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THE IMPACT OF MIGRATION ASSUMPTIONS ON AGEING EXPENDITURE FORECASTS

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Abstract

The Maltese economy has experienced relatively high migration flows in recent years. As a result, in contrast to other EU countries, Malta's workforce has not aged. However, this inflow has complicated the task of making reliable population projections, with these being revised upwards substantially every few years. While administrative data suggest that most migrants have a short stay in Malta, the underlying assumptions of existing population projections imply that many recent migrants will stay in Malta until retirement. This assumption is boosting upwards considerably long-term forecasts of ageing costs, with potential impacts on credit ratings, sustainability assessments and policy making. On the other hand, if one modifies population projections to reflect existing information on migrant's remigration tendencies, the picture that emerges is significantly different, with GDP trends remaining unaffected while Malta's long-term trend in spending on pensions, health and long-term care come more in line with the projected EU average.

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Executive Summary

Coming up with reliable population projections for a small country is notoriously difficult. When this country is a member state of a union with freedom of labour across country borders, and which is going through a period of very strong growth, the task becomes even more challenging. Population projections for Malta, in fact, have had to be revised very substantially over the space of a few years to account for the ever-changing flows of migrants.

Since most migrants are economic ones, they are overwhelmingly of working age. As a result, the boost to Malta's labour supply is leading the island economy to be one of just two EU countries where the workforce is not ageing, but instead is getting younger. The extent of this shift, and its projected continuation in forthcoming decades, is such that it is pushing down the relative cost of ageing over the next decades as rising pension expenditure is being offset by a jump in GDP. However, there is a flipside of these migration projections, as the way they are being made implies that most of these migrants opt to stay in Malta until retirement. Consequently by 2050, there would be 42,000 pensioners who would be former migrants, boosting Malta's dependent population by a quarter.

This assumption flies in the face of existing evidence on migrants' remigration behaviour. Administrative data suggest that most foreign workers leave the Maltese labour market within two years. If someone leaves the country before retirement, they will not impact on long-term health and care expenditure. Moreover, the Maltese pension system, like other public pension schemes across the world, does not give vesting rights immediately. To qualify for the Two-Thirds pension a worker must have paid a minimum number of contributions ranging from 10 to 12 years depending on one's date of birth, while to get a full pension the required contributory history is between 35 to 41 years. Given that the average age of migrants is 32, this means that even if they stayed till retirement at most, they would get something closer to three-quarters of the full pension. The bulk of foreign workers who leave before the minimum contributory period would get no entitlement at all. In fact, social security data indicate that at present less than one in twenty of current foreign workers has any Maltese pension entitlement.

Using current population projections, the European Commission projects that the long-term rise in ageing costs for the Maltese economy will be one of the top five in the EU, at about four times the average. The Commission does try to carry out a sensitivity analysis of its forecasts by utilising different assumptions of the extent of migration flows. However, these alternative assumptions fail to adjust for the likelihood that only very few migrants continue residing in Malta until retirement or acquire pension rights before leaving the country. If one adjusts population projections to account for this, the projected rise in ageing costs for the Maltese economy becomes more in line with the EU average.

The population projections prepared by Eurostat, with their substantial revisions, make the task of long-term planning very complicated. Furthermore, they affect unduly assessments of Malta's long-term fiscal sustainability and could be weighing the process of pension reform too much against improving adequacy. Local policymakers need to reassess these population projections and develop the capability of modifying them to reflect remigration trends and the pension vesting rights of migrants.

1. What is the impact of migration assumptions on the elderly population projections?

Population projections are notoriously difficult, particularly for smaller countries or geographical areas.² Keilman (2019) notes that at the international level population forecast errors on average are 5.5%, but they rise to 8.5% for countries of less than a million inhabitants. The key cause is the fact that “for small areas the impact of migration on total population is strong compared to fertility and mortality, while, at the same time, migration is the least predictable of the three components”. Another issue is that “at the international scale, forecasters tend to pay less attention to the smallest countries and take special care with the largest ones.”

