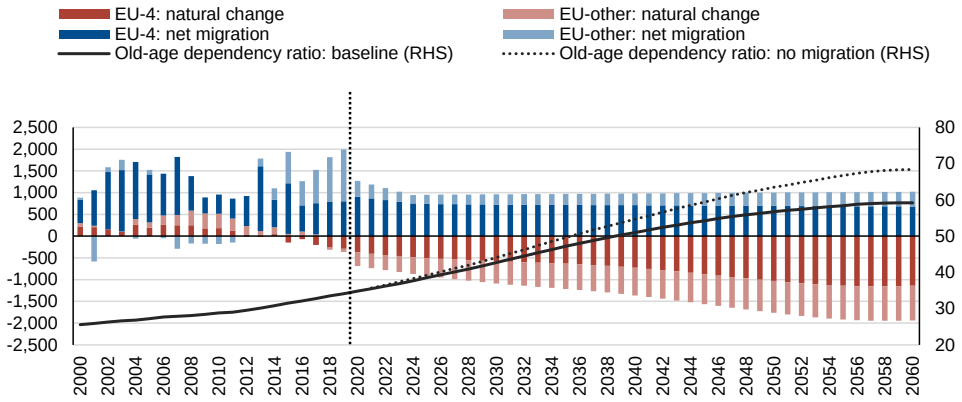
The demographic impact on EU sovereigns is underrated, raising long-term credit risks

Shrinking working-age populations and ageing dynamics are among the main challenges European economies face over the coming years. In this study, we analyse long-term demographic projections from major forecasting institutions and their implications for long term sovereign credit risks. We find large differences in projections among the different institutions and major question marks over their underlying assumptions. Overall, the long-term risks to European sovereign creditworthiness may be significantly greater than previously assumed.

Demographics are a crucial element of sovereign credit risk analysis, as they affect multiple drivers of government debt sustainability in the long term. At the same time, long term materiality and data uncertainty complicate credit risk assessments. We assign a 20% weight to the ESG pillar in our sovereign methodology, providing a transparent and forward-looking assessment of ESG factors for our ratings. “S” is driven in large part by our assessment of demographic trends. We complement quantitative indicators with qualitative assessments of government policies and research to provide a broader context to our analysis.

Figure 1: Population change projections for the EU, population thousands



Natural change: the difference between the number of live births and deaths during the year. Net migration: the difference between immigrants and emigrants. EU-4: Germany, France, Italy and Spain.

Source Eurostat, Scope Ratings GmbH

Our analysis of long-term population projections from the UN, EC, OECD on the EU-4 – Germany (AAA/Stable), France (AA/Stable), Italy (BBB+/Stable), Spain (A-/Stable) – shows:

- **Data uncertainty:** All institutions agree that EU economies will face shrinking working age populations and rapidly ageing dynamics over the coming years. However, we identify strong discrepancies across forecasts, as well as rather optimistic assumptions over fertility rates and migration trends, presenting, in our view, meaningful downside risks to their projected baseline scenarios.
- **Migration is key:** Without 1m people net migration each year until 2060, which is the EC’s baseline, the EU working-age population would decrease by 30% (80m people) and the old-age dependency ratio would rise to 70% for the EU. Including migration, the working-age population will fall 16% and the old-age dependency ratio will be 60%.
- **Global view**: Italy, Spain and Germany are more exposed to these adverse dynamics compared to the US, the UK and France. Japan and China are also very affected. Still, in absolute terms, all countries are set to face meaningful challenges related to ageing.

The demographic impact on EU sovereigns is likely to be more adverse than currently assumed by major forecasting institutions. This may be compounded by policy inertia, undermining the ability of governments to prepare economies to the challenges posed by ongoing demographics trends.

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The demographic impact on EU sovereigns is underrated, raising long-term credit risks

Demographic shift: a key driver of long-term sovereign creditworthiness

Demographics affect many aspects of sovereign credit risk

Demographics are a crucial element of sovereign credit risk analysis, as they affect multiple drivers of government debt sustainability in the long term. We summarise here the channels through which the main demographic trends affecting European sovereigns – shrinking working-age populations and ageing – will impact their creditworthiness in the long run. For a detailed analysis, please see our related research.

The decline in working-age populations and ageing dynamics will affect:

Economic growth	Public finances	Financial stability	Environment	Governance
Through the labour and productivity inputs.	Through government budgets, both revenue (tax take, social security contributions) and spending (pension and healthcare).	Through bank profitability, with possibly less demand for lending; monetary policy, with pressure on equilibrium rates; housing demand, and prices.	Through transition and resource risks, depending on how economic models will evolve.	Through policy-making priorities, with the "grey power" likely to favour spending on welfare for the elderly.

Long-term materiality and data uncertainty complicate credit risk assessments

These changes materialise only gradually and over time, which complicates the assessment of their impact on sovereign creditworthiness. The challenge is to identify the materiality and timing to reflect these slow-moving but highly relevant developments in our forward-looking credit assessments, not least given the prevailing uncertainty over such long-term horizons. Moreover, long-term demographic risks can be mitigated by policies designed to increase population, spur technological innovation, integrate older workers into the workforce and reforms to pension and healthcare systems.

