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THE REPUBLIC OF SLOVENIA

SELECTED ISSUES

January 2026

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Approved By
European Department

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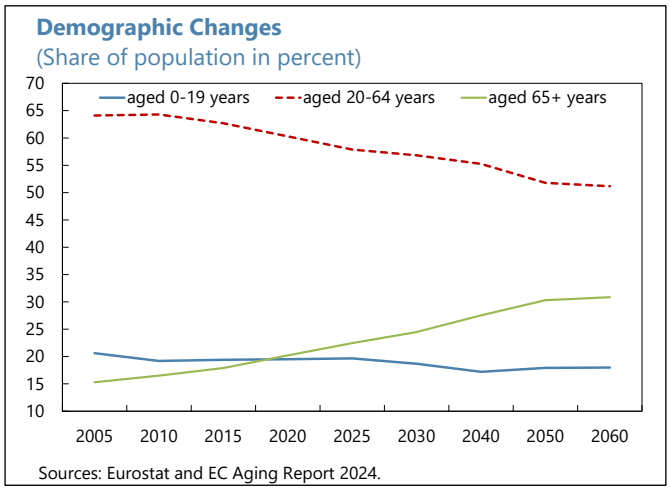
FINANCIAL CHALLENGES IN THE HEALTH SECTOR

Healthcare and long-term care expenditures are projected to rise significantly in Slovenia over the medium and long term, primarily due to rapid population aging. This chapter examines the financial challenges confronting the health sector—the increasing demand for healthcare and long-term care, alongside a financing system that has not yet adapted to this evolving context—and outlines reforms to enhance the sector's long-term sustainability.

A. The Context: A Fast-aging Population

1. Population aging in Slovenia is projected to accelerate over the medium to long term, driven by rising life expectancy and a declining fertility rate. This is occurring faster than in other EU countries: aging is projected to be among the most intensive among EU and OECD countries. By 2060, the shares of the population aged 65+ (elderly) and 80+ (very elderly) are projected to exceed the EU average, with "aging intensity" accelerating beyond the EU average.[1]



2. Aging increases the demand for healthcare and long-term care (LTC) spending but also reduces financing sources for the health sector, impacting financial sustainability. Demand for health services tends to rise more quickly as people get older. Health expenditure starts to grow rapidly after the age of 60 and more than doubles by the age of 80, as more and increasingly costly care is needed (EC, 2024). Similarly, as more people require assistance with daily activities as they age, LTC spending is expected to increase. As these needs for health services intensify, an aging population also reduces the workforce, potentially lowering compulsory health contributions, the main source of healthcare financing. In 2010, Slovenia crossed the "demographic turning point"—when the share of working-age population starts declining—and in 2016 the rising share of elderly (age 65+) has surpassed the share of young (age <19).

3. These trends underscore the urgency for comprehensive reforms in the healthcare and LTC systems. More resolute efforts are needed to strengthen the health system to successfully provide care for an increasingly silver population and maintain financial sustainability.

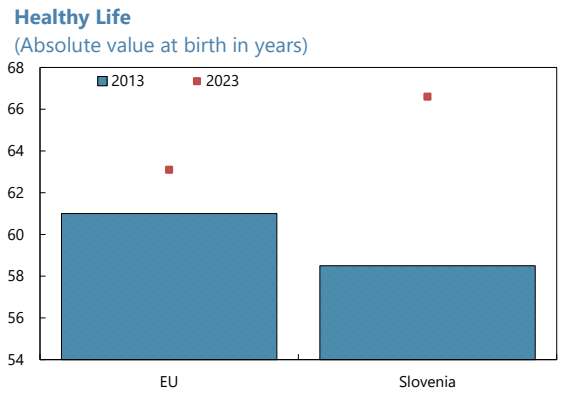
[1] See details in the European Commission (EC) Aging Report, 2024. The EC Aging Report describes aging intensity as the ratio of very elderly population (age 80+) to elderly population (age 65+). Spending on healthcare and LTC are significantly higher for age 80+, with prevalence of disability increasing with age, and dependency rate increases significantly for age 80+.