Indeed, the population projections for Malta prepared by Eurostat have tended to vary quite strongly, with the first set of projections made in 2005 suggesting a population of 508,000 by 2050, those made in 2010 indicated 427,000 for the same future year (see Grech & Borg, 2019). Yet the Maltese population in 2020 was already more than 516,000, reflecting a rapid acceleration in inward migration. That said, while the overall population projection was quite off target, projections made by the European Commission on the number of pensioners, which were based on the Eurostat population projections, ended up being higher than the actual out-turn, reflecting lower entitlement than expected.

**Table 1: Comparison of migration assumption and pensioner projections - thousands
(by population projection base)**

Projection base	2020		2040		2060	
	Migration	Pensioners	Migration	Pensioners	Migration	Pensioners
2010	0.5	100	0.5	110	0.4	128
2013	1.6	103	1.4	122	1.1	147
2015	3.2	96	2.0	131	1.3	167
2019	19.8	92	5.3	138	4.2	207

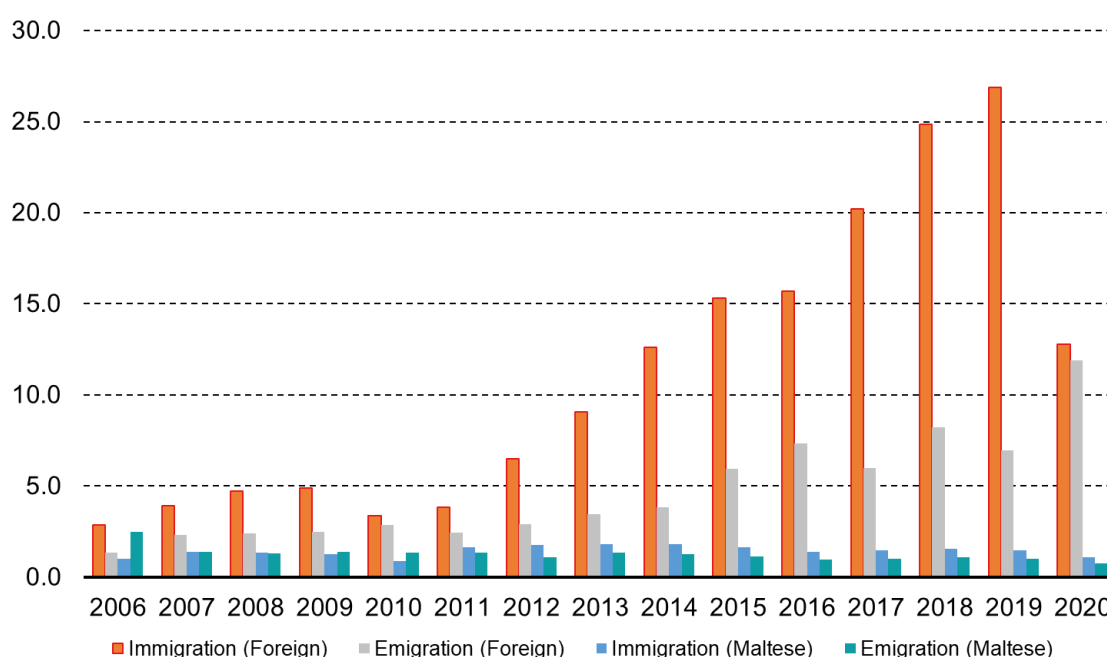
Sources: EC Ageing Reports, various and authors' calculations.

Table 1 shows the net migration assumption adopted in four different Eurostat population projection exercises and the projection of the pensioner population made by the European Commission as part of its Ageing Report regular exercise. The forecast migration for 2020 steadily rose in line with the rising immigration flows observed over time. While as late as 2011 nearly a third of all immigrants had Maltese nationality, by 2019 this proportion had fallen to one-twentieth. This was not due to some large decline in the numbers of Maltese migrating back to their country, but rather reflected the rise in foreign migratory flows.

² See Population Reference Bureau (2001).