We currently assign a 20% weight to the ESG pillar in our sovereign methodology, providing a transparent and forward-looking assessment of ESG factors for our sovereign ratings. "S" is driven in large part by our assessment of demographic trends.

We complement quantitative indicators with qualitative assessments of government policies and research on credit relevant factors to provide a broader context to our analysis. In this report, we explore demographic projections to interpret the uncertainty surrounding these trends over long-term horizons.

Discrepancies in demographic forecasts point to downside risk on credit implications

We compare forecasts by the United Nations, European Commission and OECD focusing on the EU-4 – Germany, France, Italy and Spain – and identify two main results:

i) consensus on the adverse developments for the EU, given declining working-age populations and ageing dynamics for the four countries in the next 40 years;

ii) important discrepancies in forecasts from different institutions, coupled with rather optimistic underlying assumptions, point to further downside risks.

These results point to major long-term credit challenges, which may be compounded by policy inertia.

Forecast divergencies point to downside risks to Europe's already adverse demographic picture

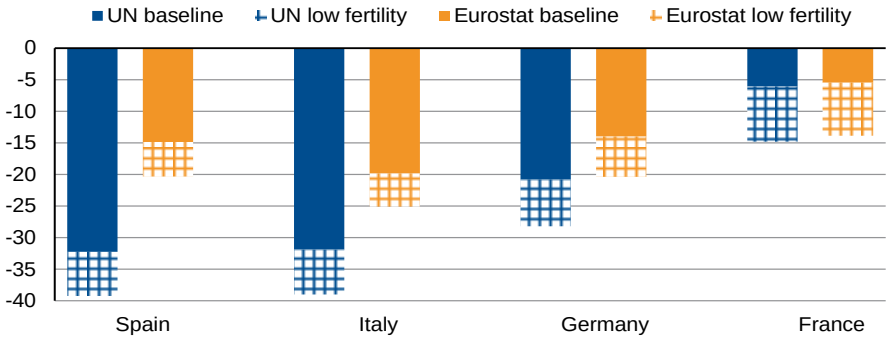
Leading forecasting institutions agree on adverse EU scenario…

Most recent population forecasting exercises by the United Nations and the European Commission on the EU-4 point to strongly adverse developments in terms of projected reductions in working-age populations, as well as ageing dynamics, in the next 40 years.

However, the degree of the adverse impact varies greatly, with France standing out as the least adversely affected.

In its baseline scenario, the UN foresees a decline in the working-age population of Italy and Spain of about one-third from the current level by 2060 and by 20% in the case of Germany. As a result, the old-age dependency ratio is expected to increase in the four countries by between 20 and 45pp. In other words, if today for every person aged over 65 there are three people of working age cohorts, in forty years there will be at best only two.

Figure 2: Change working-age population (20-64): 2060 vs 2020, pp



NB: UN low fertility scenario assumes a 0.5 lower fertility rate than the baseline; Eurostat low fertility scenario assumes a 20% lower fertility rate than the baseline. Source: UN, EC, Scope Ratings GmbH

…but not on the magnitude of the main trends

The institutions agree on the direction of these trends, but not on their magnitude, as highlighted by very large differences in projections (**Figure 2**). The European Commission's forecasts stand out as significantly more optimistic.

The case of Spain is the most illustrative. **Figures 3** and **4** show key demographic indicators on Spain based on forecasts of the European Commission, OECD and UN. The differences across the institutions are less marked for Germany and especially France but also sizeable for Italy (see the Annex).

For Spain, we identify very different forecasts, with the working age population shrinking by about 10-15pp from today by 2060 in the baseline scenarios of the EC and OECD, but by more than twice this size according to the UN baseline ("medium-variant") scenario. Large discrepancies are consequently also present on the old-age dependency ratio.

Specifically, while the EC and OECD forecast an old-age dependency ratio of around 60% by 2060, the UN's baseline forecast is almost 80%, and its low-fertility scenario 90%. These differences are exceptionally large with critical implications for sovereign credit risk.

Figure 3. Spain – Change in working-age population (20-64) from today (%)

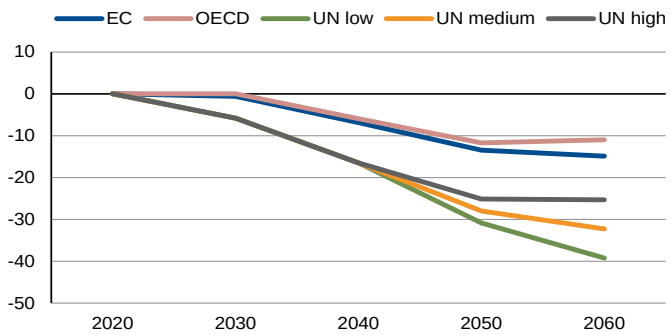
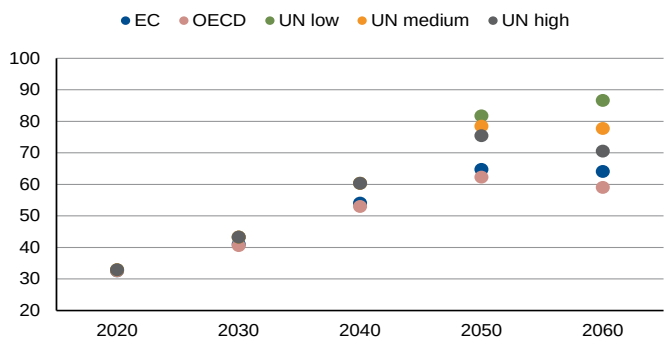


