

# TURNING SILVER INTO GOLD

## *Thinking beyond Belgium's demographic shock*

Belgium is at a demographic tipping point, driven by its aging population, and exacerbated by economic headwinds and rising global competition. To remain resilient and prosperous, the country needs significant structural reform. In this report, ThinkBeyond argues that the tipping point is now and explores the structural levers available to address the profound impact of the aging population. Current plans are not moving the country out of the danger zone. Additional reforms are crucial to boost productivity, to increase workforce participation, to develop a forward-looking migration strategy and keep the pension- and healthcare system affordable. Beyond a report, we created a simulation tool that allows the reader to run his own long-term scenarios and discover the depth of reform needed.

ThinkBeyond




ThinkBeyond is an initiative founded with the mission to contribute with powerful insights to a prosperous and future-proof Belgium. ThinkBeyond unites diverse professionals who are passionate about addressing societal issues that will shape our country and resonate deeply with them.

ThinkBeyond operates independently, as well as politically, ideologically, and financially. Member contributions are voluntary and unpaid, and the modest operations are funded by its founders. ThinkBeyond's research is supported pro bono by an international management consulting firm. ThinkBeyond conducts original research, leveraging a broad network of national and international experts. Our research is fact-based, analytically structured, and gearing towards long-term perspectives. We aim to share our insights publicly twice a year, hoping to influence public debate, challenge leaders, and inspire meaningful change.

ThinkBeyond aspires to maintain a constructive, non-polemical approach in its work.

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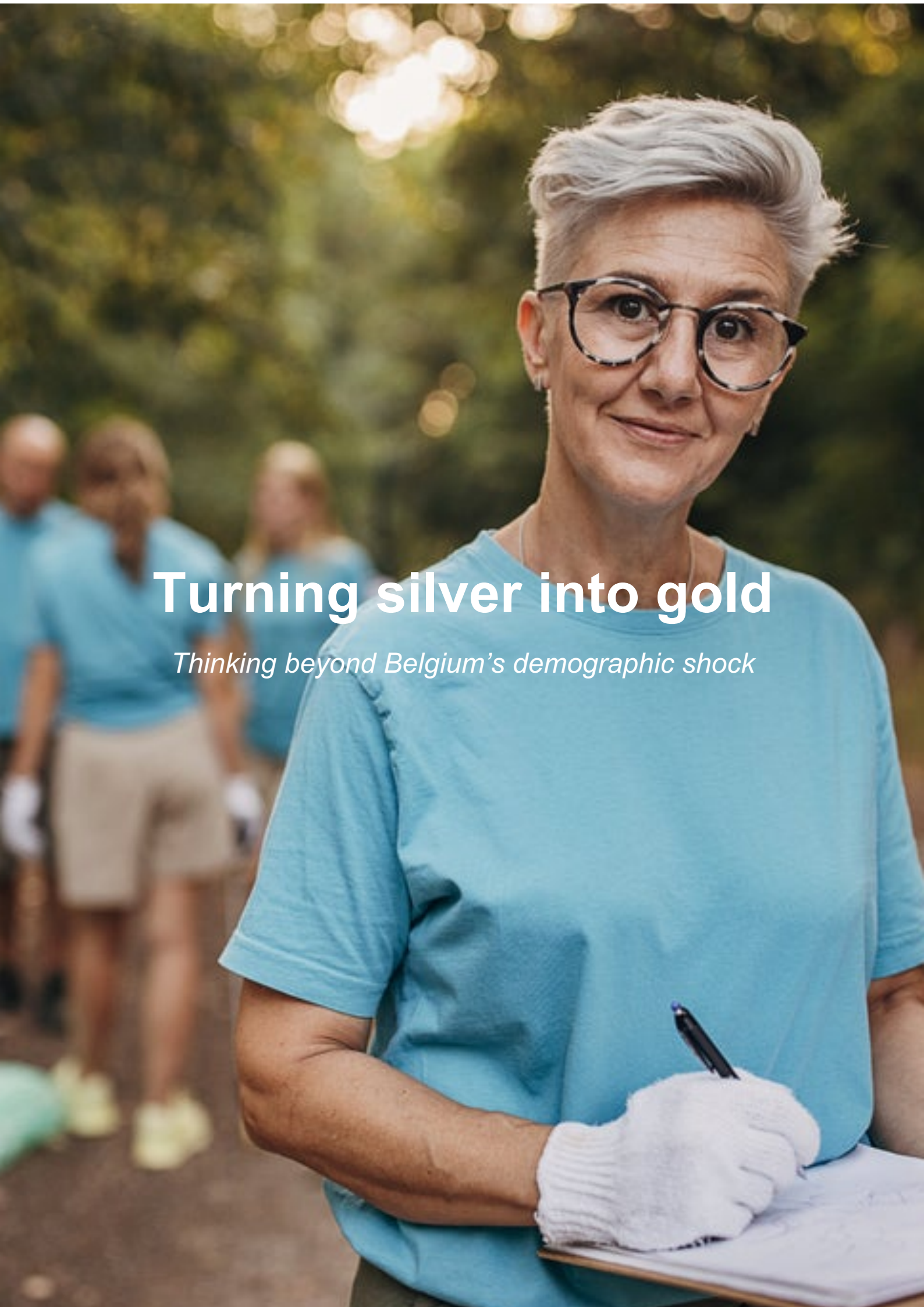
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**Turning Silver Into Gold**

Thinking beyond Belgium’s Demographic Shock

March 2025



# Turning silver into gold

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# Executive summary

Our inaugural report addresses the impact of the demographic shock, serving as a catalyst for ongoing reflections and future reports.

## Belgium's aging population challenges its long-term resilience and prosperity – The tipping point is now

Belgium is at a demographic crossroad. The retirement of the Baby Boomer generation, coupled with increasing life expectancy and a persistently low fertility rate, is accelerating demographic shifts. In 2024, individuals aged 65 and older comprised around 20% of the total population. By 2050, this demographic is projected to represent a quarter of the population. At that time 43% of the population is projected to be older than 50. Consequently, the workforce is shrinking, and expenditures on pensions and healthcare are anticipated to rise from already approximately 20% of GDP in 2024 to around 24% by 2050. These challenges are exacerbated by ongoing budget deficits, already high debt burdens, and slowing productivity growth.

To research and quantify the longer-term economic impact of aging, ThinkBeyond has developed a simulation tool. This on-line tool builds a simulation capability on top of statistics provided by the Study Group of Aging (SGA) of the Planning bureau and further European data sources. For this report we simulated three scenarios: 1. Reference case from the Study Group on Aging (SGA)(, 2. Status Quo and 3. Projected government plan. We invite the reader to create and discover his own by using our online tool, to which you can request access on the website www.ThinkBeyond.be. Once you register for access, you will receive an email with a short video and text explanation of the tool and a link to access it online.

In each simulated scenario, Belgium's longer term financial resilience is seriously challenged through rising public debt levels, and its prosperity comes under pressure driven by slowing growth rates (Figures 1 and 2).

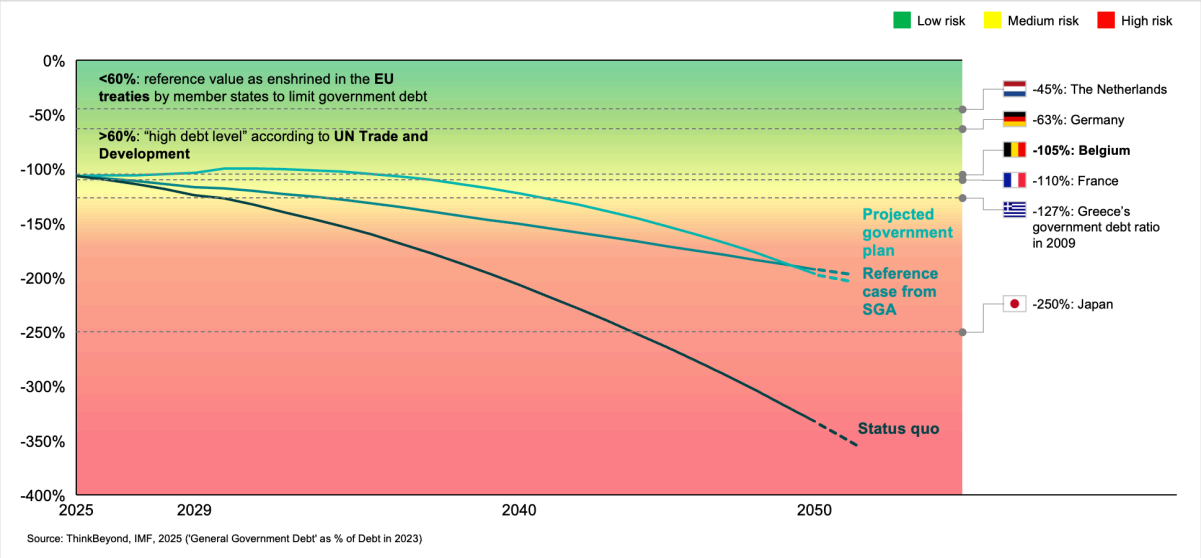



*Figure 1: Belgium's debt ratio projections, in the three scenarios analyzed in the report*

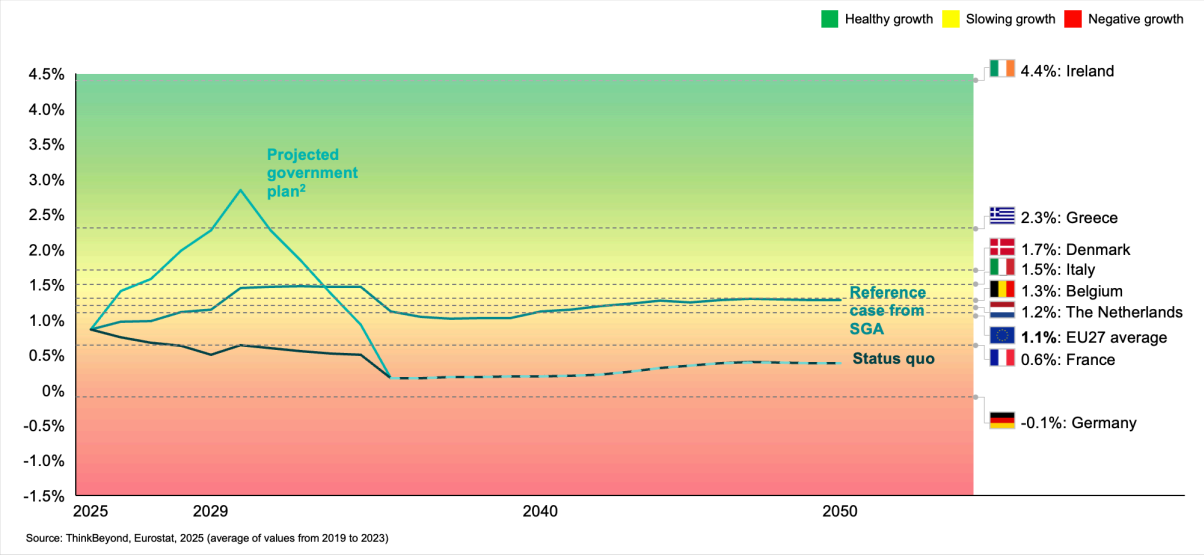



*Figure 2: Belgium's GDP per capita growth projections, in the three scenarios analyzed in the report*

Beyond the economic impact illustrated above, aging will challenge our capacity to provide adequate healthcare, put a strain on social cohesion and intergenerational solidarity, and will call for significant infrastructure investment and a rethink of our education system.

## Structural, longer-term oriented reforms can still turn Silver into Gold

While raising awareness is a prime objective of our report, fostering action is paramount. ThinkBeyond advocates for multidimensional reform around 5 levers. It is not too late, concurrent and sustained reforms can bring Belgium back on a healthy track.

In the full report ThinkBeyond provides thoughts and examples of action from other countries for each of the levers:

[2] The growth in Scenario 3 between 2025 and 2029 is very positive due to the current government targets for rapid increases in the employment rate coupled with limited decreases in productivity growth. From 2030 onwards, both productivity growth and the employment rate stabilize, resulting in consistent growth stagnation.

1. **Boosting productivity**: Productivity growth is, together with labor force growth, one of the two key engines of economic growth in a country. Productivity in this report is defined as the contribution to GDP per worker.
2. **Increasing the number of employed individuals (through workforce participation increases and selective migration management)**: Increases in the number of employed individuals are key to maintain a sustainable worker-to-pensioner ratio and to promote economic growth.
3. **Improving public finances savings and investments levels**: Improving public finances through government expense decreases and/or revenue increases is key to create a primary budget surplus (over the cycle), which in turn should reduce the debt of the country.
4. **Reforming the pension system**: Encouraging longer workforce participation to alleviate the burden on pension systems can boost growth and help reduce government debt.
5. **Reforming the healthcare system**: Ensuring that healthcare expenses as a percentage of GDP reduce over time without sacrificing quality can help reduce government debt.

Using our tool to compare the relative impact of those levers, productivity growth emerges as the most significant contributor, with increasing the number of people working coming second (Figure 3).

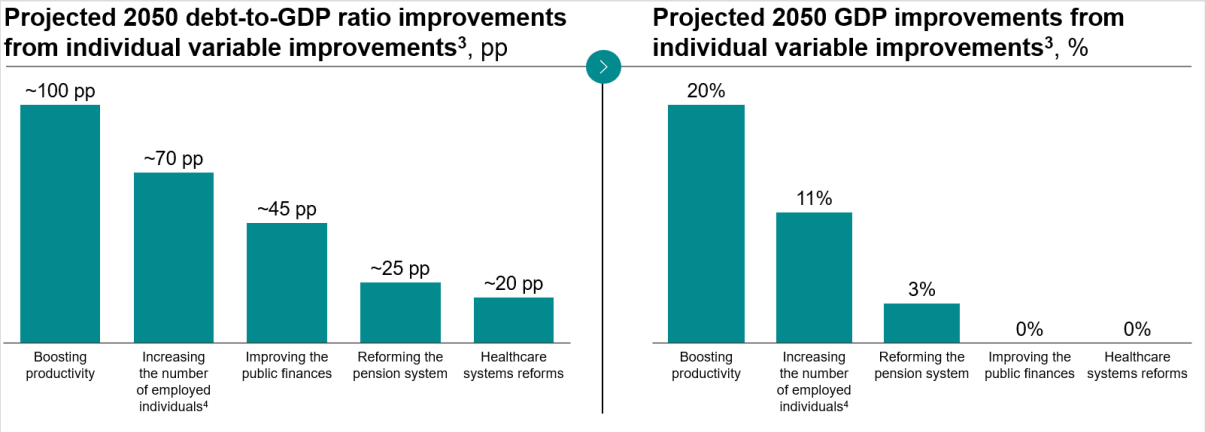



***Figure 3: Estimated percentage point reduction in the 2050 debt-to-GDP ratio and estimated percentage increase in the 2050 GDP from improvements in input variable values***

Current trajectory and plans do not bring Belgium into a resilient and prosperous future. To turn Silver in Gold, the ThinkBeyond report stresses the need for fundamental long-term oriented reform. Belgium needs to: 1. Establish and start soon a comprehensive program to structurally increase productivity, aiming to at least bringing Belgium's economy on par with best-in-class productivity growth in comparable economies (e.g., 1.4% for North America and 1.7% for Advanced Asia between 1997 and 2022); 2. Bring employment rates up to 80+%, and complement the current working population by targeted migration; 3. Reverse the annual public primary deficit to a surplus (over the cycle), allowing to regain a healthy public

[3] Projected percentage point reduction in the 2050 government debt-to-GDP ratio/increase in 2050 nominal GDP from variable improvement, compared to "Scenario 2: Status quo," assuming all other variables remain constant, and each input variable is adjusted individually to reflect the needed reforms.

[4] Including increases in workforce participation and net migration.

investment capacity; 4. Further reform the pension systems linking the retirement age to the increasing life expectation and nudging people to work longer (e.g., more flexibly) ; and 5. Recast the healthcare system by eliminating waste, putting focus on prevention and on home- and first-line care and by tackling the remaining personnel shortage.

## Further research planned by ThinkBeyond

This report on the demographic shock highlights the need for structural reform. ThinkBeyond will elaborate the individual levers more in detail in its forthcoming reports, taking both an economic and broader societal view. We believe Belgium can transform its demographic challenges into opportunities, laying the foundation for sustainable growth and societal well-being.

# Introduction: Preparing Belgium for an aging population

Belgium is on the brink of a major demographic shift. With the baby boomer generation retiring, birth rates declining, and life expectancy increasing, nearly one in three Belgians will be over 60 by 2050. This aging population will affect every aspect of our society—from the economy to healthcare and social services.

While this brings considerable difficulties, it also presents an opportunity to rethink how we can create a sustainable and inclusive future for everyone. To help us better understand and tackle the aging wave, this report describes comprehensively the challenges and lays out a solution space.

The report is structured around three chapters:

- **Chapter I:** The tipping point in demographic transition challenges the fundaments of our country
- **Chapter II:** Five strategic dimensions to explore and address in navigating Belgium's demographic challenge
- **Chapter III:** Next steps to prepare strategic reforms to tackle the aging crisis and boost economic stability

The report also contains two appendixes:

- **Appendix I:** Detailed description of the scenarios
- **Appendix II:** Introduction to the simulation tool and explanation of its methodology

This report on aging is a starting point for ThinkBeyond's reflections. Our future reports will dive deeper into several critical levers that are highlighted in this report, and we will continue to explore other critical themes for Belgian society, always striving to transform insights into impactful solutions.