Chart 1, however, shows that migratory flows in Malta are not following some secular upward trend. Rather, they are driven to some extent by the economic cycle, with immigration falling sharply in the aftermath of both the Great Recession and the pandemic. The pattern of emigration of foreign individuals is also not simple, with rises during recessionary period, but never to the extent of offsetting immigration. Moreover, there is a very significant degree of correlation between immigration and emigration flows. The strongest relationship exists between immigration flows and emigration flows lagged by a year or by two years. This suggests that most immigrants tend to leave the island within a couple of years of being considered a resident.³

Chart 1
TRENDS IN MIGRATION BY CITIZENSHIP
(thousands)



*Note impact of weak economic growth in 2010 and 2020
 Sources: NSO, Authors' calculations.

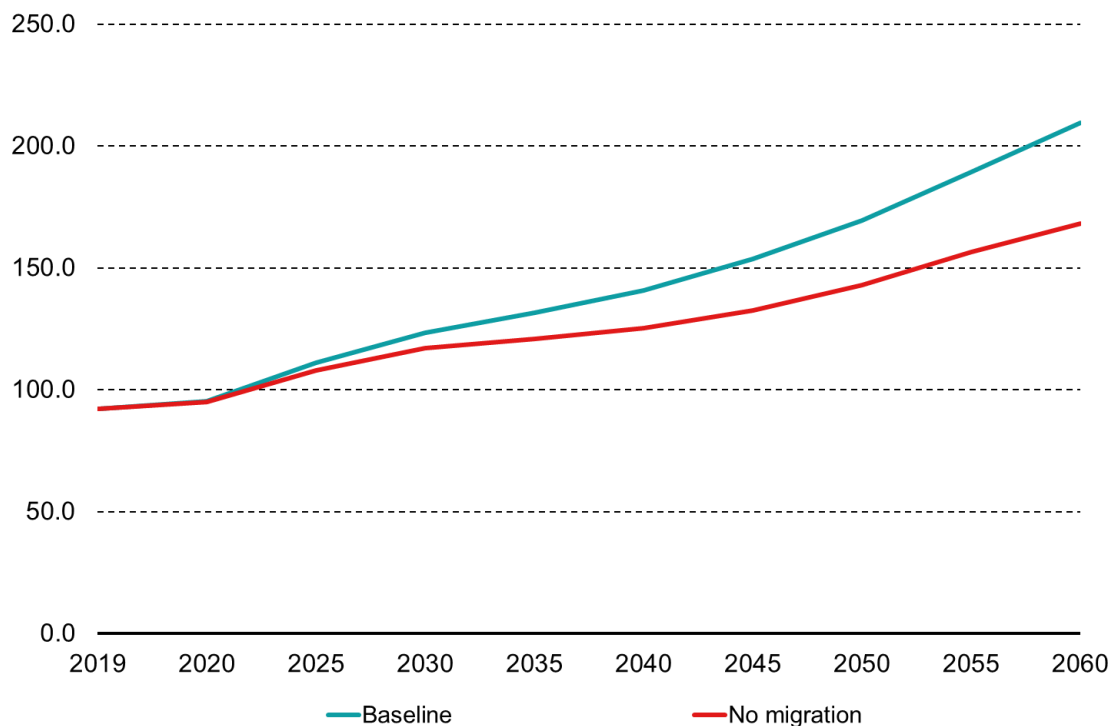
The rise in the migration assumption over successive projection exercises reflects the tendency that migration flows have shown in most recent years. However, adopting a naïve approach to set migration assumptions can create issues. For instance, the 2019 population projection assumed inward migration of nearly 20,000 in 2020 based on 2019 flows, wide off the mark from the 1,206 net inflows observed in 2020. Another important consideration is that it is clear from the data that immigration and emigration in Malta are not distinct variables but rather interdependent ones. While the foreign

³ Note that to be considered a resident you need to indicate you are going to stay for twelve continuous months in the country, which could imply that the actual lag between arrival and departure may be closer to three years.

population stock is rising, this does not appear to be the result of a starting stock which settles in the country and is then replenished by more flows. It rather appears that the growth of the foreign population stock occurs despite that there is strong emigration after some years, because there is an even stronger inflow which more than replenishes the stock of the foreign population. Partly this could be related to the ageing of the indigenous population resulting in a reduction in the indigenous working age population that needs to be progressively substituted with migrant workers, to make up for the continued high labour demand arising from strong economic growth.