Figure 4. Spain - Old-age dependency ratio (20-64, %)



NB: UN scenarios in the chart refer to the medium, low and high fertility variants. In the high variant, total fertility is projected to reach a fertility level that is 0.5 births above the total fertility in the medium variant. In the low variant, total fertility is projected to remain 0.5 births below the total fertility in the medium variant.

Source: EC, OECD, UN, Scope Ratings GmbH

Source: EC, OECD, UN, Scope Ratings GmbH

The demographic impact on EU sovereigns is underrated, raising long-term credit risks

What drives these large differences? Net migration

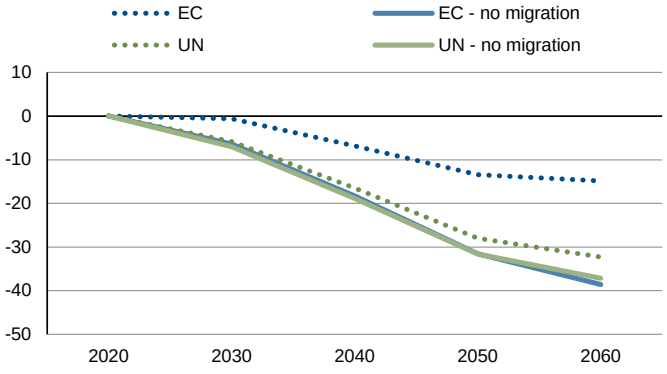
Population dynamics depend on fertility, mortality and migration

The population of a country increases or declines through the interaction of three factors[1]: fertility, mortality, and migration. Therefore, to project the future population, one needs underlying assumptions about how the current rates of births[2] and deaths[3] and how immigration and emigration flows will change in the future. Overall, we identify net migration as the key explanatory variable of the differences between the institutions, by comparing the UN and EU baseline forecasts with their respective "no-migration" scenarios (which assume zero net migration but baseline fertility and life expectancy assumptions).

Migration is the critical variable explaining the differences

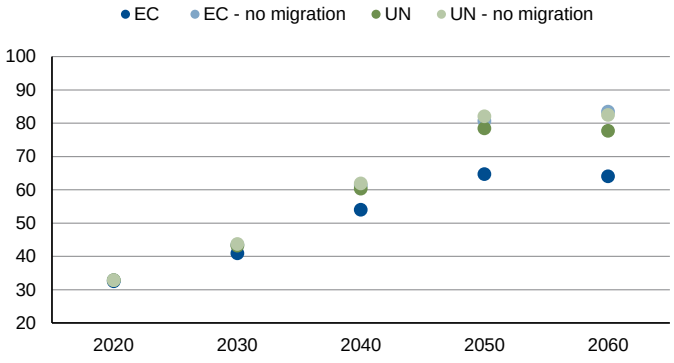
We run this exercise for Spain (the other countries are displayed in the annex) in **Figure 5** and **6.** Consistently, the UN and EC no-migration scenarios are almost identical, pointing to the fact that the assumptions on fertility rates and life expectancy are broadly aligned (see tables in the annex). Indeed, net migration is the most difficult variable to forecast, as pointed out by both the EC and UN in their methodologies[4,5], as migration flows often result from sudden and unpredictable changes in socio-economic, political or environmental factors. Moreover, for many countries, information on the number of immigrants and emigrants is not available.

Figure 5. Spain – Change in working-age population (20-64) from today (%) – baseline vs no migration scenarios



Source: EC, UN, Scope Ratings GmbH

Figure 6. Spain – Old-age dependency ratio (20-64, %) – baseline vs no migration scenarios



Source: EC, UN, Scope Ratings GmbH

Are net migration assumptions realistic?

Given such divergencies, we explore the underlying assumptions driving net migration. As the European Commission is the most optimistic on net migration, we focus on Eurostat net migration assumptions. **Figure 1** (front page) shows a very negative picture for the natural population change[6] at the EU level over the next forty years, counterbalanced, however, by expected stable and significant net migration inflows.

For the EU, annual net migration inflows are expected to decrease from about 1.3m people in 2019 to about 1m in 2070. However, the decline is projected to take place mostly in the next three years, with net migration inflows remaining stable at 1m for the next 50 years.

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[1] This section include input from the policy brief "Understanding Population Projections: Assumptions Behind the Numbers" by the Population Reference Bureau

[2] Fertility is expressed as the total fertility rate, which refers to the average number of children that a woman will have in her life. Globally, fertility rates have halved since the middle of the past century, though the decline came by a very different speed across countries. Today, the world's total fertility rate stands at 2.5 children per woman and is converging to the level referred to as "replacement level fertility" (2.1), the level at which population exactly replaces itself from one generation to the next.