Let's build a future-ready Belgium together.

# I. The tipping point in demographic transition challenges the fundaments of our country

The retirement of the Baby Boomer generation, combined with increasing life expectancy, and a persistent low fertility rate, is accelerating the country's demographic shifts. While the aging population has been a topic of discussion for years, we are now at a stage where its impact is challenging fundamentally the fundaments of our country. The workforce is shrinking, and costs for pensions, healthcare, and social services are rising rapidly. Compounded with a bleak starting point: Ongoing budget deficits, record debt burden and slowing productivity growth, these challenges put our economy and social stability in danger.

## The demographic shift is accelerating

Belgium is already witnessing the early stages of demographic aging. In 2024, the 65+ population accounts for around 20% of the total population. By 2050, this same age group is expected to account for a quarter of the total population (Figure 4).

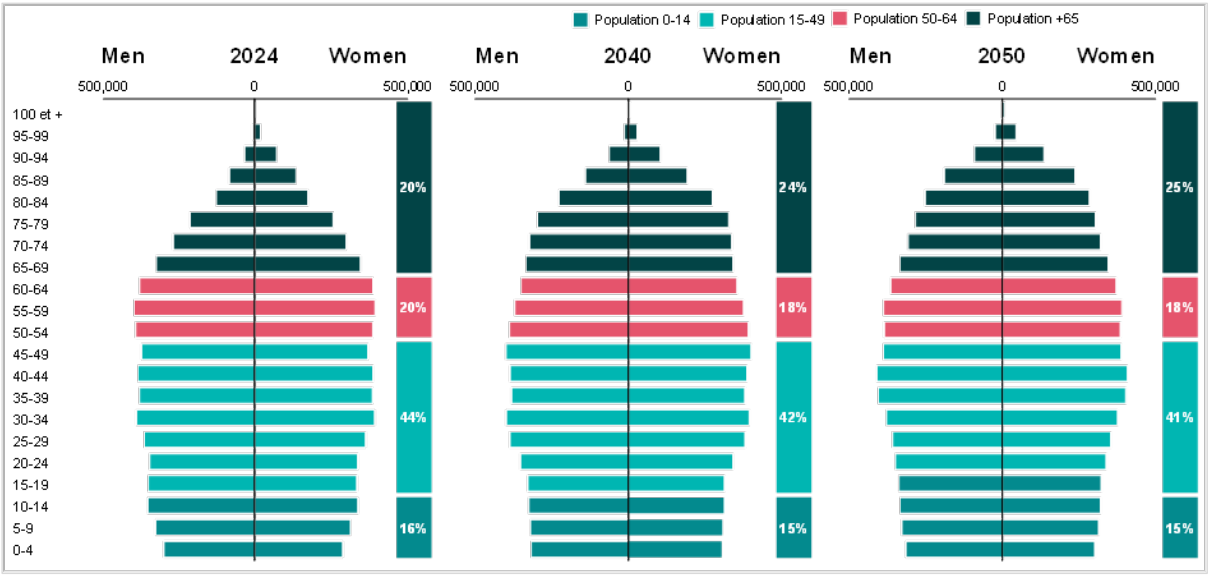



*Figure 4: Belgian population 2024, 2040, 2050, # - SGA, June 2024*

The timebomb has been ticking for a while: Population aged 65 and above has grown faster than any other age group, increasing by about 1.2% per year over the last 40 years. Although this growth rate is expected to slow to 0.83% per year, the expansion of this age group will continue steadily through 2070. (Figure 5). The old-age dependency ratio, which indicates the ratio between the working-age population and the population over 65 years old, has been shrinking from 5,4 in 1960, to 3,1 in 2024 and will fall to 2,2 in 2070.

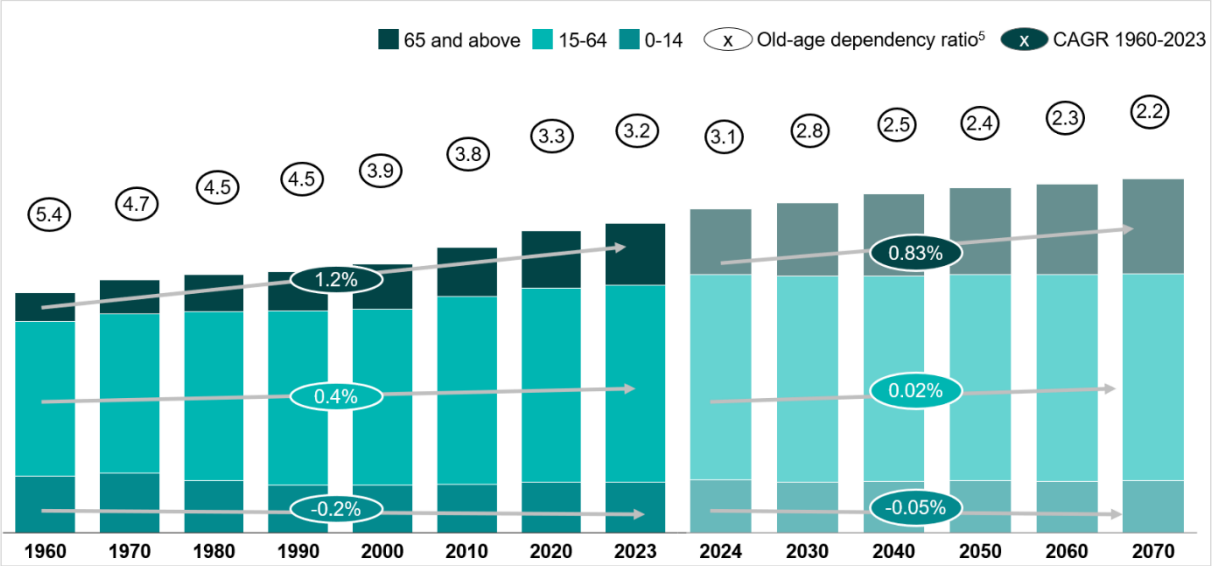



*Figure 5: Belgian population evolution, '000 – Source: SGA, June 2024*

The aging trend significantly impacts financial systems. Healthcare and pension costs, already substantial, are projected to consume an increasing share of Belgium's GDP (Figure 6). This places immense pressure on the national budget.

For individuals, these demographic shifts may lead to reduced pensions, limited healthcare services, and higher taxes.

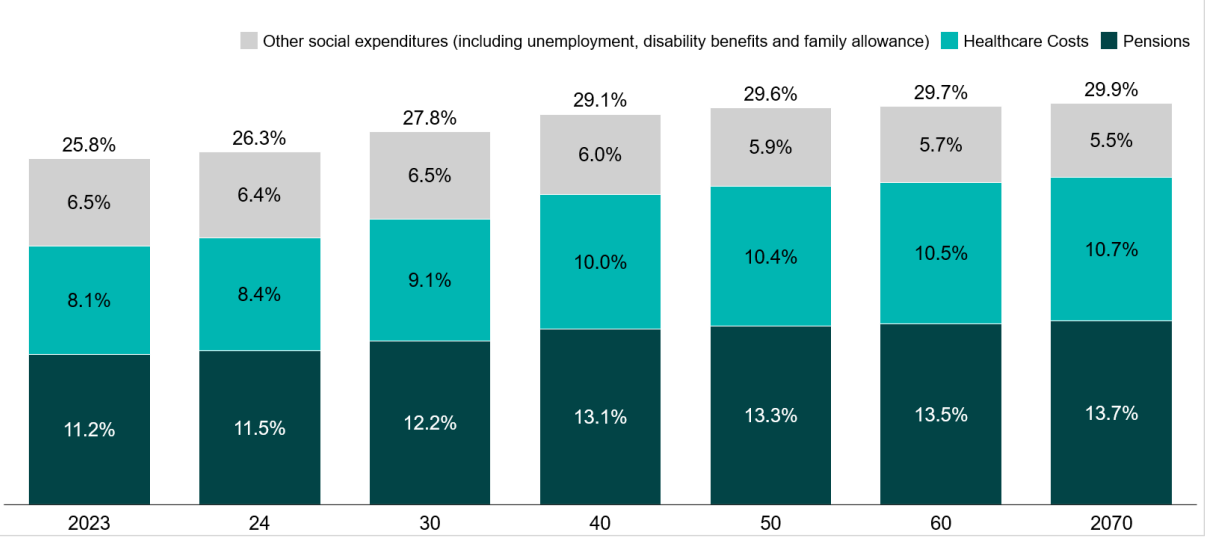



*Figure 6: Projected Belgian social expenditures, as a share of GDP; Source: Reference scenario SGA, June 2024*

[4] The old-age dependency ratio (working-age individuals to pensioners) differs from the worker-to-pensioner ratio (employed individuals to pensioners). The old-age dependency ratio is always larger (or equal) to the worker-to-pensioner ratio.

The reality of demographic and economic changes is no longer a distant concern—it is happening now.

## Quantifying the economic impact of aging

To address the challenges associated with aging, ThinkBeyond has made significant strides in researching and quantifying their impact on Belgium's long-term trajectory. This effort has been facilitated by the development of a simulation tool that leverages insights from the Annual Report of the Study Group on Aging, published in July 2024. A more in-depth description of the simulation tool is available in Chapter IV of this report.

Our simulation tool uses six input factors – labor productivity growth, employment rate, primary balance improvements, legal retirement age, healthcare costs growth, and net migration – to calculate the future evolution of three key economic indicators:

- **Worker-to-pensioner ratio:** A demographic metric reflecting the balance between workers and retirees.
- **GDP per capita growth:** A measure of economic health and average individual prosperity.
- **Government debt as a percentage of GDP:** A marker of fiscal sustainability and investment capacity.

Together, these metrics provide a comprehensive lens through which we can understand Belgium's economic trajectory and the scenarios that could shape its future.

### 1. Worker-to-pensioner ratio; a looming imbalance

The demographic shift has far-reaching implications: Each worker will shoulder a larger financial burden to support retirees. The Belgium's retribution pension system (pay-as-you-go) intensifies this strain, as current retirees' pensions are paid directly by today's workforce (Figure 7).




*Figure 7: Belgium's worker-to-pensioner ratio, 2024*

For individuals, this means less disposable income, fewer resources for savings or investments, and potentially reduced quality of life as government budgets are stretched. For younger generations, planning—through personal savings, and private pension plans—will become increasingly essential.

### 2. Growth of GDP per capita; Welfare under potential pressure

GDP per capita is a widely used measure of economic performance, offering insights into a country's productivity and average prosperity. While it does not account for more subjective factors like quality of life, it remains a vital indicator of economic health.

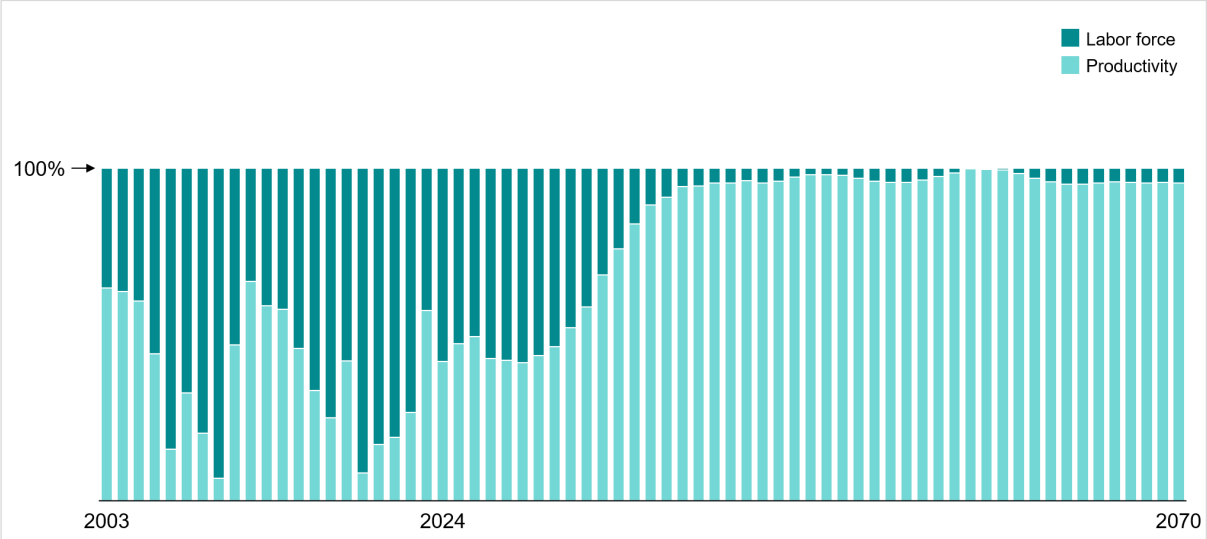



*Figure 8: Impact of labor productivity vs. labor force on Belgium's GDP growth (2003–2070) Historical and projected contributions (total = 100%, 5-year moving average)*

Economic growth depends on two key factors: Productivity increases and a growing labor force.

Historically, Belgium's GDP growth has relied heavily on labor force expansion. Between 2000 and 2024, the working-age population grew by 12.3%, accounting for 63% of total GDP growth, while productivity contributed 37%. However, this growth engine is coming to a halt (Figure 8). Over the next three decades, the working-age population will stagnate and then decline, with the ratio of active workers to retirees falling from 2.2 workers per retiree today to just 2 by 2050.

Belgium's GDP per capita is expected to grow modestly until 2030. Two key challenges underpin this modest growth: (1) Fewer contributors to GDP due to a labor force that is projected to shrink starting in 2030 and (2) A stagnant productivity growth over the last decade that limits potential economic output.

If these trends persist, Belgium may struggle to maintain household prosperity and fund its welfare state. Unlike higher-growth and/or less-indebted countries, Belgium will face difficulties sustaining competitiveness and absorbing the economic impacts of an aging population. Neither will it then be able to adequately tackle its carbon reduction and geopolitical commitments.

### 3. Government debt ratio: A high-risk profile

Belgium's government debt already exceeds 100% of GDP—placing it among the top five highest in the EU. Rising costs of pensions and healthcare, are expected to accelerate sharply, compounding existing fiscal pressures.

The European Commission ranks Belgium among the EU's three least-prepared countries for demographic change alongside Hungary and Slovakia, citing slow growth, persistent deficits, and aging-related expenditures. Unlike these EU counterparts, Belgium shows limited potential for productivity-driven growth to mitigate these challenges.

As a result, the European Union has classified Belgium's medium- and long-term fiscal sustainability as "high risk," highlighting the urgent need for decisive measures to stabilize public finances and

address the structural issues affecting the country's economic future.

## Three scenarios

To illustrate the potential outcomes of these demographic and economic transformations, we simulated using the tool three external scenarios. These scenarios are not predictions but plausible trajectories, reflecting varying levels of reform and adaptation.

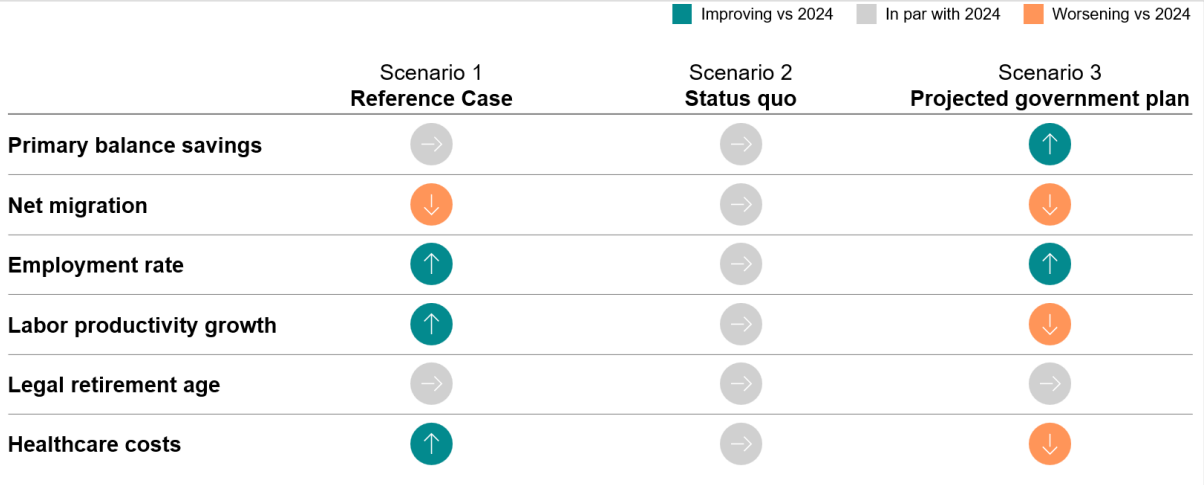



*Figure 9: Schematic comparison of three plausible scenarios*

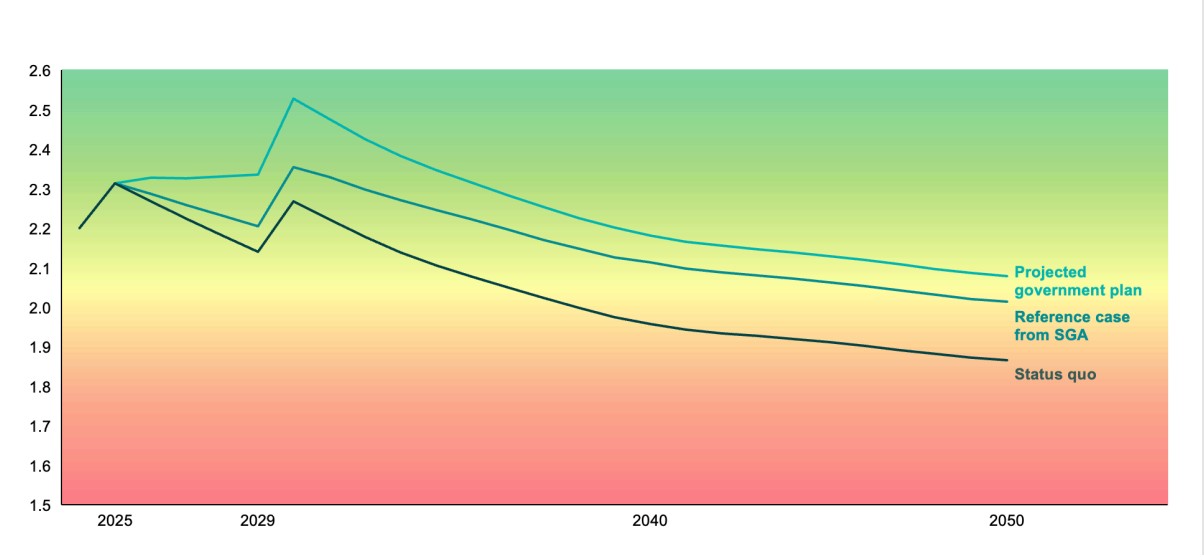



*Figure 10: Belgium's worker-to-pensioner ratio[5], in the three scenarios analyzed in the report*

[5] The worker-to-pensioner ratio (employed individuals to pensioners) differs from the old-age dependency ratio (working-age individuals to pensioners). Between 2025 and 2030, variations are mainly due to rapid changes in the employment rate. In 2030, the increase in the legal retirement age to 67 is the primary influence. After 2030, with all critical factors constant, the ratio deteriorates due to population aging.

