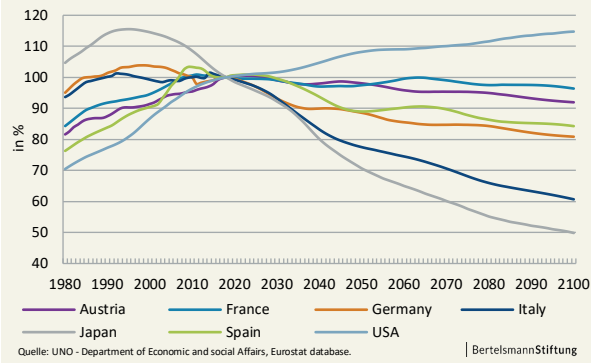


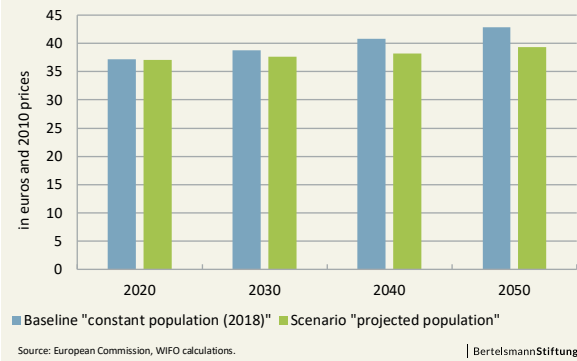
## Macroeconomic effects of demographic aging in Italy

Figure 1 Historic and expected development of working-age population (aged between 15-64 years), 1980- 2100



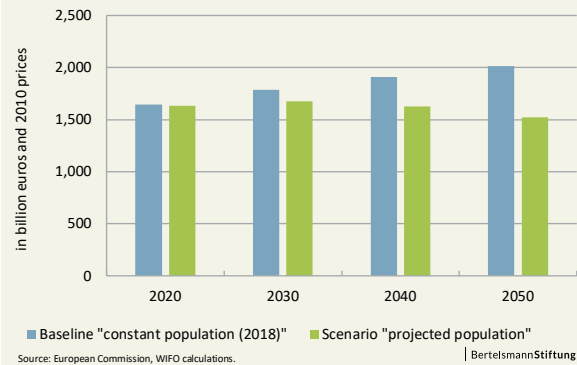
The working-age population in Italy is projected to initially age significantly and to shrink over the next 30 years. The decline is expected to be around 23% between 2018 and 2050 (see Figure 1). This will attenuate the country's overall economic productivity and will have considerable consequences for its overall economic development. This overview shows how demographic aging (the scenario "projected population") in Italy until 2050 will affect key macroeconomic indicators, compared to a scenario in which the population remains constant at the level of 2018 (the baseline "constant population (2018)").

FIGURE 2 Productivity per hour worked



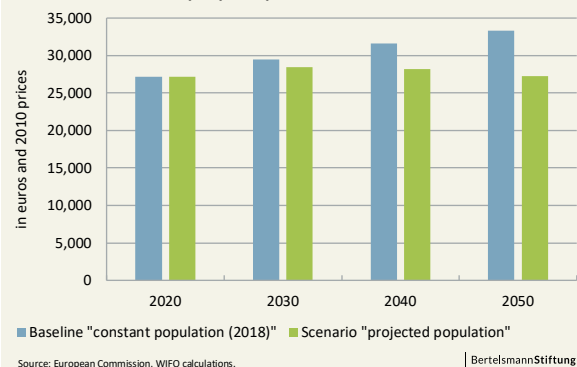
The negative effects of demographic aging are expected to attenuate the growth of labor productivity until 2050. The difference between the scenario "projected population" and baseline scenario should increase from around 1,2 euros per hour worked in 2030 to 2,6 euros in 2040 and to almost 3,6 euros in 2050 (in 2010 prices) (see Fig. 2).

FIGURE 3 Potential output



The growth of the real gross domestic product (GDP) ought to be significantly attenuated by demographic aging in the next few decades (see Fig. 3). In comparison to the baseline scenario, the increase is expected to be nearly 6% lower in 2030, nearly 15% lower in 2040 and nearly 25% lower in 2050. In absolute terms, demographic aging and its negative effects are expected to attenuate GDP by 286 billion euros in 2040 and by 493 billion euros in 2050 (in 2010 prices).

FIGURE 4 Potential output per capita

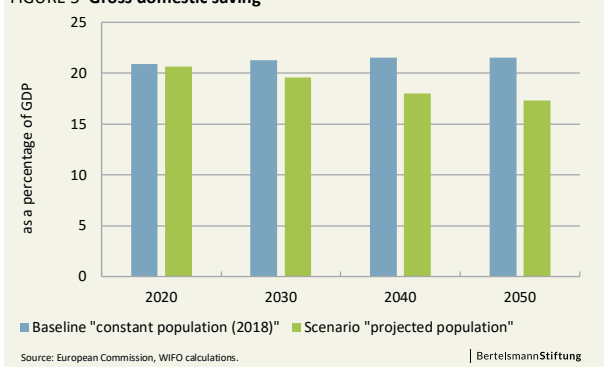


With respect to real GDP per capita, which is in effect the average material prosperity per inhabitant, this is expected to result in the following: In 2030 it will be lower by about 1,000 euros, in 2040 by about 3,400 euros and in 2050 by about 6,000 euros than if demographic aging had not occurred (in 2010 prices) (see Fig. 4).