[3] Mortality rates depend on life expectancy assumptions. In the past 20 years, life expectancy at birth has increased globally from 66 to 72 years, according to UN data; in Europe, from 73 to 78 years. Both the UN and EC expect life expectancy to continue increasing for Europe although to a slower pace than in the past 20 years. For advanced economies, which generally present low mortality rates and long-life expectancies, mortality is a less relevant determinant of population change.

[4] United Nations, World Population Prospects 2019, Methodology of the United Nations population estimates and projections

[5] European Commission, The 2021 Ageing Report, Underlying Assumptions & Projection Methodologies, November 2020

[6] The difference between the number of live births and deaths during the year (or another defined time period)

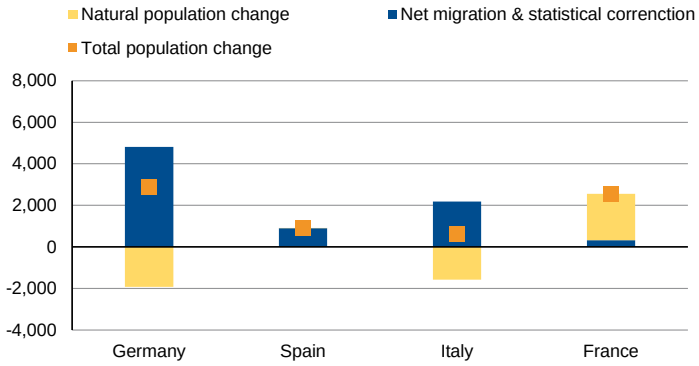
Assumption of high and stable net migration may be challenged

While possible, it is not certain that net migration flows can remain at similar levels of today over the next 50 years. This is especially the case if developing economies grow and raise the standards of living for their population and/or fertility rates continue to decline as they have over the past decades, which may reduce migration flows towards Europe. In addition, net migration of 1m people per year also assumes a continued willingness and ability of Europe to integrate migrants.

Looking at the components of population change in the past 10 years in the EU-4 (**Figure 7**), we notice marked differences across countries. Germany and Italy had negative natural population changes which was compensated with robust net migration inflows in the case of Germany[7]. Spain and France witnessed only small positive cumulative net migration, though France benefitted from favourable domestic demographics.

Figure 7. Population change components

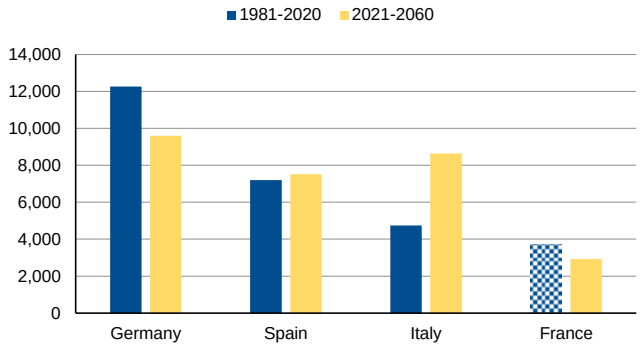
Cumulative over 2010-2020, population thousands



Source: Eurostat, Scope Ratings GmbH

Figure 8. Cumulative net migration

Population thousands



NB: Historical net migration data also includes statistical corrections; data for France from 1998 onwards; prior years estimated using available data.
Source: Eurostat, Scope Ratings GmbH

Spain and Italy's net migration forecasts very optimistic

Comparing cumulative net migration in Germany, Spain and Italy in the last 40 years with the expected cumulative inflows Eurostat forecasts for the next 40 years (**Figure 8**), we identify an optimistic bias, especially in the cases of Italy and Spain.

The projected slowdown of net migration in Germany reflects the assumed lower migration inflows after the 2015 refugee crisis, which doubled annual net migration from 600,000 to 1.2 million people between 2014 and 2015 and represents a six times higher figure vis-à-vis annual data for 2020.

Long-term fertility rate assumptions possible, but also optimistic

Why should fertility rates converge upwards towards those of most fertile countries?

Looking at fertility rates, here assumptions are very similar between the UN and EC. The EC projects the fertility rate to rise from about 1.52 in 2019 to 1.65 by 2070 for the EU. This follows from an assumed process of convergence across member states to the country with the highest fertility rate (France) over the very long term. This assumption of convergence towards the best performer is questionable in our view, especially when comparing forecasts with most recent fertility rate trends (**Figure 9** and **10**).

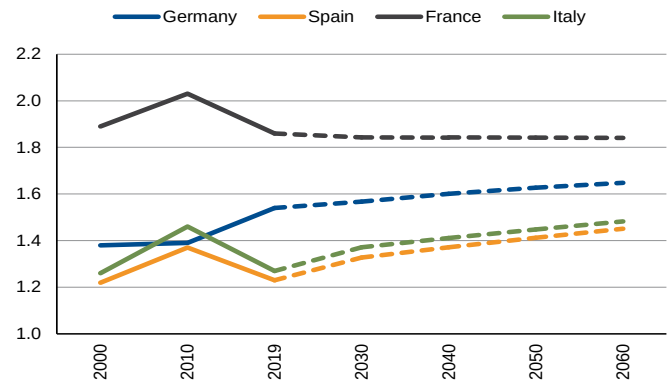
Downside risks to EU's demographic trends

There is significant uncertainty on the magnitude of demographic developments that will affect Europe in the next decades. Large discrepancies across forecasts from major institutions together with rather optimistic underlying assumptions on key variables point to further downside risks on the already expected adverse trends affecting the countries.