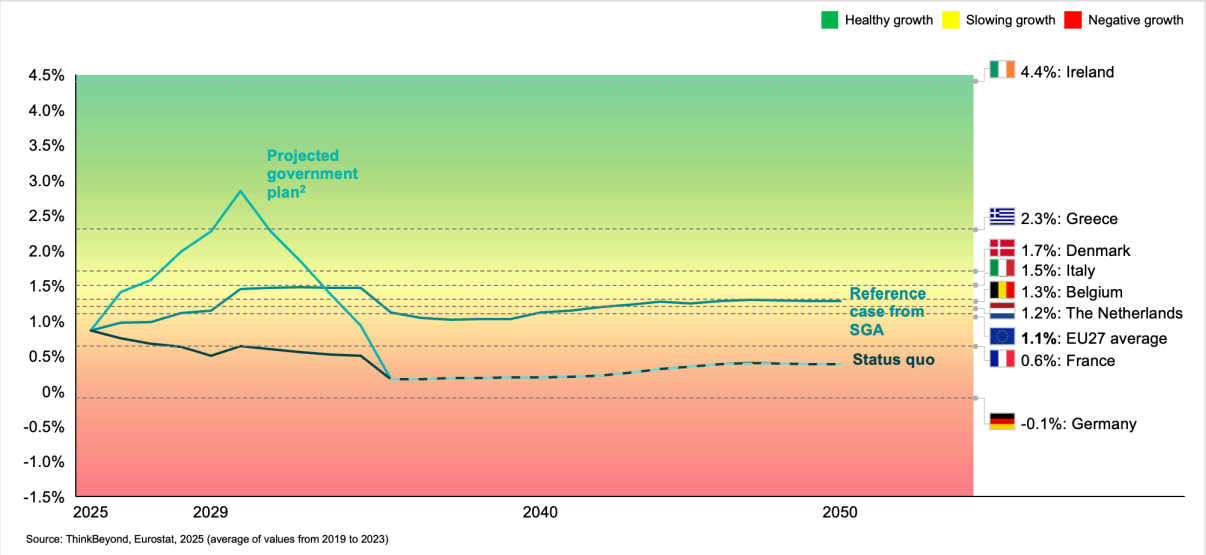



*Figure 11: Belgium's GDP per capita growth projections, in the three scenarios analyzed in the report*

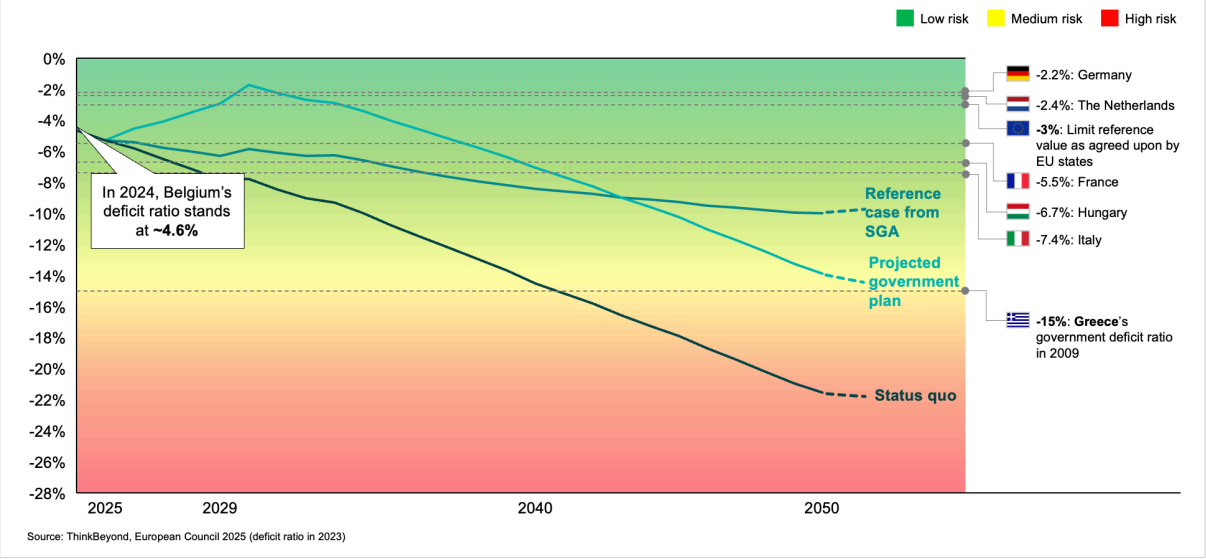



*Figure 12: Belgium's primary balance projections, in the three scenarios analyzed in the report*

[2] The growth in Scenario 3 between 2025 and 2029 is very positive due to the current government targets for rapid increases in the employment rate coupled with limited decreases in productivity growth. From 2030 onwards, both productivity growth and the employment rate stabilize, resulting in consistent growth stagnation.

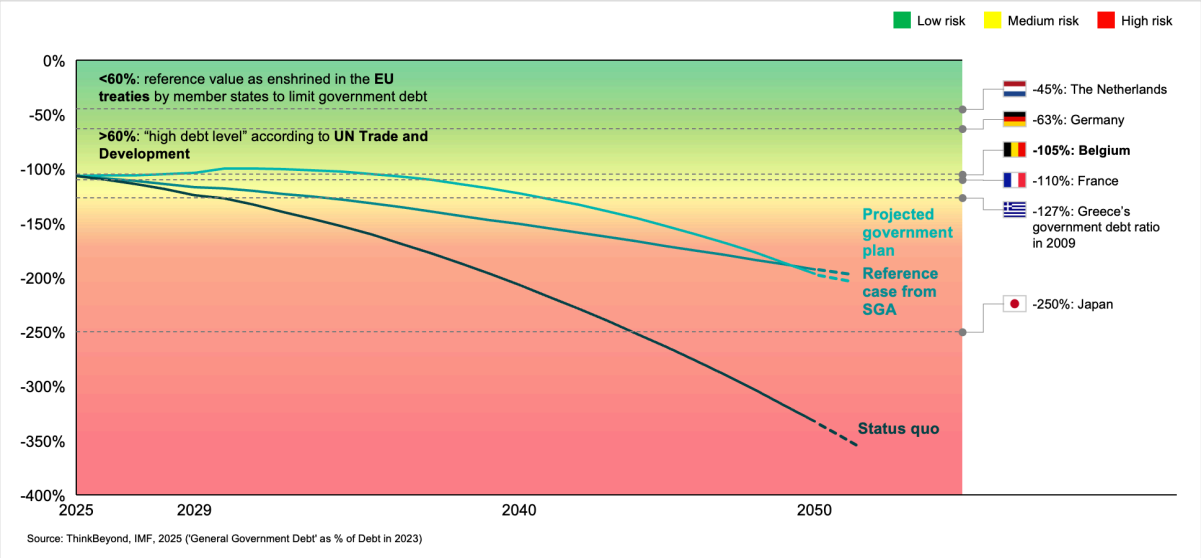



*Figure 13: Belgium's debt ratio projections, in the three scenarios analyzed in the report*

## Scenario 1: Reference case - Following the current trajectory

Inspired by the SGA projections of the Planning Bureau, this scenario represents the most likely outcome if (1) no major policy changes or reforms are implemented and (2) if Belgium succeeds in making serious progress in labor productivity[1], surpassing historical trends.

If the current trends continue, Belgium's debt-to-GDP ratio is projected to reach approximately 150% by 2040 and 180% by 2050. Such a rise would trigger a dangerous debt spiral, straining the economy and potentially burdening future generations with higher taxes, Infrastructure investments would decline, leading to deteriorating public infrastructure and services, maybe even leading to a lack of pensions for the next generation.

For Belgium's economic prospects, raising the projected productivity growth from 0.5% to 1.4% per year by 2035 would mean a reversal of a downward trend that has been ongoing for 5 decades and hence remains highly uncertain. Furthermore, international obligations—such as 2% (or even more) for NATO commitments and 1% for climate change initiatives —would divert resources from domestic investments, likely leading to further cuts in key sectors.

## Scenario 2: Status quo – Strain and stagnation

This scenario envisions a future marked by stagnation and rising strain due to insufficient reforms and escalating fiscal burdens. Here, the primary balance would start at its 2024 level and deteriorate with extra aging-related social expenditures (see Fig 6) throughout the years. Productivity growth would also stagnate around the recent years' level of 0.5% annually, and employment rates would remain unchanged at 71.8%, preventing any significant economic growth.

In this scenario, Belgium's debt-to-GDP ratio would soar to almost 200% by 2040, largely surpassing Greece's crisis levels. The economy would struggle, forcing severe austerity measures and deep cuts to public services. Healthcare, education, and infrastructure projects would be abandoned, leading to widespread

dissatisfaction among citizens, especially the younger generation, who would face higher taxes, fewer opportunities, and a decline in living standards.

This could lead to a prolonged period of economic stagnation and social decline, with few resources available to tackle these critical issues.

## Scenario 3: Projected government plan – Initial change of trajectory

The current government plan envisions a proactive response to Belgium's challenges, with employment rate and primary balance reforms playing a significant role. By bringing the employment rate up to 80%, Belgium could increase its worker-to-pensioner ratio, reaching 2.0 by 2050 (vs 2.2 in 2024), which would relieve pressure on social systems. By 2029, the primary balance is projected to improve by 2.0% relative to Scenario 2. This reflects a long-term structural enhancement in the balance between spending and income. With these reforms, Belgium could reduce its debt-to-GDP ratio to around 100% by 2029.

Nonetheless, without further reforms to increase productivity growth, the legal retirement age, or net migration, Belgium's debt-to-GDP ratio would soon go back to alarming levels, reaching almost 115% in 2040 and an alarming 180% in 2050.

In other words, the current government plan is a needed balanced reform approach that could enhance Belgium's public finances in the short term. However, more ambitious long-term reforms would still be necessary for the country to maintain a positive outlook for the decades to come.

### Insights from the scenarios

The three scenarios underscore the critical need for prompt reforms and enhanced productivity. Without significant progress, Belgium risks rising debt (and even potential financial crisis), stagnation, and diminished public services. It is urgent to tackle politically sensitive issues like pension reform and targeted labor migration now to build a resilient economy capable of withstanding future shocks, including financial crises, pandemics, and geopolitical upheavals.

### Broader challenges driven by aging

While economic reforms remain essential, the broader scope of action includes additional societal and infrastructural challenges:

- **Healthcare capacity**

Belgium faces a critical shortage in healthcare workers. By 2040, according to some reports, Belgium will require 124,000 additional healthcare workers to maintain current service levels[2]. This shortage could result in care delays of up to several months for non-critical treatments.

- **Social cohesion**

The growing emphasis on individual freedom and cultural diversity, coupled with generational divides and rising tensions due to migration, has weakened community bonds, making it more challenging to foster a shared sense of belonging. This fragmentation is especially pronounced among lower-income groups, where community ties are deteriorating,

and resource disparities are widening. Consequently, many people feel increasingly disconnected from decisions regarding healthcare, housing, and economic policies. This has led to a deepening sense of powerlessness and insecurity, particularly among the elderly and economically disadvantaged.

- **Infrastructure adaptation:**

The aging population will necessitate substantial modifications to public infrastructure to ensure it remains accessible and functional for older citizens. This encompasses public transportation, housing, and healthcare facilities. Hospitals, clinics, and long-term care facilities will likely need expansion and redesign to meet the increasing demand for elder care. Additionally, recreational areas and public spaces will require enhancements to ensure inclusivity for all age groups, which will redirect significant public funding.

- **Educational alignment:**

Belgium faces a significant challenge in aligning its education system with the evolving needs of the labor market. Almost 40% of the workforce is either overqualified or underqualified for their current roles, highlighting a broader mismatch between education and employment. Furthermore, Belgium is falling short in its lifelong learning efforts, with only 25.6% of adults aged 25-64 having received training in the past year, compared to the EU target of 47%. Bridging this gap through targeted education and training programs is essential to maintain a competitive workforce.

These societal implications underscore the importance of preparing not only for economic shifts but also for the broad infrastructure, healthcare, and social cohesion challenges that accompany an aging population.

# II. Five strategic dimensions to explore and address in navigating Belgium's demographic challenge

In Chapter 1 we showed that decisive action on multiple levers is needed to keep Belgium on a healthy trajectory. Relying on isolated initiatives is insufficient to drive meaningful change and may risk exhausting public support. Even if public finances and operations are stabilized in the next 4–7 years, as imposed by the European Commission, Belgium will continue to face pressures from demographic shifts, economic deceleration, and global competition. Therefore, Belgium must move beyond short-term measures like cost-cutting and tax increases, toward boosting productivity, rethinking our pension and healthcare systems and designing a sustainable long-term migration strategy.

ThinkBeyond's approach emphasizes addressing key priorities in parallel, underpinned by clear medium- and long-term goals. The philosophy is that economic solutions are most effective when implemented within a cohesive and united society. By combining structural transformations, Belgium can accelerate growth, manage debt levels, and create room for bold future investments. This chapter outlines challenges and offers insights on how (neighboring) countries are managing similar issues. Future ThinkBeyond projects will build on those insights and move deeper into proposing actionable next steps.

ThinkBeyond has organized its approach around five key economic levers.

1. **Boosting productivity**: Enhancing productivity growth will support economic growth. For this, improvements are needed in innovation, investments, education and (labor) markets.
2. **Increasing workforce participation and migration management**: Expanding and diversifying the workforce will keep up economic growth. Attracting younger, skilled workers from other countries can also fill workforce gaps.
3. **Improving public finances savings and investments**: Achieving and maintaining a stable budget ensures room to cover aging costs and for investment in crucial areas like e.g., education and infrastructure.
4. **Reforming the pension system**: Encouraging longer workforce participation can ease the burden on pension systems.
5. **Reforming the healthcare system**: Reducing non-essential expenses can help managing rising healthcare costs without sacrificing quality of care.

Using our tool to compare the relative impact of those levers, productivity growth emerges as the most significant contributor, with increasing the number of people working coming second (Figure 14).