This is not the approach taken in the Eurostat population projections. These projections are not based on any structural model of migration but instead follow a time series approach with an imposed assumption that migration flows across Europe converge over time.⁴ Moreover emigration and immigration are modelled separately. Applied to the Maltese context, this methodology implies that a considerable proportion of the migrants ends up staying in Malta and ages here. This can be understood from Table 1, which shows that with an increase in the net immigration assumption, the projected number of pensioners in the future rises considerably. The latest population projections suggest that in 2050 there will be 207,000 pensioners, when the projection made just five years earlier had suggested that in 2050 there would be just 167,000 pensioners, or 20% less.

Chart 2
POPULATION 65+: DIFFERENT MIGRATION ASSUMPTIONS
(thousands)



Sources: Author's estimates; Eurostat.

⁴ For details see European Commission (2020).

Eurostat assumes that gradually migration flows would subside in Malta. So that the slowing down of the ageing process (as the inward migrants are rightly assumed to be of working age) in the early part of the projection induced by migration results in a more pronounced ageing in later years of the projection horizon (when the young migrants who stay in Malta age). This is quite evident when one compares Eurostat's baseline projection with their no migration scenario. Chart 2 shows the substantial impact the migration assumptions have on Malta's projected elderly population. The baseline projection shows 210,000 people aged 65 and over by 2050, while the no migration scenario indicates 168,000. The gap between the two projections takes about twenty years to become significant.

2. Do migrants stay in Malta until retirement?

Considerable inward migration, though quite pronounced in certain parts of Malta's history, is a recent phenomenon for Malta in its history as a sovereign nation. Grech (2017) outlines how for the first decades around the time of independence there was considerable net emigration from the islands, which only turned to net migration in the 1980s, mostly due to returning emigrants. Inward migration of non-Maltese only started to feature prominently in population data after Malta's EU accession. Employed foreign nationals at the end of 2020 amounted to 70,742. This was seven times the amount in 2010, with their share of the workforce rising to 26% from 6% a decade earlier. Grech (2020) indicates how due to these trends, Malta was one of only two EU countries where the relative share of the older workforce fell.

Since inward migration is such a recent phenomenon, there is not much literature on the subject. Grech (2017) argues that access to the EU's labour market was essential in raising Malta's potential output. On the one hand, the availability of foreign labour helped address skills gap at the higher end of the employment spectrum, such as professional and technical occupations. On the other, migrant workers increasingly filled blue-collar jobs, where the supply of Maltese labour had declined. This increased labour input contributed to raise Malta's capacity growth at a much faster rate than the rest of the European Union.

Borg (2019), conversely, sheds light on the less positive features of the reliance on foreign labour. Using longitudinal administrative data, the author finds that around a quarter of foreigners exit the Maltese labour market within the first year of engagement. Around half exit between one and two years later. This very short stay is a limit to economic assimilation and labour productivity growth. High job turnover also strains training systems and raises firms' hiring costs. In fact, the topic of labour shortages has risen at the top of the economic agenda in Malta, with calls for a new employment policy that valorises the creation of skills over dependence on transient labour.

Given this information, the assumptions underpinning the population projections adopted by policymakers – that the bulk of migrants will stay on and retire in Malta – appear flawed. Returning to Chart 2, by 2050 over a fifth of those aged 65+ will have migrated to the country as workers and retired in Malta. Over 42,000 pensioners will be recent migrants to Malta. To put this in context, at present administrative data indicate that there are less than 400 foreign nationals who draw a Maltese retirement pension. This implies that less than half a percentage point of all pensioners are foreign citizens who settled in Malta. The transformation of the Maltese pension system beneficiaries that is implied is, if anything, even more pronounced than that which was experienced in the labour market.

Yet, there is very little evidence that suggests that this shift is happening. To qualify for the Two-Thirds pension a worker must have paid a minimum number of contributions ranging from 10 to 12 years depending on one's date of birth, while to get a full pension the required contributory history is between

35 to 41 years. Workers from EU countries and from nations with whom Malta has signed special agreements may be able to utilise contributory periods in Malta to qualify for a pension when they retire elsewhere, but Malta's share would be pro-rata at most.⁵ Administrative data from the Social Security Department indicate that the number of foreign citizens who have paid enough contributions to qualify for at least a pro rata minimum pension in Malta amounts to just over 3,500 individuals. This means that less than one in twenty of current foreign workers at present have an entitlement to a pension from Malta. The bulk of workers from third countries leave the island before they have any vested pension rights, while most European workers are likely to qualify just for a small pro rata pension from Malta.