[7] Net migration data for Italy is strongly influenced by a statistical adjustment linked to the post-2011 census corrections; net migration in all other years was close to zero.

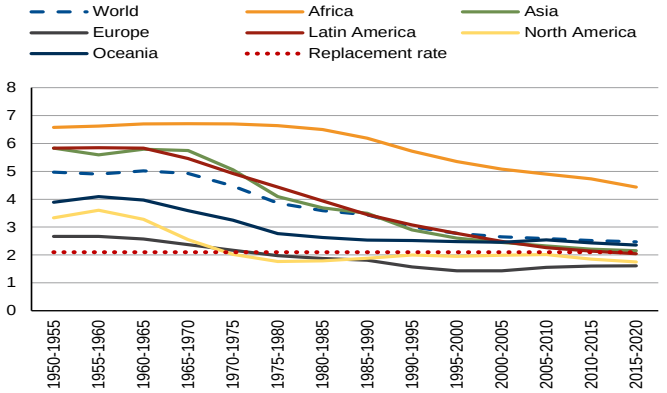
The demographic impact on EU sovereigns is underrated, raising long-term credit risks

Figure 9. Fertility rate projections



Source: Eurostat, Scope Ratings GmbH

Figure 10. Global overview of fertility rates



Source: UN, Scope Ratings GmbH

A global trend, with the US as the positive outlier?

The global context: China and Japan face similar challenges, US positive outlier

In a global context, most of the largest economies are set to see material declines in their labour force and associated increases in the number of people dependent on those in work. Specifically, China and Japan will face significant challenges from working-age population decline and ageing. Given their restrictive policies on migration, these two economies' demographics will be driven mostly by the natural change in their population.

Figure 11. Change in working-age population (20-64) from today (%)

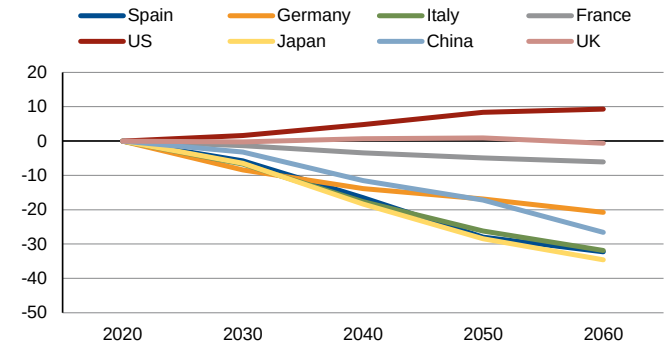


Figure 12. Change in working-age population (20-64) from today (%) – no migration

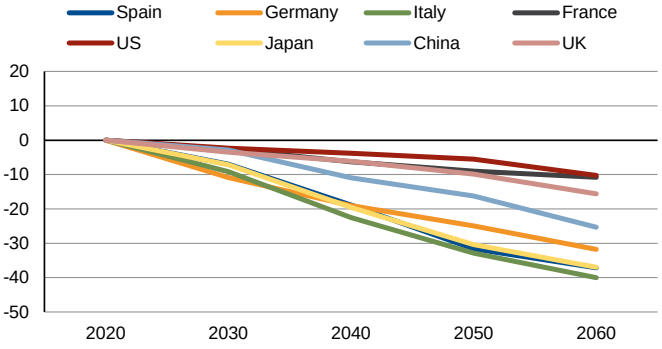


Figure 13. Old-age dependency ratio (20-64)

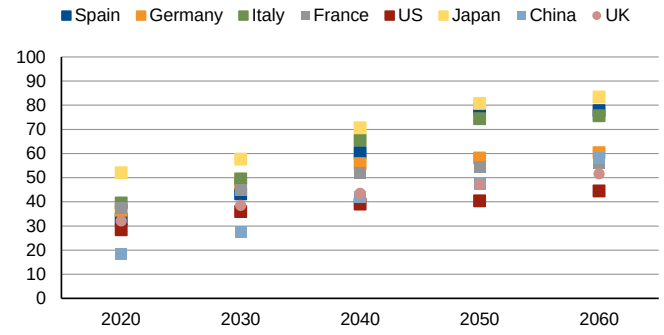
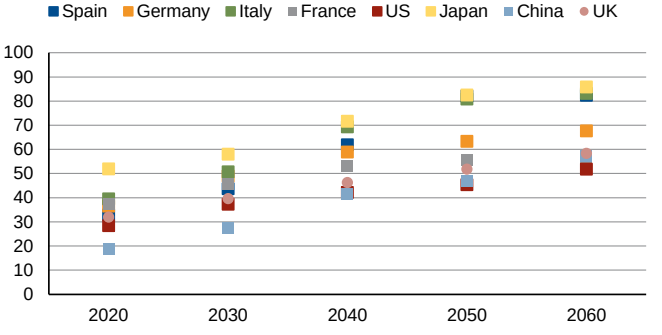


Figure 14. Old-age dependency ratio (20-64) – no migration



Source: UN, Scope Ratings GmbH

Countries need to be ready for ageing and labour force decline

Net migration is the key variable supporting favourable demographics, benefitting more open countries, like the US and Germany. This assumes, of course, that these countries maintain relatively open borders over the coming decades, and that emigration flows from emerging economies continue at an elevated pace. Downside risks in the UK relate to the evolving impact of Brexit and its reduced attractiveness to foreigners. Absent migratory flows, the US and UK workforce will also decline.