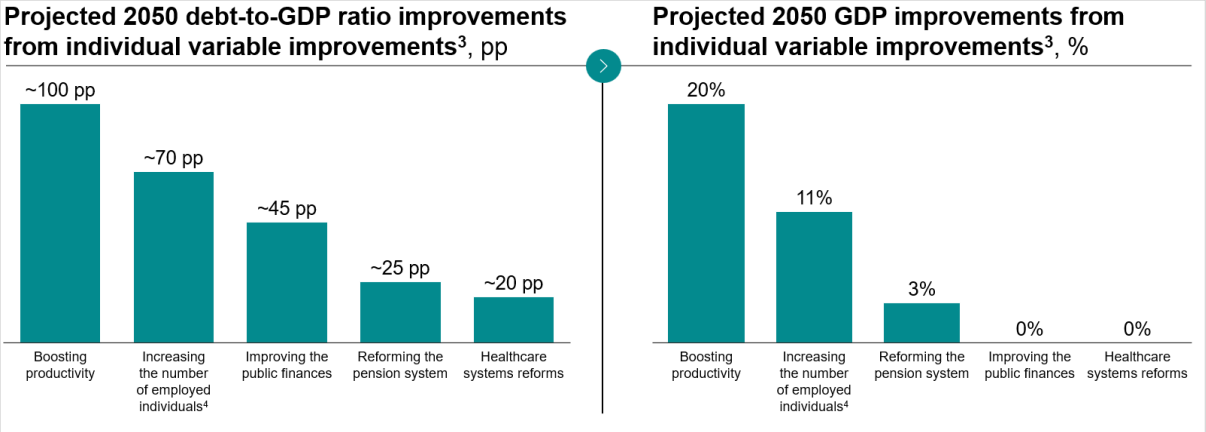



*Figure 14: Estimated percentage point reduction in the 2050 debt-to-GDP ratio and estimated percentage increase in the 2050 GDP from improvements in input variable values*

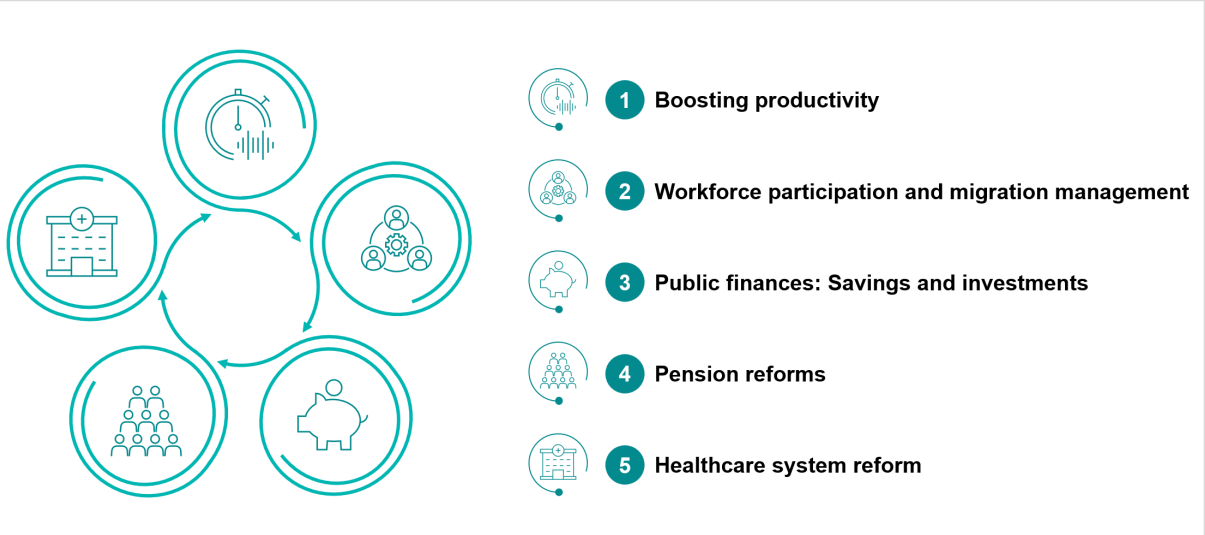



*Figure 15: Five strategic dimensions in navigating Belgium's demographic changes*

# 1. Boosting productivity

Productivity is the single most impactful lever for driving growth. Productivity is the ability to produce more goods or services with the same amount of labor (or number of other resources, such as capital or materials).

When an economy becomes more productive, it generates greater wealth, enabling businesses to pay higher wages, governments to provide better public services, which makes individuals enjoy improved social security, healthcare, and education. Productivity advancements have historically come from breakthroughs like mass manufacturing, which dramatically raised living standards during the 20th century.

[3] Projected percentage point reduction in the 2050 government debt-to-GDP ratio/increase in 2050 nominal GDP from variable improvement, compared to "Scenario 2: Status quo," assuming all other variables remain constant, and each input variable is adjusted individually to reflect the needed reforms.

[4] Including increases in workforce participation and net migration.

However, achieving productivity gains is often more challenging in service-based economies, where human interaction and expertise play a dominant role. Unlike in manufacturing, where automation can rapidly boost output, services such as healthcare or education depend on interpersonal engagement, which limits benefits of scale. This distinction helps explain why annual productivity growth has sharply declined in many advanced economies, including Belgium—falling from 3.5% in the 1970s to just 0.6% over the past decade[3].

Over the past 25 years, global productivity has grown at an average rate of 2.3% per year, largely driven by emerging economies like China and India. In comparison, advanced economies have experienced slower growth. North America saw an average productivity increase of 1.4% annually since 1997, while Western Europe's growth was even slower, averaging just 0.8%[4]. Belgium has struggled even further, with productivity growth lagging slightly behind at 0.6%.

This slower pace of growth reflects Belgium's and Europe's comparatively slower adoption of digital technologies and automation[5].

## Challenge 1: Economic structure dominated by services

Belgium's economy is heavily reliant on service sectors (71.1% of GDP [6]) such as financial, logistical, and advisory services, healthcare, education, and public administration. While these sectors are vital for societal well-being, they face structural challenges in achieving significant productivity gains compared to industries like manufacturing or technology.

For example, Belgium's automotive industry benefits from automation and achieves an average annual productivity growth of 2.1%, significantly above the national average. In contrast, the healthcare sector, despite its strong access and quality, struggles with productivity growth of less than 0.5% annually, as improvements tend to focus more on service quality than efficiency. Additionally, services are more difficult to transform due to factors such as customization, labor intensity, and measurement challenges, as well as institutional resistance to change.

## Challenge 2: Educational opportunity to better fit to the labor market needs and to grow lifelong learning

Belgium faces a significant challenge in aligning its education system with the evolving needs of the labor market. Almost 40% of the workforce is either overqualified or underqualified for their current roles. For example, over 60% of graduates in arts and humanities find themselves working in unrelated fields. Meanwhile, sectors like technology, construction, and engineering are struggling to find qualified talent, while others such as wholesale and retail are oversupplied. In addition, medical fields like psychology and medicine are experiencing skill shortages that surpass the OECD average[7].

Furthermore, Belgium is falling short in its lifelong learning efforts. With only 25.6% of adults aged 25-64 having received training in the past year, compared to the EU target of 47%, there is a clear need for more effective upskilling initiatives. Bridging this gap through targeted education and training programs is essential to maintain a competitive workforce[8].

## Challenge 3: Lag in digitalization, especially among SMEs

Small and medium-sized enterprises (SMEs) are a vital part of Belgium's economy, yet many are slow to embrace digital technologies and automation. For example, cloud computing adoption among

Belgian enterprises has risen by 12 percentage points over the past six years, from 40% in 2018 to 52% in 2023. However, the adoption rate slightly declined in 2023 compared to 2021. In comparison, Finland (78%), Sweden (72%), Norway (71%), and Denmark (70%) are leading the EU in cloud adoption. Promoting the use of digital technologies like cloud computing could help Belgium close the gap with its neighbors, boosting the productivity of its SME sector.[9]

## Challenge 4: Insufficient public and private investment

Belgium has seen impressive growth in R&D investments over the past eight years, ranking first in the EU for innovation expenditures per person employed and second for business R&D spending. Overall, the country invested 3.4% of its GDP in R&D in 2021, on par with Sweden (3.4%) and Austria (3.3%)[10]. However, if we consider a longer time period, public investments in Belgium have been below the European Union average from 1995 to 2024, averaging around 2.4% of gross domestic product (compared to 3.5% in the European Union). This percentage is lower than both the current level and the value in the 1970s, when public expenditures were approximately 5% of gross domestic product.

It's important to distinguish between R&D and non-R&D innovation spending. R&D investments focus on research to create or improve products, while non-R&D spending involves adopting new technologies and processes to enhance productivity. Belgium excels in R&D but lags the EU average in non-R&D innovation expenditures[11]. To ensure long-term economic growth, Belgium must diversify its R&D efforts and increase investments in sectors like AI, digital and technologies.

While Belgium's public research & development funding is currently strong, it needs to ensure a better balance in the innovation-to-commercialization ratio. Among other challenges, it trails countries like Germany and Sweden in funding for emerging sectors. Additionally, the adoption of digital technologies outside of ICT sectors has been slow, despite a steady rise in the number of ICT specialists in the workforce. To fully unlock the potential of R&D, Belgium needs policy reforms, better funding mechanisms, and stronger collaboration between the public and private sectors.

## Challenge 5: Administrative and fiscal rigidity

The challenge for Belgium lies not in the initial steps to start a business but in the broader regulatory and fiscal structures that limit business agility, particularly SMEs and start-ups[12]. Although the process of opening a business is relatively straightforward, the broader administrative burden—such as dealing with tax compliance, environmental regulations, and labor laws—can slow down business operations, especially for companies looking to scale quickly.

While some regulation is necessary to protect public interest, too much regulation can become an obstacle to entrepreneurship. The Draghi Report emphasizes the importance of striking a balance between safeguarding key interests, such as consumer protection and fair competition, while fostering an environment conducive to innovation. Excessive regulation can stifle business creativity, increase operating costs, and discourage investment, particularly in emerging sectors. This is especially true in sectors like digital technologies and clean energy, where rapid innovation is key to remaining competitive in the global market.

## Conclusion

Productivity is a critical driver of economic growth, but improving it is not always straightforward. Historically, breakthroughs that significantly boosted productivity, like the advent of mass manufacturing and industrialization, often took time before their impact was fully realized in overall productivity rates. While achieving productivity gains can be challenging, it is essential for creating higher wages, better living standards, and a stronger economy.

In Belgium, several structural challenges—such as a reliance on services, slow digital adoption and a mismatch between education and labor market needs—are limiting progress. Yet, with focused efforts on innovation, education reform, and regulatory improvements, Belgium can start creating a way back to increased future productivity growth. Given the protracted effort this requires, such a "productivity plan" should start soon.

## Box 1: Lessons from other countries

### Lessons from Luxembourg: Building high-value sectors[13,14,15]

Luxembourg stands out for its impressive economic performance, boasting the highest GDP per capita among OECD countries. It has managed to maintain low unemployment, low public debt, and substantial public assets, creating a stable foundation for economic growth. A key factor driving Luxembourg's success is its strategic focus on high-productivity sectors. The financial and insurance industries, as well as information and communication technologies (ICT), are at the forefront, with an impressive 150 EUR of value added per hour worked. In contrast, other sectors of the economy contribute around 50 EUR per hour worked. The country's workforce in these high-value sectors is nearly three times more productive than in e.g. Qatar, a comparison that highlights the efficiency and output generated by Luxembourg's well-established financial services sector, which requires fewer workers to produce substantial results. This example demonstrates the importance of targeted investments in high-productivity industries to fuel economic growth.

### Lessons from Singapore: Transforming industries with blueprints[16,17]

Singapore's approach to boosting productivity and innovation lies in its Industry Transformation Maps (ITMs), a policy initiative that has been gradually rolled out across 23 sectors since 2016. These ITMs are tailored blueprints that guide industries in their digital transformation and upskilling efforts. As a result, Singapore saw a 2.4% annual increase in labor productivity from 2016 to 2023, despite economic challenges like the COVID-19 pandemic. Additionally, the median income of full-time employed residents in the ITM sectors grew by 1.9% annually. This structured approach to industry-specific reform and digitalization has proved successful in driving productivity, especially in outward-oriented sectors where productivity grew by 3.1% per annum.

### Lessons from Ireland: Attracting multinationals and strengthening STEM[18,19]

Ireland's focus on creating an attractive environment for multinational corporations has been a key driver of its high productivity. The country's low corporate tax rate, combined with a strong emphasis on STEM education (Science, Technology,

Engineering and Mathematics), has positioned Ireland as a global hub for foreign investment. As a result, Ireland leads OECD countries in labor productivity, with foreign-dominated sectors achieving an impressive €391.70 per hour worked, while the total economy labor productivity reached €106.70 per hour in 2024. This productivity surge has been accompanied by a 2.9% average quarterly labor productivity growth between 1999 and 2024[20]. The country's educational system plays a crucial role, with a higher proportion of workers holding third-level qualifications compared to the EU average and a significantly higher share of STEM graduates. Ireland's success underscores the importance of aligning fiscal incentives with education reforms to foster innovation, attract high-value investments, and strengthen productivity.

## 2. Workforce participation and migration management

Unlike in the past, where the workforce was growing alongside an expanding number of retirees, Belgium now faces a shrinking pool of workers to support an increasing number of retirees. This change is driving up the dependency ratio, meaning fewer working-age individuals will be supporting a larger, non-working population. The effects are already being felt across key areas like pension systems, healthcare, and overall economic growth. To create a stable environment, Belgium will have to increase the numbers of people working by pushing up participation and filling gaps through managing migration

Beyond demographic changes, Belgium's labor market also faces structural inefficiencies. Informational frictions, such as insufficient awareness of available job opportunities or the potential to transfer skills across sectors, prevent workers from aligning with the jobs that best match their capabilities. This limits career mobility and leaves critical roles unfilled. Similarly, status frictions—rigid distinctions between employment types, such as private versus public employees—create barriers to transitioning between these forms. These barriers discourage flexibility in adapting to market needs and hinder labor market dynamism. Together, these frictions exacerbate labor shortages, reduce productivity growth, and slow down economic adaptability.

### Challenge 1: Increasing the labor participation of women

According to recent figures, the female employment rate in Belgium stands at around 68.0%, compared to 72.3% for men[21].

Despite Belgian women being highly educated and skilled, this disparity persists, suggesting that there are structural barriers affecting their participation and progression in the workforce.

Countries like Sweden and Denmark have made notable progress in reducing the gender employment gap by implementing policies such as flexible working hours, affordable childcare, and extensive support for women returning to work after parental leave. These initiatives have contributed to higher female labor force participation and better gender equality in the workplace.

### Challenge 2: Increasing the labor participation of older workers

In 2022, the average effective retirement age in Belgium was 61.2 years, well below the legal pension age of now 66 and the European average of 64, highlighting a premature exit of many older workers from the workforce[22]. This is further compounded by a lack of tailored reskilling programs, leaving many older workers

unable to adapt to changing job market demands.

The reluctance of older workers to remain or return to work can also be attributed to concerns over age discrimination, skills mismatches, and limited career advancement opportunities. Research shows that older workers often struggle to keep pace with technological advancements and digital tools, limiting their employability in an increasingly digital economy[23]. Additionally, societal norms in Belgium favor early retirement, reinforcing the idea that older workers should step aside, rather than remain in the workforce. Countries like Japan and Germany have countered this trend by implementing retraining initiatives, phased retirement schemes, and incentives for employers to retain experienced workers. In Japan for example, more than half of the people aged 65-69 and more than a third of those aged 70-74 are employed[24].

Addressing this issue will require targeted interventions such as promoting lifelong learning, introducing tailored retraining programs, and creating inclusive workplace environments that value the contributions of older workers. Adopting some remuneration flexibility may also help. Raising awareness about the economic and social benefits of retaining older employees, particularly in sectors facing labor shortages, could also shift perceptions.

### Challenge 3: Increasing the labor participation of migrants already residing in Belgium

Despite Belgium being home to a large and diverse migrant population, the employment rate for foreign-born individuals is 64.3%, a 7.5 percentage point gap compared to Belgian-born citizens (71.8%)[25].

Migrants in Belgium often face lower educational attainment, language barriers, and difficulty in having foreign qualifications recognized, which limits their opportunities for stable and high-quality employment. Approximately 32% of migrants with higher education in Belgium are working in jobs that do not require such qualifications[26]. Moreover, many are overrepresented in low-wage, low-skilled sectors such as construction, cleaning, and agriculture, where job security and advancement opportunities are limited. Asylum seekers face even more severe hurdles, such as a four-month wait before they can even access the labor market and are often relegated to temporary, irregular or precarious jobs[27].

### Challenge 4: Targeted immigration programs: Attracting the right talent

Belgium is grappling in attracting the right talent to fill critical shortages in sectors like healthcare, technology, construction, engineering, and some hi-end services. Yet, Belgium's current immigration policies are not sufficiently tailored to meet these labor demands, lacking the strategic focus of countries like Canada and Australia that employ point-based systems to prioritize skilled workers. While Belgium has a strong migrant inflow (120,000 new migrants on a long-term or permanent base in 2022, of which one fourth was asylum seekers)[28], its immigration policies remain largely reactive, especially when compared to other high-performing countries. This is particularly concerning considering the demand for skilled workers is growing rapidly, and it's crucial to address this gap before Belgium would lag too far behind to catch up.

Belgium, like many other EU countries, is expected to experience a shortfall of skilled workers, with healthcare and technical professions being the most affected[29]. As an example, the engineering sector is

already grappling with a significant challenge: Industries require over 2,000 engineers annually, yet only about 1,500 graduates enter the workforce each year. This current shortfall of more than 500 engineers is likely to compound over the coming years as demographic pressures intensify.

## Conclusion

Belgium's demographic and labor challenges are complex but not insurmountable. By increasing domestic labor force participation, implementing targeted immigration strategies, and addressing labor market frictions, the country can lay the groundwork for a more resilient economy.

### Box 2: Lessons from other countries

The Netherlands (with an 82.5% employment rate) and Switzerland (80,8%) and Denmark (76.7%) offer compelling examples of how targeted reforms can address labor market frictions while boosting participation[30]. These case studies reveal a common thread: Success stems from simplicity, adaptability, and minimizing political interference. Allowing businesses to hire and fire more easily, while providing workers with robust safety nets and reskilling opportunities, can create a more dynamic and competitive economy.

Other countries have successfully designed and implemented targeted immigration systems that prioritize skilled migrants, filling critical gaps and addressing long-term labor market needs.