B. Rising Need for Higher Health Expenditure

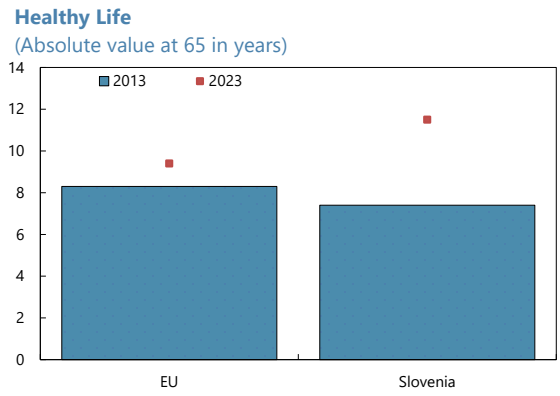
4. The past decade has seen significant improvements in health outcomes against the background of steady increases in healthcare expenditure.

Text Figure 1. Improving Health Outcomes

Significantly longer life ...



... and aging in better health, above the EU average.



Source: Eurostat.

- *Health outcomes:* It is widely recognized that multiple indicators show strong improvements in health outcomes for Slovenia.[2] More individuals have reported to be in good health, and longer life expectancy has not only outpaced regional peers but also surpassed the EU average since 2015. Improved health outcomes, especially with active aging in an older population (¶13), would help to slow expenditure growth and boost financing sources for the healthcare and LTC systems to the extent that workers stay longer in employment.

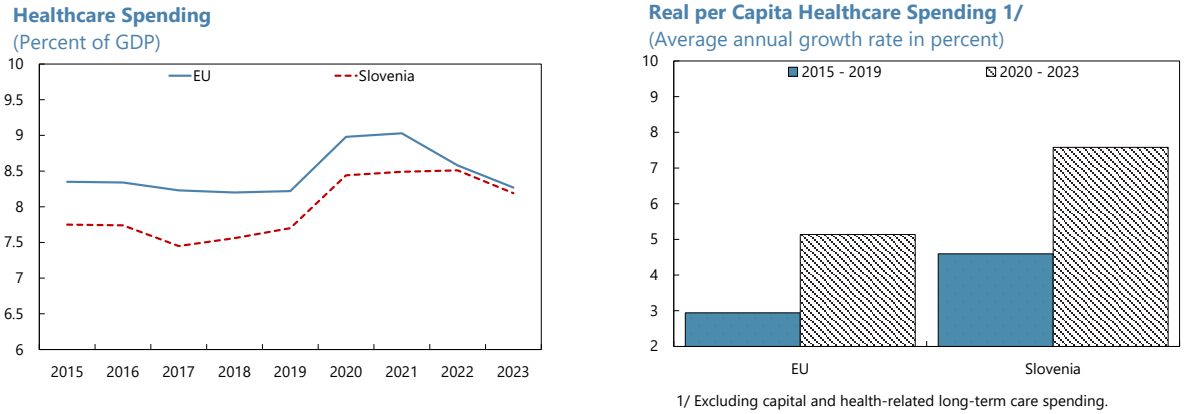
- *Healthcare:* Spending averaged 7.6 percent of GDP during 2016-19 but increased in 2020 and has stayed elevated (averaging 8.4 percent of GDP during 2020-2023). While the level of spending is now marginally below the EU average, the average annual real growth rate of health spending in Slovenia is among the highest in the EU (IMAD, 2024).

- *Long-term care:* Spending remains comparatively low because the LTC system was historically fragmented in terms of organization and financing, leading to suboptimal outcomes. Reforming the LTC took more than ten years, delayed partly because of challenges to ensure financial sustainability. Implementing the new LTC Act starting 2024 marks a major milestone.

[2] See details in OECD (2025), OECD/EC (2024), Polin et al. (2024) and OECD/EOHSP (2023).

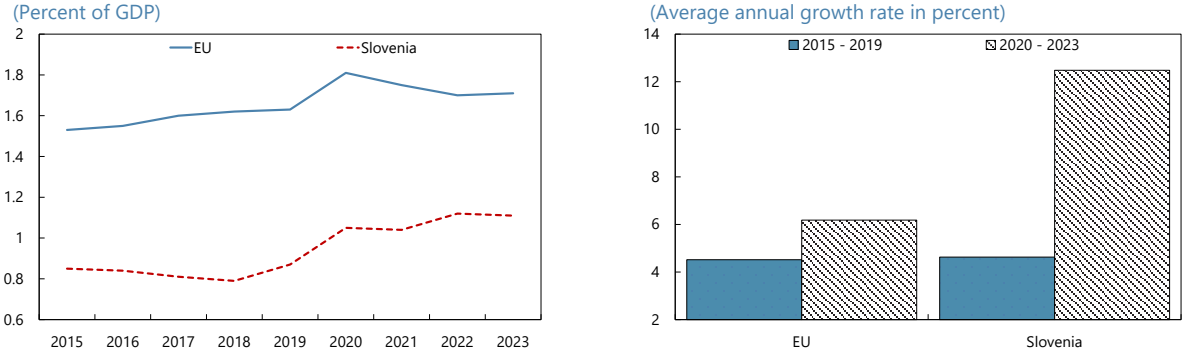
Text Figure 2. Growing Healthcare and Long-term Care Spending