To double check the Social Security Department data, we investigated the labour market administrative data and checked if they indicated a similar number of foreign workers who were recorded as having worked for enough years to qualify for a Maltese pension. Table 2 summarises our findings, showing that as the number of foreign workers rose, there was an opposite trend in the proportion of those who were working long enough to get pension entitlements. Higher inflows of EU workers after accession appear to have lowered the length of stay of foreign workers. Taken together, of all the foreign workers who came to Malta between 2002 and 2008, just over 3,600 may have vested pension rights. This is similar to the amount suggested by the Social Security Department data and implies that less than one in five of these workers will get any return on their national insurance contributions.

Table 2: Estimate of foreigners remaining in the Maltese labour market enough to qualify for a minimum pro rata pension

First year in Malta	Amount who entered labour market	Proportion still working in Malta after ten years	Foreign workers qualifying for pension
2002	1,516	24%	361
2003	970	24%	233
2004	1,138	29%	329
2005	2,267	22%	508
2006	3,339	20%	655
2007	4,451	15%	675
2008	5,271	16%	880

Sources: Authors' calculations using Jobsplus data.

For more recent cohorts of migrant workers, it may be too early to determine whether they will spend the required ten years to qualify for a pension. On the basis of available data and applying a cohort approach to determine their probability to leave the Maltese labour market, it appears that even

⁵ For more details see <https://socialsecurity.gov.mt/en/international-relations/bilateral-agreements-on-social-security/>

when one looks at the next decade of arrivals, the proportion who may acquire vested pension rights may be close to 20% of the initial inflow. This would suggest that over 15,500 of the current foreign workforce could eventually have some entitlement to a Maltese pension. However, given that the median age of foreign workers appears to be 32, the day when they will be drawing a Maltese pension is beyond 2050.

Furthermore, while they may have some entitlement to a Maltese pension, as they would have the required minimum period of contributions, their pension is highly likely to be pro rata as they would be unable to reach the required number of contributions for a full pension. At present one requires 41 contribution years to get a full pension. This means that unless a third country national has started to contribute in Malta as from the age of 24, and continues doing so until age 65, they will not get a full pension. Of all the migrants that have come to Malta in the last decade, only a quarter were technically able to have a full contributory period. One needs to keep in mind that while about a fifth of foreigners may get some pension entitlement, as they stay for the required minimum period, a good proportion of them will leave the islands before they turn 65. If one extrapolates trends from the first ten years of stay, less than one eighth are likely to remain until retirement.

These considerations show how unlikely it is that in 2050 there will be 42,000 foreigners drawing a full Maltese pension. It is much more likely that there could be some 15,500 who have some form of entitlement, with only a few thousand being entitled to a full pension.

3. How would different migration projections impact ageing-related spending?

On the basis of Eurostat's population projections, European Commission (2021) identifies Malta as one of the top five EU countries in terms of the projected rise in public pension spending. The rise projected for Malta is nearly four times the EU average. This increase, however, is expected to occur only after 2040, whereas in the EU the rise in spending will happen by 2040. This is a direct reflection of the population projections, which see Malta's old age dependency ratio take a turn for the worse after 2040. Malta is one of only three countries, the others being Cyprus and Luxembourg, that will see the dependency ratio resulting in higher spending after 2050. The same report also has Malta's spending on health and on long-term care accelerate dramatically, and exceed the rise observed in other countries.

To address the issue of the relative uncertainty of long-term population projections, the European Commission utilises different population projections based on a range of migration assumptions when it estimates future ageing costs. Table 3 shows that such estimates are very sensitive to these assumptions. Lower migration (33% less than the baseline projection) result in a much worse outcome, as GDP grows by much less. Higher migration (33% more than the baseline projections) lowers the cost of ageing, as it boosts GDP as migrants initially boost the labour force. However, the higher migration eventually translates into higher expenditure as Eurostat assumes these migrants eventually settle in Malta and accrue a pension, and lead to higher expenditure on health and long-term care.