**Lessons from Denmark[31],[32],[33]**

Denmark's labor market model, known as Flexicurity, exemplifies how to balance employer flexibility with employee security in a dynamic economy. The system allows employers to hire and dismiss employees without excessive costs or legal entanglements, supported by robust unemployment insurance and retraining programs. Workers can rely on up to two years of unemployment benefits and subsistence allowances for broader social needs, while government-led education programs expedite reintegration into the workforce.

This model, grounded in trust and collaboration between labor unions and employers, fosters stability while enabling swift adaptation to economic changes. Importantly, political interference is minimized, as collective agreements determine wages and conditions. Strikes are rare, and disputes are resolved through consensus for societal benefit.

**Lessons from the Netherlands[34],[35]**

The Dutch Participation Act illustrates how targeted measures can promote inclusivity without overcomplicating the system. By committing employers to create 100,000 jobs for work-disabled individuals by 2026, the Netherlands balances social responsibility with market efficiency. Government assists in placing employees within companies and offer workstation supervision. The difference in wage vs the minimum wage for those people is also subsidized.

At the same time, cultural factors—such as part-time work and extended employment for older workers—bolster high employment rates and economic participation across age groups.

The Netherlands' unemployment rate of 3.5% (2022) reflects the benefits of streamlined policies that focus on tangible results rather than broad political ambitions[36].

**Lessons from Switzerland[37],[38]**

Switzerland's **VET system** offers a compelling blueprint for aligning education with labor market needs. By enrolling two-thirds of young people in vocational programs that blend academic and practical training, Switzerland ensures a steady supply of skilled workers. The focus on demand-driven training avoids mismatches, while tertiary-level professional education equips individuals for technical and managerial roles. This seamless integration of education and employment has contributed to Switzerland's low unemployment rate of **2% (2024)**. Crucially, Switzerland's success lies in minimizing the state's role in micromanaging labor policies. Instead, the emphasis is on creating structures that encourage individuals and businesses to align their efforts with economic realities.

**Lessons from Canada**

Canada's Express Entry system is a well-established model for prioritizing skilled workers through a points-based system that evaluates education, work experience, language proficiency, and other factors[39]. Canada's targeted immigration policies are proving highly effective in fostering workforce integration and economic equity. In 2022, 36% of new immigrants arrived with work permits, nearly double the 19% in 2010, ensuring greater job readiness upon arrival. This shift has contributed to a significant rise in employment rates, with the gap between recent immigrants (ages 25–54) and Canadian-born workers narrowing from 13.1 to just 6.5 percentage points between 2010 and 2023. Additionally, wage disparities are improving, as recent immigrant men earned 13.4% less than Canadian-born counterparts in 2020, compared to a 19.9% gap in 2015[40].

**Lessons from Germany[41],[42]**

Germany has faced significant labor shortages, particularly in high-skill sectors such as engineering and IT. In response, the country has developed a number of initiatives to attract and integrate skilled workers, including the Skilled Workers Immigration Act introduced in 2020. This program simplifies the process for foreign workers with vocational qualifications or university degrees to gain employment in Germany. Furthermore, Germany has focused on integrating refugees and asylum seekers, providing them with access to language courses, vocational training, and skills recognition. The success of this model is evident in the fact that, according to a 2019 report by the German Ministry of Labor and Social Affairs, over 60% of refugees from Syria found employment within their first two years of arrival (Federal Ministry of Labor and Social Affairs, 2019).

**Lessons from Sweden**

Sweden's approach integrates language acquisition and employment support through the SFI program (Svenska för invandrare). This free program helps immigrants and refugees learn Swedish, providing courses tailored to various levels, from beginner to advanced. It focuses on essential skills such as vocabulary, grammar, writing, speaking, and cultural understanding. The goal is to enable participants to integrate into society, become self-sufficient, and improve employment prospects. In addition, Sweden's active labor market policies include targeted employment services, mentorship, internships, and incentives for employers to hire migrants. A 2019 study by the Swedish Migration Agency found that refugees who completed the SFI program were more likely to secure stable employment. This holistic approach supports migrants

throughout both the integration and labor market transition phases.

**Lessons from United Kingdom**

The UK offers a range of programs aimed at integrating migrants into the workforce, particularly those with professional qualifications. The Recognition of Professional Qualifications initiative allows migrants to have their overseas credentials recognized, easing their transition into their respective fields. Additionally, the UK has implemented reskilling and upskilling programs such as the National Retraining Scheme, which supports workers in adapting to changing market conditions. These initiatives are part of a broader effort to support migrant integration in sectors where labor shortages are most acute. Despite challenges from Brexit, the UK's efforts in creating pathways for skilled migration have helped fill critical gaps in sectors such as healthcare and engineering.

## 3. Public finances: Savings and investments

The primary balance is an important indicator of a country's fiscal health. It represents the difference between government revenues (such as taxes) and expenditures on public services and social security, excluding interest payments on existing debt. Ideally, a country should aim to keep its average primary balance over time close to zero matching what it takes and what it spends. According to EU guidelines, Member States are advised not to exceed an overall deficit ratio of 3% of GDP[43]. This ensures that governments are not borrowing excessively and keeps a country's debt manageable over time: The EU advises a government debt ratio of maximum 60% of GDP. However, having a primary balance that is too far above zero can also be problematic. While reducing debt quickly might seem beneficial, being overly conservative with spending and borrowing can limit a country's ability to invest in critical areas like infrastructure, education, or innovation and to absorb shocks, both cyclical and external (e.g., Covid). In this sense, debt can be an opportunity for growth when managed wisely.

The sustainability of debt also depends on other factors, such as interest rates and the sources of borrowing. When interest rates are low, countries can borrow more affordably, creating room for investment. Additionally, countries that borrow primarily from domestic sources, like Japan, which funds 85% of its debt through domestic savings, have more flexibility. This is because the debt remains within the country, making it easier to manage and roll-over. This allows Japan to maintain higher debt levels without risking significant economic instability.

On the other hand, countries like Belgium, which rely more on international markets for borrowing (about 55% of its debt), face greater risks. They are exposed to volatile global economic conditions, and if international investors demand higher returns, borrowing costs may rise very fast —especially during times of economic or political uncertainty.

If a country's debt becomes too high, it can directly affect individual citizens. In such cases, the government might need to raise taxes or reduce public services abruptly to service the debt, which places a financial burden on taxpayers and limits the funds available for public welfare and development.

In Belgium, the primary balance is becoming an increasingly pressing issue. If productivity growth does not accelerate and aging costs continue to rise as projected by the Study Commission on Aging, the primary deficit could push the debt-to-GDP ratio to approximately 150% by 2040 and to well over 180% by the early 2050s. The European Union has set a target debt-to-GDP ratio of 60%, though some experts suggest maintaining it around 80-100% for fiscal stability, again depending on other aspects of the financing markets. The potential increase in Belgium's debt could thus lead to economic instability, force the country to adopt hastily conceived austerity measures, and potentially invite international reaction and even intervention. This scenario would place Belgium in a precarious situation, mirroring the challenges faced by some other countries in recent years. Greece, although admittedly a much weaker economy, saw its debt problems begin in 2009 when their debt-to-GDP ended around 127%[44].

### Challenge 1: High historically accumulated debt burden

Belgium's public debt stands well over 100% of its gross domestic product (GDP), which severely limits the government's capacity to invest in crucial infrastructure and essential services. High debt levels increase borrowing costs and reduce fiscal flexibility, making it harder for the country to respond to economic or social challenges. As of 2023, Belgium's public debt was approximately 108% of GDP, among the highest in the European Union, where the average is around 88%, with countries like the Netherlands leading at just 42%[45].

### Challenge 2: Projected fiscal deficits

Belgium continues to run persistent fiscal deficits which will exacerbate the country's debt burden. In 2023, Belgium's overall fiscal deficit was projected to reach around 4.5% of GDP. The country typically faces a difficult political challenge in reducing this deficit, which hampers efforts to stabilize public finances and address long-term fiscal sustainability.

### Challenge 3: Aging population

An aging population places increasing demands on Belgium's social welfare system, particularly pensions, healthcare, and long-term care. As the number of retirees grows relative to the working-age population, the tax base narrows, which makes it harder to balance the budget. This demographic shift is expected to put additional pressure on public finances, with nearly one in four Belgians projected to be aged 65 or older by 2030. This rise in elderly citizens thus presents another challenge to fiscal stability and sustainability.

### Challenge 4: Economic slowdown

Belgium's economic growth has been relatively slow, with an average annual GDP growth rate of 1.6% between 2013 and 2023, closely aligning with the European Union's average of 1.4%[46]. This growth, however, is significantly behind that of the United States, which saw an average growth rate of 2.1% over the same period[47]. The modest pace of Belgium's economic expansion limits its ability to increase tax revenues and reduce fiscal deficits, putting pressure on the country's primary balance.

### Challenge 5: Public resistance to fiscal reforms

Efforts to implement fiscal reforms in Belgium, such as reducing government spending or increasing taxes, are often met with significant public resistance. There is widespread opposition to austerity measures and tax hikes, driven by concerns about their impact on personal

living standards and the broader economy. This resistance makes it politically challenging for the government to introduce and implement the reforms needed to improve fiscal health and reduce the debt burden. As a result, Belgium faces a difficult path toward achieving fiscal sustainability, with limited room for maneuver in the face of entrenched public opposition.

## Conclusion

Belgium's public finances face significant challenges, yet with lessons drawn from international examples and the adoption of innovative approaches, a more sustainable future is possible. Balancing fiscal discipline with robust social welfare programs will be crucial, particularly in light of an aging population.

It is important to note that these considerations on debt levels focus on long-term trends and exclude exceptional government expenditures, such as counter-cyclical measures or emergency investments (e.g., in response to the COVID-19 crisis), which remain temporarily necessary under such circumstances.

### Box 3: Lessons from other countries

**Lessons from Japan**[48]

Japan is finally on track to balance its budget by 2025 after years of struggle. This is achieved through smart labor market reforms, investing in education, and embracing new technology. These steps boosted the economy, leading to more tax income, even with some extra costs from price hikes. Japan is now expecting a small surplus, the first in many years. This improvement is a result of Japan's focus on reaching its primary balance target, which aims for no borrowing beyond what is needed to cover interest on its debt

**Lessons from Germany**[49],[50],[51]

Germany has a strict rule called the Schuldenbremse (debt brake), which limits how much the government can borrow. This rule ensures that Germany's government debt stays well under control (though it sometimes interferes with the quick action needed in downturns or crises). They have a balanced budget most of the time, even making extra money in good years. By sticking to this rule, Germany's debt remains lower than many other big European countries, making their finances stable and manageable.

**Lessons from Estonia**[52],[53],[54],[55],[56]

Estonia became the first country to have a simple, flat tax system where companies only pay taxes on profits they distribute. This encourages businesses to grow quickly without extra financial burdens. Estonia also kept its budget balanced, which helped it weather the 2008 financial crisis better than most countries. They have the lowest public debt in Europe, making their finances strong. Estonia's consistent approach to maintaining a balanced budget and keeping public debt low has been key to their success.

**Lessons from Sweden**[57],[58],[59]

Sweden has a clear plan for managing its budget, with targets to ensure they keep a budget surplus (spending less than they earn). This long-term approach, including a rule to keep national debt below 35% of GDP (known as the debt anchor), has kept Sweden's finances healthy. As a result, Sweden's debt is lower than most

European countries, and they have the highest credit ratings, showing trust in their financial stability. Sweden's surplus target and public spending ceiling (utgiftstak) have been essential in keeping their finances strong

**Lessons from the Netherlands**

Through disciplined fiscal policies and proactive investments in technology and infrastructure (among other renewable energy), the Netherlands has managed to keep public debt in check while maintaining strong economic growth. By focusing on productivity and innovation, the country has avoided the debt challenges faced by other European nations, even during periods of global financial stress.

**Lessons from Argentina**

Argentina's economic history serves as a cautionary tale. Once among the world's richest nations, Argentina's prosperity was eroded by excessive debt, mismanagement, and external shocks. In the early 20th century, it thrived on strong agricultural exports. However, efforts to industrialize led to heavy borrowing. By the mid-20th century, significant foreign debt funded ambitious projects. By the 1980s, hyperinflation and escalating debt resulted in a cycle of borrowing, loss of investor confidence, and worsening financial crises.

In the late 1990s and early 2000s, Argentina's debt crisis peaked, leading to default, currency devaluation, inflation, economic contraction, and soaring unemployment. The crisis drained resources from vital sectors like infrastructure, healthcare, and social services. Repeated debt restructurings failed to restore stability, resulting in prolonged stagnation.

## 4. Pension reforms

Pension systems are designed to provide income security to individuals once they retire, offering a source of financial support after years of work. The key components of a sustainable pension system are the ability to provide adequate benefits, ensure financial sustainability, and maintain fairness across generations. For a system to remain viable, it must adapt to demographic shifts, such as longer life expectancies and changing workforce dynamics. A well-functioning pension system requires balancing contributions from the working-age population with benefits for retirees, while also keeping an eye on the broader economy and potential challenges posed by an aging society.

Unlike some countries, such as the Netherlands, where pension systems involve contributions that are invested in pension funds and capitalized on over time, Belgium operates a redistribution system in in which the money contributed by the current working-age population is used directly to pay benefits to current retirees. This system is complemented for part of the population by private capitalized pension schemes. Belgium's main redistribution pension system is currently under strain.

### Challenge 1: Sustainability of the pension system

The long-term sustainability of the Belgian system is coming under growing pressure by the aging population and increasing life expectancy. The system was originally designed for a much shorter pension duration.

The current demographic shift means that there will be fewer workers contributing to the funding of annual pensions, while more retirees will be drawing benefits for longer periods. This imbalance threatens the financial sustainability of the system. Furthermore, there are concerns that the pension system may not provide adequate income for future retirees, particularly given the rising cost of living.

### Challenge 2: Complex and multi-scheme pension system

Belgium's pension system is highly complex, with multiple pillars and rules depending on the individual's employment status. There are notable disparities between the pensions received by employees, civil servants, and the self-employed.

This complexity leads not only to administrative inefficiencies but also to a perceived sense of lack of transparency. The different types of pensions based on employment history and status leave many retirees uncertain about their entitlements. Additionally, these disparities in pension benefits generate resentment among different groups, especially as the financial sustainability of the system continues to come under pressure.

### Challenge 3: Early retirement trends

Another major challenge Belgium faces is the widespread trend of early retirement. Early retirement is especially common in sectors with labor-intensive roles, where workers may feel physically or mentally exhausted by the time they reach the official retirement age.

In 2023, only 57.8% of Belgians aged 55-64 were employed, which is below the EU average of 60.5%. Several European countries, including Iceland (81.2%), Sweden (78.0%), Estonia (76.0%), and the Netherlands (75.0%), report significantly higher employment rates for this age group [60]. Reducing early retirement and hence bringing the effective retirement age (61.2 in 2022) closer to the legal retirement age (66 as of 2025) is an important lever.

### Challenge 4: Public resistance to reforms

The prospect of delaying retirement or reducing pension benefits can lead to strong opposition. However, without reform, the pension system's financial viability is at risk.

The challenge for policymakers is to design reforms that balance the need for sustainability with fairness. An important trade-off is between respecting acquired rights (as a form of fairness, but also for legal certainty for citizens, and to foster trust in government), intergenerational fairness, and the impact of pension prospects on job attractiveness and demand. For example, any intervention that changes attractiveness of one kind of job as compared to another may impact the job market.

## Conclusion

Pension reform in Belgium must navigate the delicate balance between sustainability, fairness, and adequacy, especially in light of demographic changes and political challenges. Besides the classical remedies, Belgium could consider innovative approaches such as facilitating a smoother transition between work and retirement.

## Box 4: Lessons from other countries

Belgium can look to international examples for guidance on adjusting its pension system. Countries like Switzerland have linked their retirement age to life expectancy, allowing the system to remain adaptable. Switzerland also encourages older workers to stay employed through targeted incentives and retraining programs. Similar approaches are seen in Italy and the Nordic countries, where the retirement age is adjusted periodically based on life expectancy, and policies are in place to support the employment of older workers. These countries demonstrate that linking pension age to life expectancy and incentivizing older workers to remain employed can help alleviate financial pressure.

### Lessons from South Korea[61],[62]

In South Korea, limited public pension benefits have led many seniors to remain in the workforce beyond the legal pension age of 60, with 32% of those over 65 still employed, primarily in low-wage, temporary positions. To combat poverty, the government launched the Senior Employment Program, providing job opportunities in local government, the private sector, and social care. Government provides subsidies to hire participants in order to lift people out of poverty, increase social participation and maintain health. In 2021, around 840,000 seniors (6.4% of the 60+ population) participated. Furthermore, the government is exploring the implementation of mandatory corporate pension plans to enhance financial security for retirees.

### Lessons from Japan[63],[64],[65]

Japan has actively worked to extend the working lives of its senior citizens through legislation and subsidy programs. The Revised Law Concerning Stabilization of Employment of Older Persons has made it easier for companies to employ seniors until the age of 70 by providing subsidies for employers who convert fixed-term senior contracts to permanent ones. The government also supports senior workers by offering consultations and skills training, including a focus on digital reskilling. As of 2022, the employment rate for individuals over 65 had reached 25.2%, significantly higher than in many other developed countries. Local initiatives, such as Obihiro City's senior human resources matching system, have been successful in matching older workers with jobs, and private companies like Mynavi Middle Senior specialize in helping seniors find employment. With over 80% of older workers expressing a desire to stay employed, Japan’s efforts have helped increase senior workforce participation and promote longevity in employment.