Annex I

Table 1: Change in Working-age population (20-64) from 2020 (%)						Table 2: Old age dependency ratio (20-64, %)					
	2020	2030	2040	2050	2060		2020	2030	2040	2050	2060
United Nation World Population Prospects 2019, medium fertility scenario											
Germany	0.0	-8.4	-13.9	-16.9	-20.8		36.5	47.7	55.7	58.1	60.3
France	0.0	-1.3	-3.5	-4.9	-6.1		37.3	44.9	51.9	54.5	56.0
Italy	0.0	-6.7	-17.7	-26.2	-31.9		39.5	49.5	65.5	74.4	75.6
Spain	0.0	-5.8	-16.5	-28.0	-32.3		32.8	43.2	60.3	78.4	77.7
European Commission Ageing Report 2021 – Eurostat 2019 population projections, baseline scenario											
Germany	0.0	-7.1	-10.5	-11.6	-14.0		36.7	46.4	52.2	52.8	54.3
France	0.0	-1.0	-3.2	-4.8	-5.5		37.2	44.9	51.7	54.8	55.9
Italy	0.0	-4.2	-12.5	-17.3	-19.9		39.5	48.0	61.4	66.5	65.5
Spain	0.0	-0.6	-6.8	-13.4	-14.8		32.5	40.9	54.0	64.7	64.1

NB: 2020 also refers to forecasts and not actual numbers

Source: UN, EC, Scope Ratings GmbH

Table 3: Fertility rates						Table 4: Life expectancy at birth				
	2020	2030	2040	2050	2060	2020	2030	2040	2050	2060
United Nation World Population Prospects 2019, medium variant scenario										
Germany	1.6	1.6	1.7	1.7	1.7	81.1	82.7	84.1	85.3	86.4
France	1.9	1.8	1.8	1.8	1.8	82.5	83.8	85.1	86.2	87.4
Italy	1.3	1.3	1.4	1.5	1.5	83.3	84.7	85.9	87.0	88.2
Spain	1.3	1.4	1.5	1.6	1.6	83.4	84.6	85.8	87.0	88.1
European Commission Ageing Report 2021 – Eurostat 2019 population projections, baseline scenario										
Germany	1.5	1.6	1.6	1.6	1.6	81.4	82.9	84.3	85.6	86.9
France	1.8	1.8	1.8	1.8	1.8	83.1	84.5	85.8	87.0	88.1
Italy	1.3	1.4	1.4	1.4	1.5	83.5	84.8	85.9	87.0	88.0
Spain	1.3	1.3	1.4	1.4	1.5	83.9	85.1	86.2	87.3	88.3

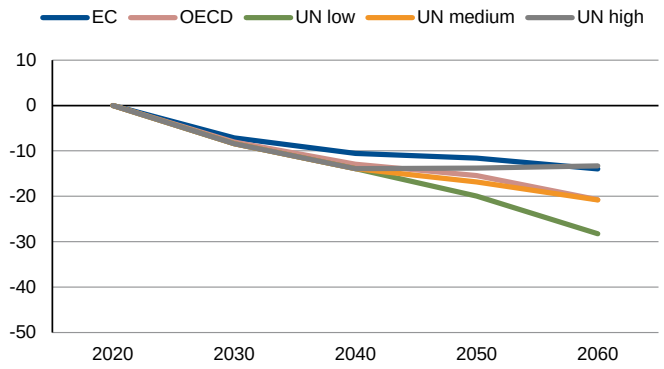
UN fertility rate projections refer to the 5-year average preceding the displayed year; EC life expectancy shown is calculated as the simple average between female and male values

Source: UN, EC, Scope Ratings GmbH

Annex II

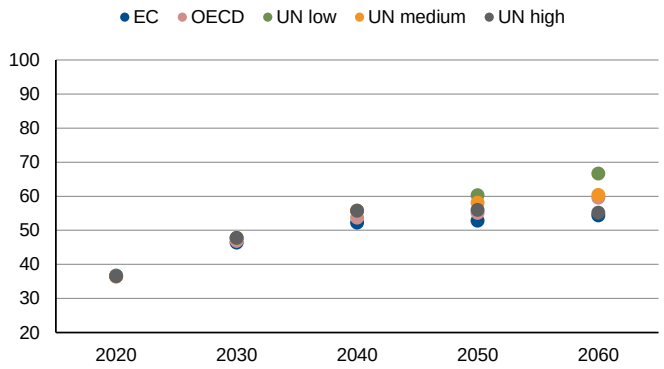
Germany

Figure 15. Change in working-age population (20-64) from today (%)