Spending on healthcare grew faster than the EU average, and its level reached the EU average in 2022.



1/ Excluding capital and health-related long-term care spending.

Spending on LTC remains below the EU average, though growing much faster in recent years.



Sources: Eurostat and IMF staff estimates.

5. But the health sector faces ongoing challenges. Although selected components of the health reforms have received funding through the National Recovery and Resilience Plan, uncertainty persists regarding the financial resources required for other measures such as short-term interventions to stabilize unprecedented long waiting times,[3] updating payments models to reflect actual costs and providing staffing for healthcare and LTC. Persistent labor shortages, including aging healthcare workers, have hindered the supply of health services. Addressing these shortages would improve the supply of care and reduce costs as delayed treatment from longer waiting times often results in more expensive treatment, sometimes more than twice as costly. Efforts are ongoing to replace stop-gap measures (that offered some temporary reliefs) with a comprehensive reform. Importantly, the National Strategy for the Management and Development of Human Resources in Healthcare (2026-2036), under preparation, aims to optimize, develop, and

[3] Slovenia's health system is facing serious challenges since the last decade as demand far exceeded supply. Slovenia currently ranks among the highest in terms of unmet medical needs due to excessively long waiting times for specialist appointments, elective surgeries (e.g., hip, knee and cataract) and allocation to a primary care physician.

strengthen the healthcare workforce to meet the ongoing strong demand for staffing. A stable source of financing is essential to ensure that the Strategy can be effectively implemented over the long term.

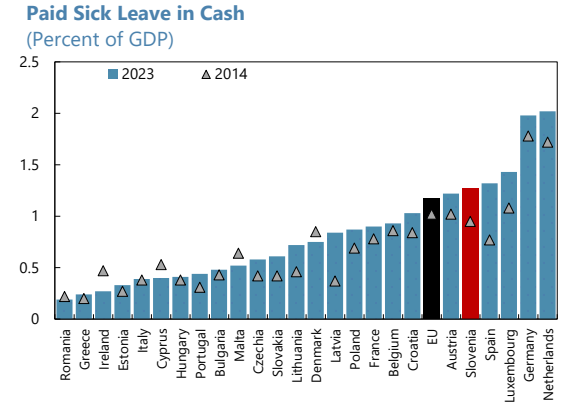
6. Generous sick leave benefits add to health spending. Slovenia has one of the most generous benefits among EU and OECD countries covered by the compulsory social health insurance (SHI).[4] There is cash compensation for loss of salary during temporary absence from work—without caps on the compensation and duration of sick leave. For example, data up to 2020 showed that the longest absence due to illness was 11.5 years and the highest monthly payment was over €21,000 (Court of Audit, 2023).

- As a result, spending on sick leave benefits by the Health Insurance Institute of Slovenia (HIIS) is large and growing significantly: close to 10 percent annually in real terms in the last decade and annual spending has now surpassed 1 percent of GDP. The labor market has been impacted: absence from work due to illness has nearly doubled in the last decade, now averaging close to 20 days per employee (EU average is 12 days) and data in 2025 showed that one-third of workers have been on sick-leave for over one year.[5]

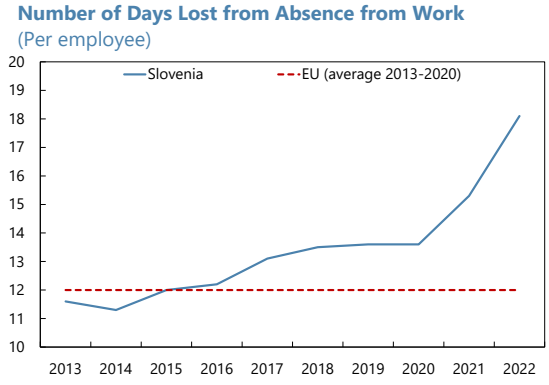
- Long-term absenteeism is a financial concern as it reduces labor productivity[6] and prompts early retirement that shrinks the working-age population to lower SHI contributions (¶2). Consequently, worsening labor shortages while raising demand for healthcare and LTC.