### Lessons from Sweden[66],[67]

Sweden has adopted a flexible retirement system that encourages seniors to remain in the workforce. In 2019, legislation was passed that required individuals to wait until 62 to start drawing their state pension (with a full pension reached only in case of working until the age of 69[68]) and extended the right to remain employed until the age of 68, increasing to 69 by 2023. Sweden's pension system is based on notional defined contributions (NDC), where pensions are tied to lifetime contributions and adjusted for life expectancy at the time of retirement. This system is supported by both a public earnings-related component and occupational pension schemes. Additionally, the guaranteed pension ensures that all seniors receive a basic level of income, even if their contributions were low. Sweden's pension system has allowed for better financial security for seniors while ensuring sustainability through a

balanced approach to employment and pension eligibility.

# 5. Healthcare system reform

Belgium's healthcare system, ranked 18th globally[69], is recognized for its accessibility, affordability, and quality. These strengths have been central to improving life expectancy and managing public health effectively. However, like many developed nations, Belgium is facing significant challenges as its population ages. Older individuals typically require more frequent hospitalizations, long-term care, and treatments for chronic conditions. These demands increase healthcare consumption and drive costs higher, particularly as advanced medical technologies become standard for elderly patients.

At the same time, the healthcare workforce is under immense pressure. Burnout among professionals, coupled with difficulties in attracting and retaining new talent, has created a shortage of qualified staff. This has left many institutions struggling to keep up with rising patient numbers. The shortage leads to longer waiting times, reduced access to essential services, and a noticeable strain on the quality of care. Easing administrative burdens and expanding the workforce to match future needs will be key in coming years.

Another challenge lies in transitioning from a hospital-centered system to one that emphasizes care closer to home. Historically, Belgian healthcare has relied heavily on hospitals to address a wide range of needs. Efforts are now underway to strengthen local networks through community-based models of care, where general practitioners, home care, and outpatient clinics take on a greater role. This shift aims to improve chronic disease management, ease the burden on hospitals, and contain costs. Programs like the *Integrated Care for Better Health Program* reflect this vision, but success will depend on investments in infrastructure and stronger coordination among healthcare providers to ensure the transition benefits both patients and the system.

## Challenge 1: Rising healthcare costs

Technological advancements, which typically drive efficiency and cost reductions in other industries, pose a unique challenge in healthcare. While innovations such as advanced medical devices, pharmaceuticals, and precision medicine can significantly improve patient outcomes, they often come with high initial costs. For example, robotic surgery can lead to fewer complications, less pain, and quicker recovery compared to traditional open surgery. However, this technology can cost hospitals around €2 million for the robotic system itself, with additional expenses for maintenance and training. In comparison, traditional surgical methods, though still effective, tend to be less expensive but do not offer the same level of precision or faster recovery[70].

These technological innovations, especially those requiring long-term care or infrastructure changes, often result in short-term cost increases, which, when combined with rising patient demand, contribute to the overall increase in healthcare expenditure.

Belgium's healthcare spending has significantly risen in recent years, with the public spending on healthcare as a share of GDP growing from 6.6% in 2007 to 8.4% in 2024. A substantial portion of this increase can be attributed to factors such as an aging population (with nearly one-third of lifetime expenditures incurred during middle age, and nearly half during senior years), the rising prevalence of chronic diseases like diabetes, heart

disease, and obesity, and the growing demand for healthcare services driven by higher health awareness and increasing expectations for quality care[71].

Compared to other European countries, Belgium spends a relatively high proportion of its GDP on healthcare, exceeding the European average and outspending countries such as Ireland, Finland, Spain, and Italy.

## Challenge 2: Inefficiencies and fragmented governance

Belgium's healthcare system faces three types of inefficiencies that drive up costs without proportionate improvements in patient outcomes: **Structural inefficiencies**, **clinical inefficiencies**, and **pharmaceutical inefficiencies**. Structural issues, such as fragmented governance and administrative complexity, waste resources and reduce coordination. Clinical inefficiencies, including the overuse of medical tests, overreliance on specialists, and higher-than-average hospital admission rates, strain resources unnecessarily. Meanwhile, pharmaceutical inefficiencies, such as the frequent prescription of branded drugs over generics, further inflate spending.

These inefficiencies manifest in numerous ways, from redundant processes and repeated tests to poor care coordination, each of which contributes significantly to rising healthcare costs.

### Structural Inefficiencies

Belgium's fragmented governance is a prime example of inefficiency. Overlapping responsibilities across federal, regional, and community levels create duplication and delays, as seen in flu vaccination programs. The division of tasks between federal procurement and regional distribution has led to logistical challenges and uneven vaccination rates. Centralization could eliminate these barriers and improve efficiency.

Furthermore, administrative complexity, such as submitting multiple forms for reimbursement, or slow digital transformation are other major challenges in the system.

Additionally, despite allocating over one tenth of GDP to healthcare[72], Belgium has been slower to adopt modern technologies and digital health infrastructure such as electronic health records (EHR) and telemedicine compared to its European peers[73].

### Clinical Inefficiencies

Clinical practices in Belgium often deviate from evidence-based guidelines, leading to the overuse of certain services. For instance, Belgium performs 40% more CT imaging exams per capita than the European average, while unnecessary MRIs offer limited additional diagnostic value compared to conservative management approaches[74]. Poor care coordination, especially in cases involving elderly patients with chronic conditions, results in repeated tests and preventable hospitalizations.

Moreover, there is an overreliance on specialists for conditions that could be managed by general practitioners (GPs), which leads to higher fees and longer wait times. Belgium also experiences higher hospital admission rates, and a relatively high average length of stay (6.5 days) compared to European peers like the Netherlands (4.5 days), contributing to a greater number of nursing days per inhabitant annually[75, 76].

### Pharmaceutical Inefficiencies

The overprescription of branded drugs, despite the availability of cost-effective generics with comparable efficacy, is a key

driver of excessive pharmaceutical spending[77].

### Challenge 3: Healthcare workforce challenges

Belgium's healthcare system is struggling with a workforce shortage. By 2040, Belgium will need an extra 124,000 nurses to meet the needs of its population[78]. At the same time, Belgium has fewer doctors than the European average—325 doctors per 100,000 people compared to 407 in the EU. A big concern is that many doctors are nearing retirement, with 43.3% of Belgian doctors over 55 years old, higher than the EU average of 37.4%[79]. Although this percentage has decreased slightly since 2016, the number of doctors retiring still exceeds the number entering the profession[80].

On the nursing side, the number per 100,000 people increased from 879 to 1,107 between 2004 and 2018. However, the patient-to-nurse ratio in hospitals remains high[81], which could indicate that nurses are still dealing with heavy workloads. This, combined with factors like long working hours, burnout, and job dissatisfaction, contributes to an early exit from the profession, with 34% of nurses retiring before the age of 60.

### Conclusion

Belgium's healthcare system, while robust, faces growing challenges due to an aging population. This older population requiring more care, coupled with the rising demand for personalized and increasingly expensive treatments, are driving up costs at an unsustainable pace. Initiatives—such as reducing inefficiencies, implementing preventive care, digitization, and innovative funding models—will also play a key role in ensuring the system's long-term viability. The main objective will be to carefully keep costs in check, while preserving the accessibility and quality of care for which Belgium's healthcare system is renowned.

## Box 5: Lessons from other countries

**Lessons from the Netherlands** [82,83,84]

The Netherlands has undertaken significant reforms to keep medicines affordable and ensure universal access. Rising pharmaceutical costs, driven by expensive innovative treatments, prompted the government to amend laws such as the Medicine Prices Act and modernize the Medicines Reimbursement System (GVS). These changes aim to reduce costs while maintaining access to essential medicines.

Key measures include negotiating competitive prices with pharmaceutical companies, led by the Minister for Medical Care. Health insurers only reimburse medicines after price agreements are finalized. The Dutch government also evaluates new medicines through a standardized procedure, deciding their inclusion in the GVS and the standard health insurance package. Additionally, the Netherlands collaborates with Austria, Belgium, Ireland, and Luxembourg under the Benelux Initiative to accelerate access to affordable, innovative treatments.

Another important feature of the Dutch healthcare system is the principle of social solidarity, where all residents contribute to healthcare costs. Since 2008, it has been mandatory for adults to pay an annual excess (or deductible) of €385 before basic health insurance

reimburses most medical costs. This excludes essential services like visits to general practitioners, maternity care, and chronic illness treatments, which are fully covered. To limit financial burden, the government caps additional co-payments for high-cost medicines at €250 per patient annually, ensuring affordability and equity in healthcare access.

The reforms have produced tangible results. Since April 2021, the Medicine Prices Act reduced costs by using Norway as a reference country, saving €160 million annually on medicines outside hospitals. The GVS modernization, implemented from 2023, is projected to save €140 million annually. These initiatives demonstrate the Netherlands' commitment to balancing affordability, innovation, and universal healthcare access.

**Lessons from France[85] ,[86]**

France's healthcare reforms focus on affordability, equity, and financial protection, making the system a model for other nations. People with any of 32 chronic conditions are exempt from user charges, ensuring consistent access to necessary treatments. Undocumented migrants with low incomes also receive benefits equivalent to residents under the state medical aid scheme (AME). Unlike many systems, entitlement to healthcare under France's social health insurance (SHI) is not tied to contributions, guaranteeing lifetime coverage for all residents.

To manage pharmaceutical costs, France sets maximum prices for new drugs based on added value compared to existing treatments. Prices cannot increase after launch, and after five years, they are reduced with additional discounts linked to market competition. Rebates are required from manufacturers if spending exceeds a national pharmaceutical cap set by Parliament.

Recent initiatives, like the 100% Health (100% Santé) reform, phased in from 2019 to 2021, addressed balance billing for medical products, including dental, optical, and hearing aids. These reforms enhanced financial protection, especially for low-income households.

France's approach has significantly reduced financial hardship due to out-of-pocket healthcare payments. The system's inclusivity and cost-control measures highlight its success in ensuring accessible and affordable healthcare for all residents.

**Lessons from Canada[87],[88]**

Canada has implemented significant measures to make prescription drugs more affordable, accessible, and appropriately used within its universal healthcare system. In 2016, federal, provincial, and territorial health ministers collaborated on a unified plan to reduce drug costs. This plan aimed to ensure faster access to safe and effective medicines that meet healthcare system needs and support better prescribing practices.

A cornerstone of Canada's approach is the Patented Medicine Prices Review Board (PMPRB), established in 1987 as part of reforms to the Patent Act. The PMPRB functions as a consumer protection body, ensuring that pharmaceutical companies do not exploit their patent rights by charging excessive prices during their monopoly period. This includes modernizing the pricing framework under the board to reflect changes in the pharmaceutical market, with ongoing efforts to reduce patented drug costs through regulatory adjustments.

These efforts have been supported by financial commitments, including an investment of $140.3 million over five years, starting in 2017, to support affordability initiatives. Canada's universal healthcare system ensures that most essential healthcare services are covered through public insurance, with provinces and territories determining additional coverage based on regional plans. While prescription drug prices remain a focus for reform, emergency services and core medical care remain free for all citizens, demonstrating Canada's commitment to equitable healthcare access.

# III. Next steps to prepare strategic reforms to tackle the aging crisis and boost economic stability

Belgium stands at a crucial juncture in its demographic and economic evolution, grappling with the twin challenges of an aging population and a contracting workforce. The retirement of the Baby Boomer generation, coupled with increasing life expectancy, is placing growing pressure on pensions, healthcare, and social services. These shifts are already reverberating across the economy, affecting social cohesion and financial sustainability.

Confronting these demographic and economic challenges calls for a clear, strategic vision and a decisive plan of action. Reforms must be prioritized based on their potential impact and practicality, focusing efforts where they will achieve the greatest and most lasting benefits. A proactive and well-coordinated approach will be indispensable to ensure long-term stability and prosperity for Belgium.

From our initial work, we would argue that the following policy changes should be explored:

1. **Boosting productivity**: Promoting productivity growth by working on its underlying levers, such as (digital) innovation, education, labor market flexibility and fluidity.

2. **Increasing the number of employed individuals (through workforce participation increases and selective migration management)**: Enhancing and diversifying the workforce by increasing participation from women, elderly, and foreign-born residents and by attracting young, qualified talents from abroad.

3. **Improving public finances and investments**: Creating a primary budget surplus (over the cycle) to reduce debt and regain a healthy investment level.

4. **Reforming pension system**: Encouraging longer workforce participation to alleviate the burden on pension systems, such as by linking the pension age to life expectancy and by simplifying the pension system in order to stimulate longer and more flexible work.

5. **Reforming healthcare system reforms**: Managing rising healthcare costs without compromising quality through eliminating waste and redesigning for prevention.

Using our tool to compare the impact of those levers, productivity growth emerges as the most significant contributor, with increasing the number of people working coming second. When also considering other important metrics such as ease of implementation and time to implement, it becomes clear that it is critical to start working on productivity growth in the immediate future to be able to reap its benefits in time, given its long time to implementation and the complexity associated with it (Figure 16). This should be done in combination with levers with shorter term impact like improvements in public finances or reforming the pension system.

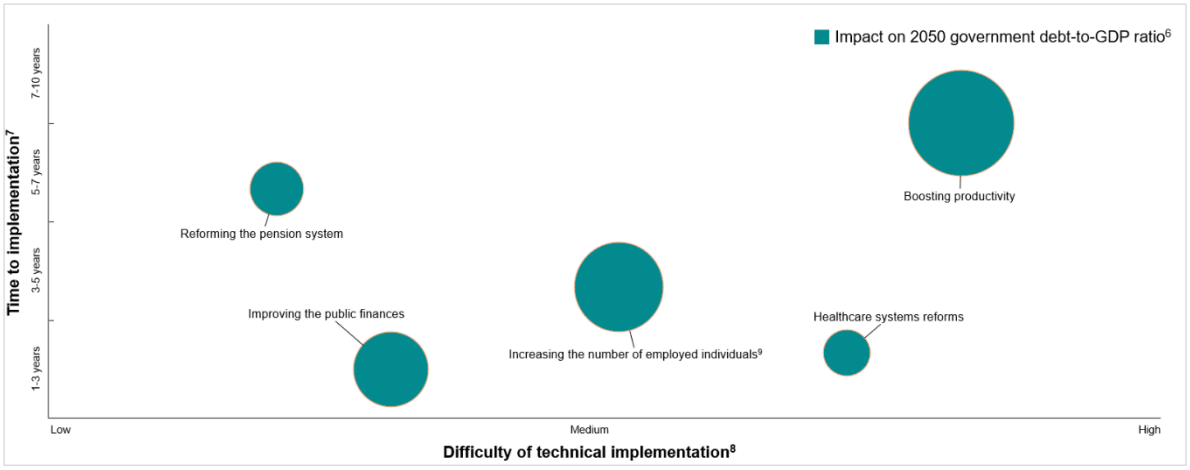



***Figure 16: Evaluation of the critical factors used as input parameters for the simulation tool in terms of ease of implementation, time to implementation and impact on 2050 government debt-to-GDP ratio***

To turn Silver in Gold, the ThinkBeyond report stresses the need for fundamental long-term oriented reform. Belgium needs to:

1. Establish and start soon a comprehensive program to structurally increase productivity, aiming to at least bringing Belgium's economy on par with best-in-class productivity growth in comparable economies (e.g., 1.4% for North America and 1.7% for Advanced Asia between 1997 and 2022).
2. Bring employment rates up to 80+% and complement the current working population by targeted migration.
3. Reverse the annual public primary deficit to a surplus (over the cycle), allowing to regain a healthy public investment capacity.
4. Further reform the pension systems linking the retirement age to the increasing life expectation and nudging people to work longer (e.g., more flexibly).
5. Recast the healthcare system by eliminating waste, putting focus on prevention and on home- and first-line care and by tackling the remaining personnel shortage.

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To guide Belgium towards a stronger future, ThinkBeyond's strategic focus for upcoming reports will center on five interconnected themes:

1. **The productivity imperative**: Fostering innovation and efficiency to fully realize economic potential, with a focus on public services and healthcare. Encouraging a more responsive education system that emphasizes lifelong learning, as well as upskilling and reskilling efforts to meet evolving needs. Implementing the necessary flexibility in labor and other markets.

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[6] Projected percentage point reduction in the 2050 government debt-to-GDP ratio from variable improvement, compared to "Scenario 2: Status quo," assuming all other variables remain constant, and each input variable is adjusted individually to reflect the needed reforms.

[7] Qualitative estimation of the duration required for necessary reforms to take full effect.

[8] Qualitative estimation of the complexity of technical improvements, without taking into account public acceptance.

[9] Including increases in workforce participation and net migration.

2. **Labor market including employment and migration**: Crafting strategic migration and integration policies to address skill gaps and support key sectors. Increasing labor market flexibility, also in order to grow productivity.
3. **Global responsibility and strategic engagement:** Realizing all these domestic priorities while leaving room to address international challenges like climate change and geopolitical instability. Strengthening Belgium's resilience includes reevaluating reliance on global supply chains, enhancing economic and defense security, and (co)investing in geopolitical stability.
4. **Wellbeing, cohesion, and resilience**: Fostering an inclusive society that supports vulnerable populations and enhances social cohesion in the face of the required changes outlined above.
5. **Healthcare organization**: Reinventing healthcare delivery with digital tools, preventive care, and sustainable financing. Increasing healthcare efficiency and fostering an evidence-based focus.