**Table 3: Estimate of ageing costs using different population projections
(% of GDP)**

	Higher migration	Baseline projection	Lower migration
2019	17.9	17.9	17.9
2030	17.4	17.8	18.4
2040	17.8	18.5	19.3
2050	19.5	20.4	21.7
2060	22.2	23.7	25.7
2070	24.4	25.9	28.0

Sources: European Commission (2021).

While there can be little debate about the fact that the Maltese economy is likely to continue to attract migration of working age individuals, in the preceding section we saw that all evidence points towards individuals leaving the country within a few years. If one were to modify population projections accordingly, utilising a migration assumption that boosts the working age population but which then

does not proportionately increase the pensioner population, the ageing costs estimates would look quite different. While GDP would remain similar to that in the baseline projection, pension expenditure in absolute numbers would be more in line with that found in the no migration projection.

**Table 4: Estimate of ageing costs using modified population projections
(% of GDP)**

	Baseline projection	Baseline projection with 66% of migrants staying on until 65	Baseline projection with no migrants staying on until 65	Baseline with 33% less migrants, none staying on until 65
2019	17.9	17.9	17.9	17.9
2030	17.8	17.5	16.9	18.1
2040	18.5	17.8	16.4	18.2
2050	20.4	19.3	17.2	19.8
2060	23.7	22.1	19.0	22.8
2070	25.9	23.2	17.9	21.9

Sources: Author's calculations using European Commission (2021).

Table 4 presents such estimates on the basis of the assumptions and methodologies used in European Commission (2021) but with different assumptions about how many migrants leave the islands before retirement. At one extreme we adopt the assumption that all migrants leave Malta before retirement and have no pension entitlement. This would lower the ageing costs throughout with the gap becoming ever more pronounced with time. Ageing costs in 2070 under this scenario would be the same as in 2019. While ageing expenditure would still be much higher in absolute terms than it was in 2019, the migration of working age individuals would raise GDP to make up for this impact.

Since the assumption of no migrants staying or accruing any pension is quite strong, we adopted another assumption where only two thirds of those migrants which Eurostat assume will be staying until retirement do so. Once again, we have lower ageing costs though the impact is much less pronounced, with spending still rising by 5 percentage points compared to 2019. If one were to calibrate this scenario further such that by 2050 there are 15,500 migrants who are retired in Malta and earning a full pension like other residents,⁶ the growth in spending would be of less than 3 percentage points.

⁶ This scenario is based on remigration patterns indicated by labour market administrative data, which are extrapolated forward. These would suggest that 15% of migrant workers could work until retirement in Malta. To be conservative we assumed 20% would choose to do so, that is the proportion of those leaving the islands would be frozen at the same rate as that shown after 10 years of labour market entry.

This would bring Malta's results nearly in line with those of the rest of the Euro area, instead of being four times as high as implied by the European Commission (2021).

One gets a slightly worse result if instead of adopting the baseline population projection migration assumptions, one uses the low migration ones, while at the same time assuming none of these migrants stay until age 65 or accrue any pension rights. Under this set of assumptions, the growth in ageing costs by 2070 would be of 4 percentage points, or half that implied by the European Commission (2021). This scenario shows that even if one assumes lower migration inflows, as long as these migrants contribute without accruing pensions or retiring in the country, thus boosting health and long-term expenditure, the impact of ageing is significantly mitigated.

In this light, for policy formulation purposes, Maltese policymakers need to monitor the length of stay of migrants and take this into consideration when making long-term fiscal plans. The population projections prepared by Eurostat, with their constant substantial revisions, make the task of long-term planning even more complicated. Unfortunately, their use in exercises, like that of the European Commission (2021), is having repercussions on assessments of Malta's long-term fiscal sustainability, including those made by international credit rating agencies, and could also impact the process of pension reform weighing the case against adequacy reforms unnecessarily. It is therefore becoming ever more important that local policymakers reassess these population projections and develop the capability of modifying them to reflect more precise observations of remigration trends and the subsequent pension vesting rights of migrants.

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