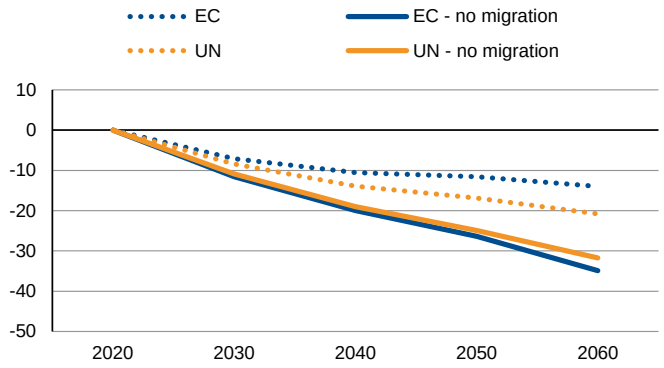
Source: EC, OECD, UN, Scope Ratings GmbH

Figure 16. Old-age dependency ratio (20-64, %)



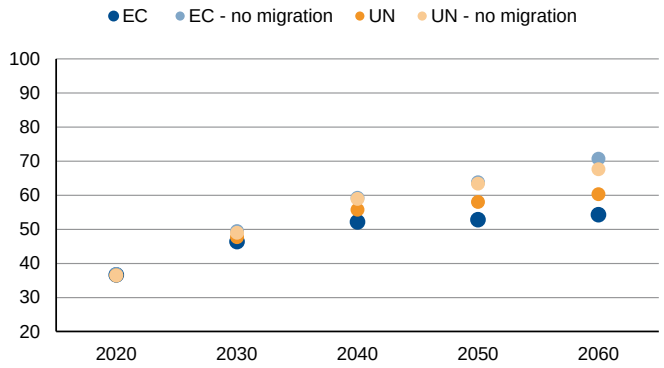
Source: EC, OECD, UN, Scope Ratings GmbH

Figure 17. Change in working-age population (20-64) from today (%) – baseline vs no migration scenarios



Source: EC, UN, Scope Ratings GmbH

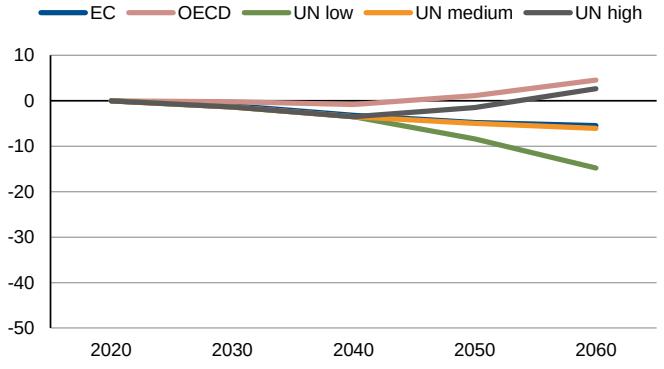
Figure 18. Old-age dependency ratio (20-64, %) – baseline vs no migration scenarios



Source: EC, UN, Scope Ratings GmbH

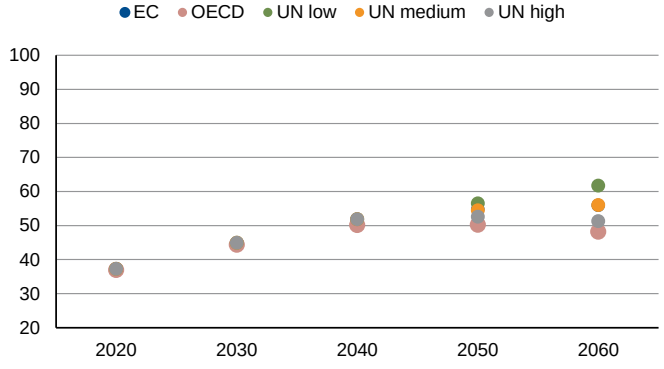
France

Figure 19. Change in working-age population (20-64) from today (%)



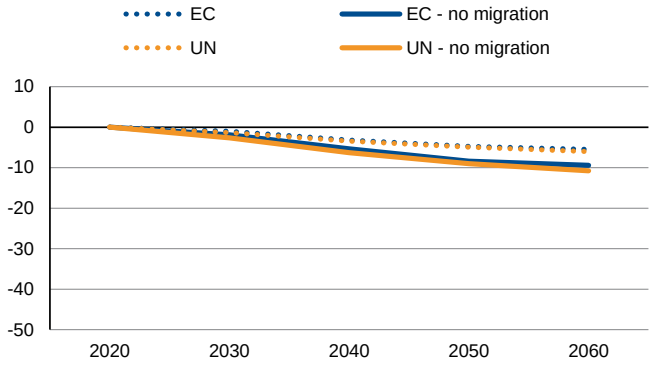
Source: EC, OECD, UN, Scope Ratings GmbH

Figure 20. Old-age dependency ratio (20-64, %)