By aligning efforts across these critical areas, Belgium can turn its demographic challenges into opportunities, building a foundation for sustainable growth and societal well-being.

# Appendix I: Scenarios

## Scenario 1: Reference case, following the current trajectory

Inspired by the SGA projections of the Planning Bureau, this scenario represents the most likely outcome if no major policy changes or reforms are implemented and if Belgium succeeds in making serious progress in labor productivity[89], [90].

**Key Assumptions:**

- **Primary balance:** A stable primary balance compared to current levels (-2.5% of GDP in 2024).
- **Net migration:** Projected at 49,200 in 2025, decreasing to 33,100 annually from 2029 to 2040, and further declining to 29,100 by 2050.
- **Employment rates:** Gradual improvement from 71.8% today to 74% by 2029, stabilizing at 77.6% by 2040.
- **Productivity growth**: Remaining stable at recent levels, reaching 0.7% in 2025 and 0.5% in 2029, then rising to 1.4% by 2040 and stabilizing from 2040 onward.
- **Retirement age:** Legal retirement age set at 67 starting in 2030. No further increases afterwards.
- **Healthcare costs:** Annual real growth in healthcare expenditures declining gradually, from 3.32% in 2025 to 1.79% as of 2040 and 1.55% as of 2050.

Improvement vs "Scenario 1: Reference case" | In par with "Scenario 1: Reference case" | Worsening vs "Scenario 1: Reference case"

| | Scenario 1 Reference case | | | |
|---|---|---|---|---|
| **Input variables** | **2025** | **2030** | **2040** | **2050** |
| **Change in primary balance**, %-points | 0,0 | 0,6 | 0,6 | 0,6 |
| **Net Migration**, '000 | 49,2 | 33,1 | 31,0 | 29,1 |
| **Employment rate**, % | 71,8 | 74,5 | 77,6 | 77,6 |
| **Productivity growth**, % | 0,7 | 0,6 | 1,4 | 1,4 |
| **Retirement age**, years | 66 | 67 | 67 | 67 |
| **Real healthcare cost annual growth**, % | 2,85 | 2,38 | 1,81 | 1,55 |
| **Output variables** | | | | |
| **Worker-to-pensioner ratio** | 2,3 | 2,4 | 2,1 | 2,0 |
| **GDP per capita growth**, % | 0,9 | 1,4 | 1,1 | 1,3 |
| **Government debt ratio**, % | 106,5 | 117,9 | 150,9 | 192,4 |

*Figure 17: Scenario 1 input and output variables in simulation tool*

## Scenario 2: Status quo – Strain and stagnation

This scenario envisions a more challenging future, shaped by policy stagnation and additional fiscal burdens that will directly affect the daily lives of citizens.

**Key adjustments vs reference case:**

- **Productivity growth:** Stagnates at current level of 0.5% annually from 2029 onward.
- **Employment rates:** Remain stagnant at the current level of 71.8%.

Improvement vs "Scenario 1: Reference case" | In par with "Scenario 1: Reference case" | Worsening vs "Scenario 1: Reference case"

| | Scenario 2 Status quo | | | |
|---|---|---|---|---|
| **Input variables** | **2025** | **2030** | **2040** | **2050** |
| **Change in primary balance**, %-points | 0,0 | 0,0 | 0,0 | 0,0 |
| **Net Migration**, '000 | 49,2 | 33,1 | 31,0 | 29,1 |
| **Employment rate**, % | 71,8 | 71,8 | 71,8 | 71,8 |
| **Productivity growth**, % | 0,7 | 0,5 | 0,5 | 0,5 |
| **Retirement age**, years | 66 | 67 | 67 | 67 |
| **Real healthcare cost annual growth**, % | 2,85 | 2,34 | 1,79 | 1,55 |
| **Output variables** | | | | |
| **Worker-to-pensioner ratio** | 2,2 | 2,3 | 2,0 | 1,9 |
| **GDP per capita growth**, % | 1,2 | 0,6 | 0,2 | 0,4 |
| **Government debt ratio**, % | 107,4 | 127,5 | 207,1 | 332,7 |

*Figure 18: Scenario 2 input and output variables in simulation tool*

## Scenario 3: Projected government plan – Initial change of trajectory

This scenario broadly replicates the projected government plan, which will improve Belgium's outlook in the short term while still lacking the needed reforms to maintain such improvements in the long term.

### Key adjustments vs base case

- **Primary balance:** Improvements building up to 2% from 2029 onward.
- **Employment rates:** Increase to 80% from 2029 onward.
- **Productivity growth:** Stagnates at current level of 0.5% annually from 2029 onward.
- **Healthcare costs:** Planned decrease of the real growth of the healthcare budget to 2.5% in 2025 (but ultimately increasing again to 3% from 2029 onward). In the interval between 2025 and 2029, projected to decrease to 2% in 2026 and 2027, to then grow again to 2.5% in 2028.

Improvement vs "Scenario 1: Reference case" | In par with "Scenario 1: Reference case" | Worsening vs "Scenario 1: Reference case"

| | Scenario 3 Projected government plan | | | |
|---|---|---|---|---|
| **Input variables** | **2025** | **2030** | **2040** | **2050** |
| **Change in primary balance**, %-points | 0,0 | 2,6 | 2,6 | 2,6 |
| **Net Migration**, '000 | 49,2 | 33,1 | 31,0 | 29,1 |
| **Employment rate**, % | 71,8 | 80 | 80 | 80 |
| **Productivity growth**, % | 0,7 | 0,5 | 0,5 | 0,5 |
| **Retirement age**, years | 66 | 67 | 67 | 67 |
| **Real healthcare cost annual growth**, % | 2,5 | 3,00 | 3,00 | 3,00 |
| **Output variables** | | | | |
| **Worker-to-pensioner ratio** | 2,3 | 2,5 | 2,2 | 2,0 |
| **GDP per capita growth**, % | 0,9 | 2,8 | 0,2 | 0,4 |
| **Government debt ratio**, % | 106,5 | 99,0 | 120,3 | 192,0 |

**Deep-dive on the evolution of healthcare costs according to the government between 2025 and 2029**

| 2025 | 2026 | 2027 | 2028 | 2029 |
|---|---|---|---|---|
| 2,5 | 2,0 | 2,0 | 2,5 | 3,0 |

*Figure 19: Scenario 3 input and output variables in simulation tool*

# Appendix II: Simulation tool

As briefly introduced in Chapter I, in order to research and quantify the long-term economic impact of aging on Belgium, we have created a simulation tool that builds upon the insights from the Annual Report of the Study Group on Aging, published in July 2024, and the Economic Outlook 2024-2029 report, published by the Planning Bureau in June 2024. This tool is designed to go beyond traditional projections by incorporating a broader range of input and output variables, allowing users to interactively explore how different policy choices can shape the future welfare of the country.

By allowing users to manipulate these governable input variables, the tool provides a comprehensive lens through which to understand Belgium's economic trajectory and the potential scenarios that could shape its future. This interactive approach empowers users to make constructive alternative suggestions for future policies, aiming to achieve the desired future state for Belgium. The methodology and assumptions underlying the simulation tool are explained in more detail in the appendix.

Our simulation tool takes as input six critical factors that will play a decisive role in coping with the Belgium's demographic shift:

1. **Labor productivity growth:** The growth rate at which output per person employed increases.
2. **Employment rate:** The percentage of the working-age population (aged between 18 and retirement age) that is (self)employed.
3. **Primary balance improvements:** The change in the government's annual primary balance (annual budget surplus/deficit excluding interest payments), indicating fiscal discipline or reliance on borrowing.
4. **Retirement age:** The age at which individuals are legally permitted to retire and start receiving a pension.
5. **Healthcare costs growth:** The real annual growth rate of the total healthcare cost budget.
6. **Net migration:** The annual balance of people moving into and out of a country.

Our simulation tool uses these six input factors to determine the future evolution of three key economic indicators:

1. **Worker-to-pensioner ratio:** The ratio of the number of working-age individuals to the number of pensioners.
2. **GDP per capita growth:** The annual growth of real GDP (the total value of all goods and services produced in the country.
3. **Government debt as a percentage of GDP:** The ratio of the country's total government debt to its Gross Domestic Product (GDP).

If readers wish to go a step further, we invite them to leverage our online simulation tool to replicate and explore our scenarios or to develop their own.

You can request access to our online tool through www.ThinkBeyond.be

# Methodology of the simulation tool

Users can provide inputs for the years 2030, 2040, and 2050. The reference case used for the inputs is inspired by the SGA's Annual Report of the Study Group on Aging. A detailed description of this reference case can be found under Scenario 1 in the appendix. The inputs for the three scenarios analyzed in this report are outlined in the section “Appendix – Scenarios.”

## Methodology to calculate the worker-to-pensioner ratio

1. **Simulated population calculation**: Recalculated the total population by considering the net migration inputs provided by the user or the scenarios. The new simulated population is calculated as:

New simulated population = (Population last year) + (Change in population in government statistics) + (Difference in net migration)

For years between input years (2030, 2040, and 2050), a linear evolution of net migration is calculated. The projections used as inputs come from SGA’ Annual Report.

2. **Employed population calculation**: Divided the population into two groups: 18-66 years old and from 67 years old to the legal retirement age. The legal retirement age is taken by the user or the scenarios and kept constant between input years, with a minimum retirement age of 67 starting in 2030. The employment rate for people aged 18-66 is interpolated between input years, following SGA projections until 2040 and assuming linear evolution from 2040 to 2050. The employment rate for people aged 67 to the retirement age is calculated as a factor of the employment rate of people aged 55-66 (from SGA data).
3. **Retired population calculation**: The simulated retired population is calculated by multiplying the simulated population by the retired population share observed in the reference case provided by SGA.
4. **Worker-to-pensioner ratio calculation**: The ratio is calculated as the ratio between the simulated employed population and the simulated retired population.

## Methodology to calculate the GDP per capita growth

1. **Working population growth**: Calculated the working population growth as:

   Working population growth = (Employed population actual year - Employed population previous year) / (Employed population previous year)

2. **Productivity growth**: Used user- or scenario-provided inputs with linear growth between input variables.
3. **Real GDP growth**: Calculated as:

   Real GDP growth = (1 + Productivity growth) * (1 + Working population growth) - 1

4. **Nominal GDP growth**: Calculated as:

   Nominal GDP growth = (1 + Real GDP growth) * (1 + Inflation rate) - 1

   with inflation rate data from the Planning Bureau.

5. **Real GDP per capita growth**: Calculated as:

   Real GDP per capita growth = (1 + Growth in the share of working-age population) * (1+ Employment rate growth) * (1 + Productivity growth) - 1

6. **Real GDP calculation**: Calculated as:

   Real GDP = (Real GDP previous year) * (1 + Real GDP growth actual year)

### Methodology to calculate the government debt ratio

The calculation of the government debt ratio involves several sub-steps to ensure a comprehensive and accurate projection. The steps are as follows:

1. **Healthcare costs calculation**:
   - **Reference case total healthcare costs**: Started by calculating the reference case total healthcare costs using the total real GDP (fixed at 2023 prices) and the healthcare costs as a percentage of GDP, both provided in SGA's Annual Report.
   - **Real healthcare costs annual growth**: Estimated the real healthcare costs annual growth using user or scenario inputs. Kept this growth rate constant for the years between input years.
   - **Total simulated real healthcare costs**: Calculated the total simulated real healthcare costs as:

Total simulated real healthcare costs = (Healthcare cost previous year) * (1 + Real healthcare cost annual growth of current year)

   - **Total healthcare costs as % of GDP (simulated)**: Calculated as:

Total healthcare costs as % of GDP (simulated) = (Total simulated real healthcare costs) / (Total real GDP, simulated for corresponding year)

2. **Pension costs calculation**:
   - **Number of people over legal retirement age**: Estimated the number of people over the legal retirement age by multiplying the share of people over the retirement age provided in the SGA data with the population over retirement age also provided by SGA for the reference case.
   - **Total pension costs in reference case**: Used the estimate for pension costs as a percentage of GDP provided by SGA to calculate the total pension costs in the reference case by multiplying it with the GDP projections.
   - **Pension costs per retired person**: Calculated as:

Pension costs per retired person = (Total pension costs in reference case) / (Number of people over retirement age in reference case)

   - **Total simulated pension costs**: Calculated as:

Total simulated pension costs = (Pension costs per retired person from reference case) * (Simulated number of people over retirement age)

- **Total pension costs as % of GDP**: Divided the total simulated pension costs by the corresponding real GDP figure to obtain the total pension costs as a percentage of GDP.

3. **Other aging costs calculation**:
   - **Reference case values**: Used the SGA reference case values for work incapacity costs, unemployment costs, familial allocations costs, and other social expenses.
   - **Percentage of GDP**: Calculated these costs as a percentage of GDP.
4. **Government debt ratio calculation**:
   - **Total aging costs as % of GDP**: Computed the aging costs as a percentage of GDP by summing the costs as a percentage of GDP for healthcare, pensions, and other aging costs (work incapacity, unemployment, familial allocation, and other social expenses).
   - **Primary balance as % of GDP estimation**: Estimated the primary balance as a percentage of GDP using the following formula:

Primary balance as % of GDP = (Primary balance previous year) + (Improvement in primary balance) + (Aging costs previous year - actual year)

- **Improvements in primary balance**: Computed based on user or scenario inputs for the improvement in primary balance vs 2024 in percentage points for the years 2029, 2040, and 2050 (with evolution in the years in between).
- **Total nominal adjustment**: Calculated as:

Total nominal adjustment = (Adjustment index actual year) * (Real GDP of 2024)

- **Interest expense**: Calculated as:

Interest expense = (Debt of previous year) * (Interest rate as % of debt actual year)

- **Primary balance calculation**: Calculated as:

Primary balance = (Primary balance as % of GDP) * (Nominal GDP)

- **Debt calculation**: Calculated as:

Debt = (Debt previous year) + (Interest expense) - (Primary balance) + (Adjustment index)

- **Total nominal GDP calculation**: Calculated as:

Total nominal GDP = (Nominal GDP previous year) * (1 + Nominal GDP growth rate)

- **Government debt ratio**: Calculated the government debt ratio as:

Government debt ratio = (Debt) / (Total nominal GDP)

- **Government deficit as % of GDP**: Calculated as:

Government deficit as % of GDP = (Interest rate as % of debt) + (Primary balance as % of GDP)

## Key Assumptions

- **Aging costs assumption**: From 2025 until 2070, apply the difference in aging costs vs the previous year to the primary balance. Sources: SGA June 2024 (aging costs) and Bureau de Plan July 2024 (primary balance).
- **Interest rate assumption**: From 2024 until 2029, use the interest rate from the Planning Bureau (2.5%), which is below the current 10-year risk-free rate. From 2030 use 3.0% interest rate. Source: Planning Bureau July 2024. Here we have tried to use a conservative assumption in order not to overestimate “snowball” or underestimate “long term debt normalization (r-g mechanism)” effects on government debt evolution.
- **Nominal GDP growth rate assumption**: From 2028 until 2050, replace the deflator with the inflation value to calculate the nominal GDP growth rate. Source: Planning Bureau July 2024.
- **Net migration assumption**: Assume that incoming migrants have the same age distribution of the overall Belgian population and that this population behaves in the same way of the overall Belgian population (e.g., in terms of employment rates or annual working age growth). Please note that this is in line with the fact that Belgium is currently not focusing on promoting skilled labor migration.
- **Healthcare cost growth assumption**: Assume that the user or scenario input for the real healthcare cost growth also takes into account changes in total population due to net migration.

The methodology detailed above aspires to strike a reasonable balance between sufficient accuracy and detailed modeling (e.g. feedback loops) in order to provide insightful projections that are sufficiently accurate, helping policymakers and stakeholders identify the major areas, themes and directions for decisions to address Belgium's demographic challenges. When working out such decisions, a more detailed analysis and impact calculation may be advisable.

# Endnotes

[1] *Conseil Supérieur des Finances - Comité d'étude sur le vieillissement, Rapport annuel 2024 | Bureau fédéral du Plan*. https://www.plan.be/fr/publications/conseil-superieur-des-finances-comite-detude-sur-22. Retrieved the 29 January 2025.

[2] Johan, Albrecht. « Tegen 2040 heeft België 124.000 extra zorgverleners nodig ». *De Tijd*, December 2024, https://www.tijd.be/politiek-economie/belgie/vlaanderen/tegen-2040-heeft-belgie-124-000-extra-zorgverleners-nodig/10572540.

[3] *Growth and Productivity in Belgium*. Federal Planning Bureau, October 2017.

[4] *Investing in productivity growth | McKinsey*. https://www.mckinsey.com/mgi/our-research/investing-in-productivity-growth. Retrieved the 30 January 2025.

[5] *Labor productivity growth rate (percent) | Indicator Profile | Prosperity Data360*. https://prosperitydata360.worldbank.org/en/indicator/WB+ASPD+dlpe. Retrieved the 30 January 2025.

[6] Belgium - Share of Economic Sectors in the Gross Domestic Product 2023 ». *Statista*, https://www.statista.com/statistics/328691/share-of-economic-sectors-in-the-gdp-in-belgium/. Retrieved the 30 January 2025.

[7] *Skills for job, Belgium country note*. OECD, https://www.oecdskillsforjobsdatabase.org/data/country_notes/Belgium%20country%20note.pdf.