In the baseline scenario, the savings rate remains virtually unchanged until 2050 (see Fig. 5). Demographic aging will bring about a sharp rise in the number of people of retirement age and a simultaneous decline in the working-age population. This will lead to a significant decline in the savings rate in the coming decades. The drop is expected to be by 2.8 percentage points (or about 13 percent) between 2018 and 2040, and to climb to nearly 3.5 percentage points (or about 16 percent) by 2050. In 2040, the savings rate should be nearly 3.6 percentage points lower and in 2050 by



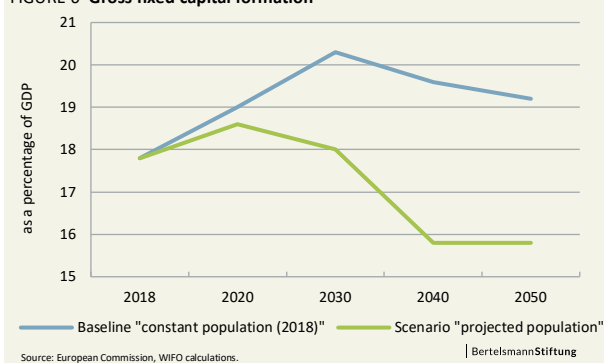
FIGURE 5 **Gross domestic saving**



about 4.2 percentage points lower than it would be without demographic aging.

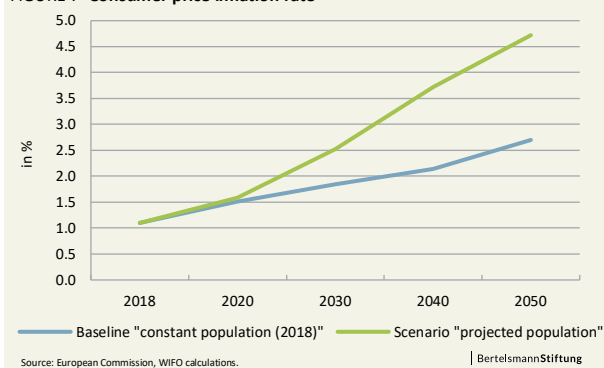
This will also reduce the supply of domestic capital and thus the scope for domestic investment (see Fig. 6). The investment rate is expected to drop by about 2 percentage points – or about 11% – between 2018 and 2040 or 2050, respectively. In 2040, the investment ratio is expected to be at 3.8 percentage points lower than in the baseline scenario. In 2050, the difference is anticipated to be 3.4 percentage points. However, in an open economy, the domestic capital supply can be supplemented by capital inflows from abroad.

FIGURE 6 **Gross fixed capital formation**



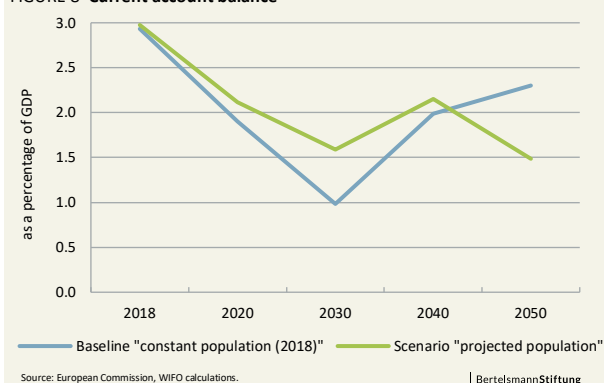
The simulation calculations also confirm the theoretical assumption of rising inflationary pressure due to demographic aging (see Fig. 7). In 2040, the inflation rate in the scenario “projected population” is expected to be 1.6 percentage points higher than in the baseline scenario; in 2050, the difference is expected to be 2 percentage points.

FIGURE 7 **Consumer price inflation rate**



The simulation calculations project a higher current account surplus by 2040 in the scenario “projected population” than in the baseline scenario. This surprising result – demographic aging generally should reduce current account surpluses – can be explained as follows: The current account balance reflects the difference between gross domestic saving and gross fixed capital formation. If the investment rate drops more sharply than the savings rate due to the age structure (see Figs. 5 and 6: the investment ratio is expected to fall below the baseline scenario ratio by around 2.3 percentage points in 2030, while the difference in the savings ratio is only 1.7 percentage points) the current account surplus increase (see Fig. 8). From 2040 onwards, the current account surplus is expected to decrease due to aging.

FIGURE 8 **Current account balance**



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