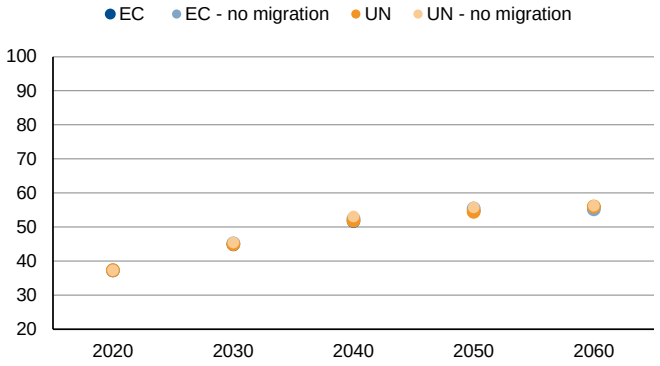
Source: EC, OECD, UN, Scope Ratings GmbH

Figure 21. Change in working-age population (20-64) from today (%) – baseline vs no migration scenarios



Source: EC, UN, Scope Ratings GmbH

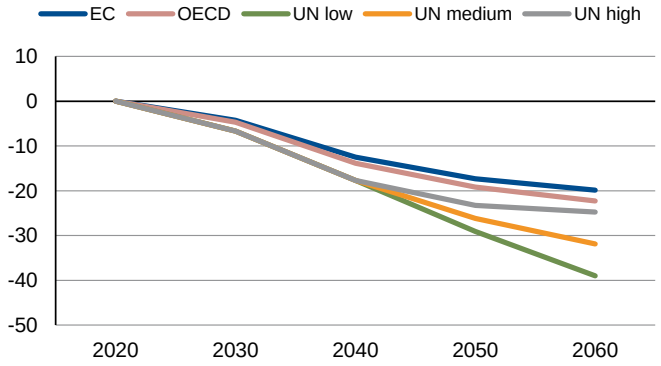
Figure 22. Old-age dependency ratio (20-64, %) – baseline vs no migration scenarios



Source: EC, UN, Scope Ratings GmbH

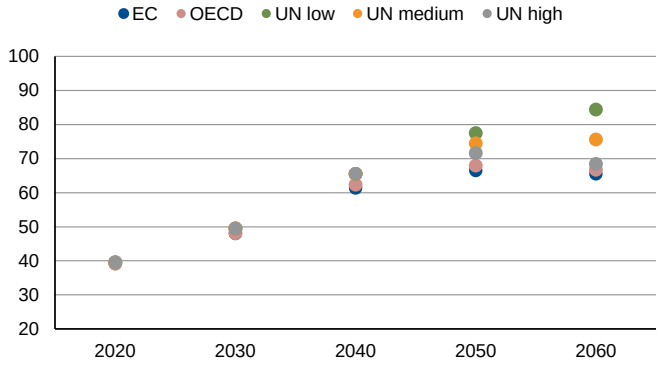
Italy

Figure 23. Change in working-age population (20-64) from today (%)



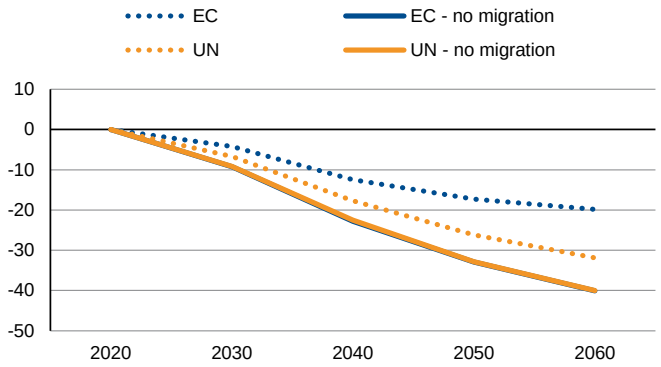
Source: EC, OECD, UN, Scope Ratings GmbH

Figure 24. Old-age dependency ratio (20-64, %)



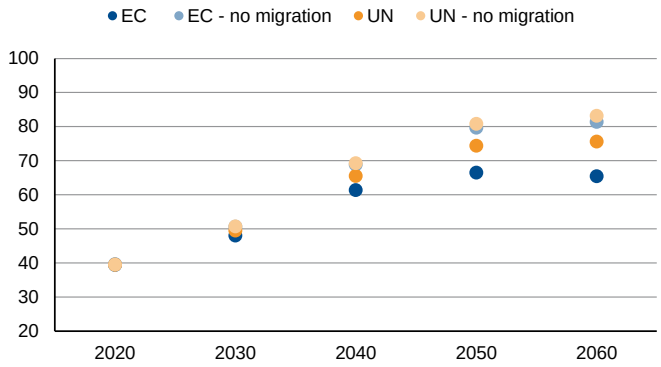
Source: EC, OECD, UN, Scope Ratings GmbH

Figure 25. Change in working-age population (20-64) from today (%) – baseline vs no migration scenarios



Source: EC, UN, Scope Ratings GmbH

Figure 26. Old-age dependency ratio (20-64, %) – baseline vs no migration scenarios



Source: EC, UN, Scope Ratings GmbH

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