[8] *Lifelong learning | Statbel*. https://statbel.fgov.be/en/themes/work-training/training-and-education/lifelong-learning#:~:text=With%20one%20in%20four%2025,the%20last%20year%20by%202025. Retrieved the 30 January 2025.

[9] *Cloud Adoption among EU Enterprises in 2023*. 16 February 2024, https://www.stackscale.com/blog/cloud-adoption-eu-enterprises/.

[10] *The Brussels Times*. https://www.brusselstimes.com/723475/belgium-ranks-first-in-europe-for-rd-intensity. Retrieved the 30 January 2025.

[11] *European Innovation Scoreboard 2024 Country profile Belgium*. European Commission, 2024, https://ec.europa.eu/assets/rtd/eis/2024/ec_rtd_eis-country-profile-be.pdf.

[12] *Starting a Business - Doing Business - World Bank Group*. https://archive.doingbusiness.org/en/data/exploretopics/starting-a-business. Retrieved the 30 January 2025.

[13] *Luxembourg: stronger productivity and labour supply would sustain GDP growth and living standards, says OECD*. OECD, https://www.oecd.org/en/about/news/press-releases/2022/11/luxembourg-stronger-productivity-and-labour-supply-would-sustain-gdp-growth-and-living-standards.html.

[14] Productivity in Luxembourg ». *UEL*, https://uel.lu/en/article/productivity-in-luxembourg/. Retrieved the 30 January 2025.

[15] *Ranked: Top Countries by GDP per Hour*. https://www.visualcapitalist.com/ranked-top-countries-by-gdp-per-hour/#:~:text=Where%20Workers%20of%20the%20World,output%20with%20relatively%20fewer%20people.

[16] See, Sharon. « Singapore's Labour Productivity up 2.4% a Year since Industry Transformation Maps Roll-out: MOF ». *The Business Times*, 1 novembre 2024, https://www.businesstimes.com.sg/singapore/singapores-labour-productivity-2-4-year-industry-transformation-maps-roll-out-mof.

[17] *Article Detail*. https://www.dbs.com/in/corporate/aics/article-detail.page. Retrieved the 31 January 2025.

[18] *Is Ireland's Productivity Boom Real or « Artificial »?* 6 February 2024. *www.bbc.com*, https://www.bbc.com/news/business-67992477.

[19] « Government at a Glance 2023: Estonia ». *OECD*, 29 June 2023, https://www.oecd.org/en/publications/government-at-a-glance-2023_c4200b14-en/estonia_e1676b75-en.html.

[20] *Ireland Labour Productivity Growth, 1999 – 2024 | CEIC Data*. https://www.ceicdata.com/en/indicator/ireland/labour-productivity-growth. Retrieved the 31 January 2025.

[21] *Employment and unemployment | Statbel*. https://statbel.fgov.be/en/themes/work-training/labour-market/employment-and-unemployment#:~:text=The%20unemployment%20rate%20amounts%20to%206%25&text=The%20unemployment%20rate%20amounts%20to%205.8%25%20for%20women%20and%206.1,145%2C000%20women%20and%2017. Retrieved the 29 January 2025.

[22] OECD (2023), Pensions at a Glance 2023: OECD and G20 Indicators, OECD Publishing, Paris, https://doi.org/10.1787/678055dd-en.

[23] European Commission. Statistical Office of the European Union. *Aging Europe: Looking at the Lives of Older People in the EU: 2019 Edition.* Publications Office, 2019. *DOI.org (CSL JSON)*, https://data.europa.eu/doi/10.2785/811048.

[24] This is the year Japan will really start to feel its age ». *The Economist*. *The Economist*, https://www.economist.com/the-world-ahead/2024/11/20/this-is-the-year-japan-will-really-start-to-feel-its-age. Retrieved the 29 January 2025.

[25] *Foreign-Born People and Their Descendants - Labour Market Indicators*. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Foreign-born_people_and_their_descendants_-_labour_market_indicators. Retrieved the 29 January 2025.

[26] OECD (2023), *Skills and Labour Market Integration of Immigrants and their Children in Flanders*, Working Together for Integration, OECD Publishing, Paris, https://doi.org/10.1787/4ea309cb-en.

[27] *The waiting period for asylum seekers to be allowed to work in Belgium is reduced from 6 to 4 months following the registration of their application | EMN*. https://emnbelgium.be/news/waiting-period-asylum-seekers-be-allowed-work-belgium-reduced-6-4-months-following?utm. Retrieved the 29 January 2025.

[28] International Migration Outlook 2024: Belgium ». *OECD*, 14 novembre 2024, https://www.oecd.org/en/publications/international-migration-outlook-2024_50b0353e-en/full-report/belgium_da26f5c2.html.

[29] European Labour Authority. *Report on Labour Shortages and Surpluses: November 2021.* Publications Office, 2021. *DOI.org (CSL JSON)*, https://data.europa.eu/doi/10.2883/746322.

[30] Employment Rate ». *OECD*, https://www.oecd.org/en/data/indicators/employment-rate.html. Retrieved the 30 January 2025.

[31] Danish Labour Market ». *Denmark.Dk*, https://denmark.dk/society-and-business/the-danish-labour-market. Retrieved the 29 January 2025.

[32] EU Unemployment Rate by Country 2024 ». *Statista*, https://www.statista.com/statistics/1115276/unemployment-in-europe-by-country/. Retrieved the 29 January 2025.

[33] *Labour Market Information: Denmark - European Union*. https://eures.europa.eu/living-and-working/labour-market-information-europe/labour-market-information-denmark_en. Retrieved the 29 January 2025.

[34] RVO, Netherlands Enterprise Agency. « Participation Act and Jobs Agreement ». *Business.Gov.Nl*, https://business.gov.nl/regulation/participation-act/. Retrieved the 29 January 2025.

[35] *The waiting period for asylum seekers to be allowed to work in Belgium is reduced from 6 to 4 months following the registration of their application | EMN*. https://emnbelgium.be/news/waiting-period-asylum-seekers-be-allowed-work-belgium-reduced-6-4-months-following?utm. Retrieved the 29 January 2025.

[36] *Netherlands Unemployment Rate 1991-2025*. https://www.macrotrends.net/global-metrics/countries/NLD/netherlands/unemployment-rate. Retrieved the 29 January 2025.

[37] *Vocational education and training at a glance*. https://www.berufsbildung-schweiz.ch/en/vocational-education-and-training-at-a-glance. Retrieved the 29 January 2025.

[38] O'Sullivan, Domhnall. « Swiss Jobless Rate Hits 20-Year Low: All Good News? » *SWI Swissinfo.Ch*, 10 January 2024, https://www.swissinfo.ch/eng/business/swiss-unemployment-hits-twenty-year-low-is-it-all-good-news/49115172.

[39] *Comprehensive Ranking System (CRS) criteria*. Governement of Canada, https://www.canada.ca/en/immigration-refugees-citizenship/services/immigrate-canada/express-entry/check-score/crs-criteria.html?utm.

[40] Government of Canada, Statistics Canada. *The Improvement in the Labour Market Outcomes of Recent Immigrants since the Mid-2010s*. 28 February 2024, https://www150.statcan.gc.ca/n1/pub/36-28-0001/2024002/article/00004-eng.htm?utm.

[41] Amt, Auswärtiges. « Germany Is Expanding and Simplifying Access to the Labour Market ». *German Federal Foreign Office*, https://www.auswaertiges-amt.de/en/2248702-2248702. Retrieved the 30 January 2025.

[42] Bajpai, Ashish. « Benefits of Immigration in Germany ». *Jaberi Lawyers*, 17 February 2023, https://www.jaberilawyers.com/news/benefits-of-immigration-in-germany/.

[43] https://www.nbb.be/doc/ts/publications/economicreview/2024/ecorevi2024_h09.pdf

[44] https://www.lse.ac.uk/Hellenic-Observatory/Assets/Documents/Publications/GreeSE-Papers/GreeSE-No54.pdf

[45] “Nederland houdt de staatsschuld laag. Rekenen we onszelf arm? » *FD.nl*, https://fd.nl/economie/1542979/braaf-nederland-rekent-zichzelf-arm. Retrieved the 31 January 2025.

[46] « World Bank Open Data ». *World Bank Open Data*, https://data.worldbank.org. Retrieved the 31 January 2025.

[47] « World Bank Open Data ». *World Bank Open Data*, https://data.worldbank.org. Retrieved the 31 January 2025.

[48] Yokoyama, Erica. « Japan Expects to Hit Primary Balance Goal After Decade of Delay ». *BNN Bloomberg*, 29 juillet 2024, https://www.bnnbloomberg.ca/business/international/2024/07/29/japan-expects-to-hit-primary-balance-goal-after-decade-of-delay/.

[49] Kiderlin, Sophie. « Germany’s “debt Brake” Rule Helped Collapse Its Government — and It Could Be about to Change ». *CNBC*, 22 novembre 2024, https://www.cnbc.com/2024/11/22/the-debt-brake-rule-that-helped-collapse-germanys-government.html.

[50] « Germany: National Debt in Relation to GDP 2015-2029 ». *Statista*, https://www.statista.com/statistics/427201/national-debt-of-germany-in-relation-to-gross-domestic-product-gdp/. Retrieved the 31 January 2025.

[51] « Germany - Budget Balance in Relation to GDP 2019-2029 ». *Statista*, https://www.statista.com/statistics/624187/germany-budget-balance-in-relation-to-gdp/. Retrieved the 31 January 2025.

[52]https://www.researchgate.net/publication/231828912_Why_Did_Estonia_Choose_Fiscal_Retrenchment_after_the_2008_Crisis

[53] https://www.oecd.org/en/publications/government-at-a-glance-2023_c4200b14-en/estonia_e1676b75-en.html

[54] « Government at a Glance 2023: Estonia ». *OECD*, 29 June 2023, https://www.oecd.org/en/publications/government-at-a-glance-2023_c4200b14-en/estonia_e1676b75-en.html.

[55] « Estonia’s Super-Simple Tax System Gives Growing Companies an Edge ». *Estonia Investment Agency*, https://impact.economist.com/projects/investing-in-estonia/. Retrieved the 31 January 2025.

[56] Sapiton, Mykhailo. « For a Decade and Counting, Estonia Has Had the Best Tax System ». *Invest in Estonia*, 21 October 2024, https://investinestonia.com/tax-competitiveness/.

[57] « Sweden Enters New Fiscal Policy Phase ». *Nordea*, https://www.nordea.com/en/news/sweden-enters-new-fiscal-policy-phase. Retrieved the 31 January 2025.

[58] Regeringskansliet, Regeringen och. « About the Swedish Fiscal Policy Framework ». *Regeringskansliet*, 20 septembre 2017, https://www.government.se/government-of-sweden/ministry-of-finance/central-government-budget/the-fiscal-policy-framework/.

[59] Si. « The Swedish Economy ». *Sweden.Se*, 11 December 2024, https://sweden.se/work-business/business-in-sweden/the-swedish-economy.

[60] https://ec.europa.eu/eurostat/databrowser/view/tesem050/default/table. Retrieved the 31 January 2025.

[61] *Is Ireland's Productivity Boom Real or « Artificial »?* 6 February 2024. *www.bbc.com*, https://www.bbc.com/news/business-67992477.

[62] Byrne, Leanna. « What Can Ireland Teach Us about Worker Productivity? » *Marketplace*, 26 December 2023, https://www.marketplace.org/2023/12/26/ireland-worker-productivity-big-tech/.

[63] « How companies are addressing workforce shortages and employee satisfaction with senior employment in Japan ». *World Economic Forum*, https://www.weforum.org/stories/2024/08/how-companies-are-addressing-workforce-shortages-through-senior-employment-in-japan/#:~:text=The%20Japanese%20government%2C%20through%20the,until%20the%20age%20of%2070.

[64] « Japan's new norm of working into your 70s may spread to rest of world soon ». *Business Standard*, https://www.business-standard.com/world-news/japan-s-new-norm-of-working-into-your-70s-may-spread-to-rest-of-world-soon-124090500090_1.html.

[65] NEWS, KYODO. « Meiji Yasuda Life to extend retirement age to 70 amid labor shortage ». *Kyodo News+*, https://english.kyodonews.net/news/2024/07/3d78f7f30efb-meiji-yasuda-life-to-extend-retirement-age-to-70-amid-labor-shortage.html. Retrieved the 31 January 2025.

[66] *Sweden Increases Pensionable Age, Right-To-Remain-Employed Age*. https://www.mercer.com/insights/law-and-policy/sweden-increases-pensionable-age/. Retrieved the 31 January 2025.

[67] NEWS, KYODO. « Meiji Yasuda Life to extend retirement age to 70 amid labor shortage ». *Kyodo News+*, https://english.kyodonews.net/news/2024/07/3d78f7f30efb-meiji-yasuda-life-to-extend-retirement-age-to-70-amid-labor-shortage.html. Retrieved the 31 January 2025.

[68] « Sweden: Parliament Adopts New Laws on Retirement ». *Library of Congress, Washington, D.C. 20540 USA*, https://www.loc.gov/item/global-legal-monitor/2019-10-29/sweden-parliament-adopts-new-laws-on-retirement/. Retrieved the 31 January 2025.

[69] « Health and Health System Ranking of Countries Worldwide in 2023 ». *Statista*, https://www.statista.com/statistics/1376359/health-and-health-system-ranking-of-countries-worldwide/. Retrieved the 31 January 2025.

[70] Crew, Bec. « Worth the Cost? A Closer Look at the Da Vinci Robot's Impact on Prostate Cancer Surgery ». *Nature*, vol. 580, nº 7804, avril 2020, p. S5-7. *www.nature.com*, https://doi.org/10.1038/d41586-020-01037-w.

[71] « Hospitals in Belgium 2000-2022 ». *Statista*, https://www.statista.com/statistics/556787/hospitals-in-belgium/. Retrieved the 31 January 2025.

[72] *health.ec - This website is for sale! - health Resources and Information.* https://health.ec/system/files/2023-12/2023_chp_be_english.pdf. Retrieved the 31 January 2025.

[73] *Health at a Glance: Europe 2024*. https://www.oecd.org/en/publications/health-at-a-glance-europe-2024_b3704e14-en.html.

[74] author-health. « Medical Imaging ». *For a Healthy Belgium*, 7 mars 2024, https://www.healthybelgium.be/en/key-data-in-healthcare/general-hospitals/quality-and-innovation/medical-imaging?utm.

[75] *Hospital Discharges and Length of Stay Statistics*. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Hospital_discharges_and_length_of_stay_statistics. Retrieved the 31 January 2025.

[76] *REQUIRED HOSPITAL CAPACITY IN 2025 AND CRITERIA FOR RATIONALISATION OF COMPLEX CANCER SURGERY, RADIOTHERAPY AND MATERNITY SERVICES,* KCE, https://kce.fgov.be/sites/default/files/2021-11/Download%20the%20short%20report%20in%20English%20%28110%20p.%29.pdf?utm

[77] *New pricing models for generic medicines to ensure long-term healthy competitiveness in Europe*. Medicines for Europe, https://www.medicinesforeurope.com/wp-content/uploads/2022/06/New-pricing-models-for-generic-medicines.pdf

[78] Johan, Albrecht. « Tegen 2040 heeft België 124.000 extra zorgverleners nodig ». *De Tijd*, December 2024, https://www.tijd.be/politiek-economie/belgie/vlaanderen/tegen-2040-heeft-belgie-124-000-extra-zorgverleners-nodig/10572540.

[79] https://www.oecd.org/en/publications/health-at-a-glance-europe-2024_b3704e14-en.html

[80] https://www.healthybelgium.be/metadata/hspa/2024/A10.pdf

[81] https://iris.who.int/bitstream/handle/10665/376805/9789289059589-eng.pdf?sequence=1

[82] https://www.government.nl/topics/medicines/keeping-medicines-affordable.

[83] https://www.commonwealthfund.org/international-health-policy-center/countries/netherlands#:~:text=Role%20of%20public%20health%20insurance,remaining%205%20percent%20of%20financing.

[84] « Netherlands: Health Expenses to GDP ». *Statista*, https://www.statista.com/statistics/576000/total-health-expenditure-as-share-of-gdp-in-the-netherlands/. Retrieved the 31 January 2025.

[85] *Out-of-Pocket Payments for Health Care Are Low in France, but Gaps Persist for People with Low Incomes, New WHO Report Reveals*. https://www.who.int/europe/news-room/22-04-2024-out-of-pocket-payments-for-health-care-are-low-in-france--but-gaps-persist-for-people-with-low-incomes--new-who-report-reveals. Retrieved the 31 January 2025.

[86] https://www.commonwealthfund.org/publications/issue-briefs/2019/nov/what-can-united-states-learn-drug-spending-controls-france#:~:text=Key%20Findings%20and%20Conclusion:%20To,restricting%20access%20to%20new%20drugs.

[87] https://www.canada.ca/en/health-canada/programs/consultation-regulations-patented-medicine/document.html

[88] https://www.canada.ca/en/health-canada/services/health-care-system/reports-publications/health-care-system/canada.html

[89] *Conseil Supérieur des Finances - Comité d'étude sur le vieillissement, Rapport annuel 2024* | *Bureau fédéral du Plan*. https://www.plan.be/fr/publications/conseil-superieur-des-finances-comite-detude-sur-22. Retrieved the 31 January 2025.

[90] *Federaal planbureau*, https://www.plan.be/uploaded/documents/202406140946020.FOR_MIDTERM_2429_13014_N.pdf.