to increase the female participation rate in Malta. *International Journal of Social Science Studies*, 6(8): 73-84.
- NSO. (2024). World population day: 11 July 2024. NR 124/2024,
- Rapa, A. M. (2019). A cohort approach to project the labour participation rate in Malta. Policy Note, Central Bank of Malta.
- World Migration Report (2024). Chapter 6 Gender and migration: trends, gap and urgent action. International Organization for Migration.

Appendix A

The model of the labour market currently employed in the Bank's projections is based on a cohort model methodology as outlined in Rapa (2019) that employs EUROPOP demographic projections at its core. The cohort model accounts for age, period and cohort effects by projecting labour market participation rates and the labour supply in five-year cohorts by gender to also account for gender differences in labour market participation.

The projection starts by taking EUROPOP projections of the total population which are a set of demographic projections published by Eurostat. These are very long-term projections based on assumptions on migration flows, fertility and mortality rates which are published every four years with different scenarios for each assumption. The latest set of projections are the EUROPOP2023 projections. Since these projections do not contain an explicit decomposition of the foreign and native population, the *no migration* scenario is utilised as basis for the projection of the native Maltese population. At the same time, Jobsplus administrative employment data helps to inform judgement on foreign worker flows to forecast the foreign level of the population. From the EUROPOP projections and expert judgement on foreign migrant flows, a projection of the total working age population is obtained.

The cohort-specific participation rates are projected by applying rates of entry and exit based on the method in Carone (2005). This method considers the number of people in a cohort that are expected to form part of the labour market in the next period which in this case, is when they form part of the next five-year cohort. Rates of entry are used for cohorts for which the participation rate increased when compared to that in the previous period (i.e. previous cohort). This means that people entered the labour market as they progressed to forming part of the next cohort. In contrast, for cohorts in which the participation rate is lower in comparison to the rate in the previous cohort (i.e. previous period), the exit rate is used since people tend to leave the labour market as they form part of the succeeding cohort.

The projected cohort participation rates derived from the rate of entry and exit method are then applied to the projected working age population (disaggregated in five-year cohorts and gender) to obtain the male and female labour supply in five-year cohorts using the identity

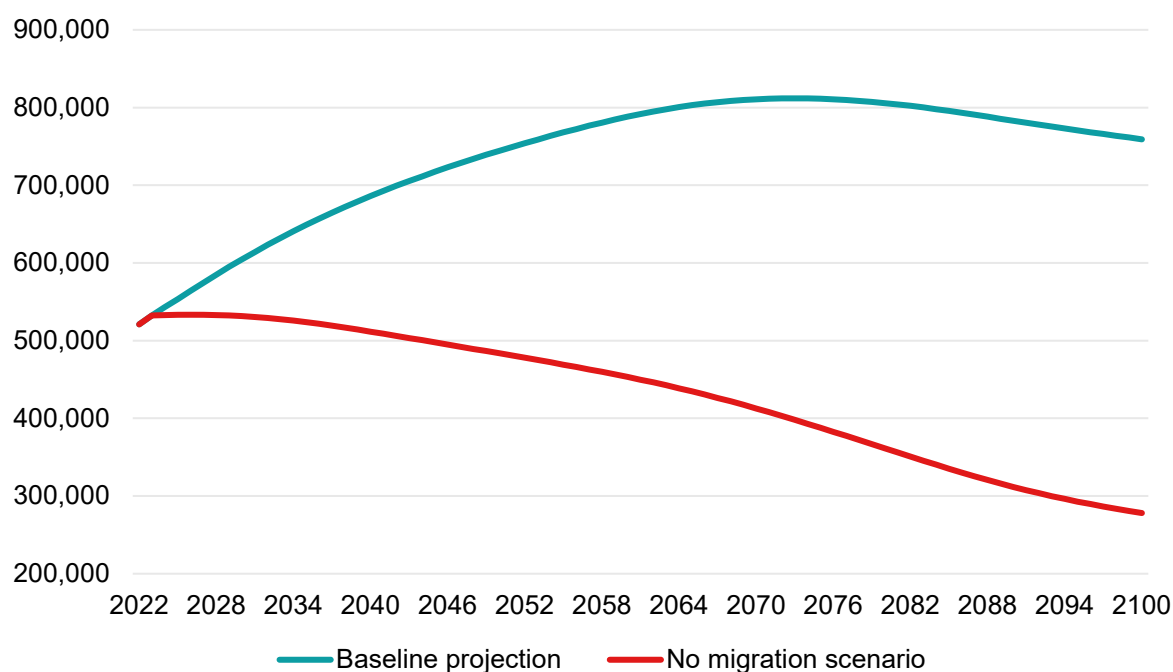
$$LS_{a,s,t} = P_{a,s,t} \times POP_{a,s,t}$$

where, LS is the labour supply, P is the participation rate and POP is the working age population for cohort a , gender s and time period t . The projection of the latter is in line with the LFS definition by applying growth rates to LFS data on the working age population and labour supply and hence we obtain an LFS-consistent participation rate.

In the baseline projection shown in Chart A1, EUROPOP2023 predicts that the population level in Malta will continue increasing rapidly, peaking in 2073 and declining thereafter. In contrast, the *no migration* scenario which assumes no further migration flows after 2023, the population is projected to decline rapidly throughout the entire projection horizon.

Chart A1: EUROPOP2023 Population projections

(number of persons)



At the current juncture, in view of the unavailability of EUROPOP projections distinguishing between Maltese natives and foreigners, and the consequent limitations this presents, a simple methodology is being applied. The projection of Maltese natives in the current methodology is obtained by utilising the *no* migration scenario from EUROPOP on the level of Maltese natives available until the latest actual data.

Nevertheless, this does not account for the structural differences between Maltese and foreign residents such as diverse developments in fertility and mortality rates across citizenship groups, as well as the length of stay of foreign nationals. In view of the increasing share of the foreign population in the total population, these methodological errors are likely to multiply as the share of the foreign population continues to increase over time.