Text Figure 3. Increasing Sick Leave Spending

Spending on sick leave is among the highest in the EU.



Absence from work due to illness recorded a rapid rise.



Sources: Eurostat, IMAD (2024) and IMF staff estimates.

- There is room for improving efficiency when managing sick leave benefits (OECD, 2022 and Court of Audit, 2023). The in-depth evaluations on Slovenia's sick leave system have resulted in

[4] There is cash compensation from the SHI for loss of salary after 30 days of absence, with employers covering the first 30 days. Depending on criteria, the compensation ranges between 70 and 100 percent of salary.

[5] See details in annual reports from HIIS and OECD (2022).

[6] See analysis on how sick leave negatively affects labor productivity in Bank of Slovenia's Review of Macroeconomic Developments September 2025.

ongoing efforts to implement tighter controls, enhance governance and collect more data to analyze absenteeism. To contain spending on sick leave, a cap was first introduced in 2024 to limit the compensation to 2.5 times the average gross monthly salary. Taken together, these recent measures could save at least 0.1 percent of GDP annually.[7] Going forward, it will be critical to limit the number of sick leave days covered as indefinite entitlement is not financially sustainable. In addition, the costs of absenteeism could be reduced through better coordination across health authorities and programs, healthcare providers, and employers. This involves streamlining assessment and monitoring of sick leave, systematically integrating sick leave (temporary) and disability insurance (permanent) and creating incentives for employees' timely return to work.

7. Looking forward, spending on healthcare and LTC will account for a rising share of GDP. The EC Aging Report (2024) projected that Slovenia could face one of the most significant increases within the EU in healthcare and LTC spending over the medium (2025-30) and long term (2025-40 and up to 2060) (Box 1). These projections cover different types of scenarios and even in the EC's healthy aging scenario, the gains (i.e., savings in spending) appear limited. Other sources (OECD, 2024 and IMAD, 2019) also indicated that rising health spending would coincide with declining government revenues over the long run as the working population shrinks. These future trends make the health sector a source of concern for fiscal sustainability.

[7] Staff estimate based on information provided by HIIS.

Box 1. Medium-and Long-term Projections for Spending on Healthcare and Long-term Care Under Different Scenarios

Healthcare: In the projections from the EC Aging Report (2024), health spending is a function of changes in demographics, health status and non-demographic factors.

- The **baseline** captures the prominent impact of aging and a moderate impact from non-demographic factors. The projections assume no changes to current policies and health systems. Projections for Slovenia accounted for the following reform measures: higher salaries in the health sector following the public sector wage reform in 2024, additional coverage on mental health, and integration of the voluntary health insurance into the compulsory scheme.

- The alternative scenarios examine other main factors of spending: (i) the **healthy aging scenario** lowers spending through favorable conditions as years from longer life expectancy are spent in good health (baseline assumes only half are spent in good health); and (ii) the **risk scenario** introduces greater demand for health services due to non-demographic factors (e.g., costly new technology).

- **Healthcare spending increases over the long run**. In the baseline, healthcare spending is projected to increase by almost 1 pp of GDP by 2060. The increases in the healthy aging and risk scenarios are 0.6 pp and 2.1 pp of GDP, respectively.

Healthcare Spending Increases		**2025-2030**	**2025-2040**	**2025-2060**
		in percentage points of GDP		
Baseline	Slovenia	0.2	0.7	0.9
	EU	0.1	0.3	0.6
Healthy aging	Slovenia	0.2	0.5	0.6
	EU	0.0	0.2	0.3
Risk	Slovenia	0.5	1.4	2.1
	EU	0.2	0.7	1.3

Long-term care: Projections share a similar framework with healthcare, but demographics have a larger impact on LTC. Hence the model is augmented by factors capturing aging, including the dependency ratio and the country's institutional set up for receiving LTC (e.g., formal care vs. cash benefits).

- The **baseline** accounted for higher salaries in the health sector and more spending due to additional services provided under the LTC Act adopted in 2023.

- The alternative scenarios: (i) the **healthy aging scenario** reduces demand for LTC by assuming that all years of longer life expectancy are spent in good health (baseline assumes only half); and (ii) the **risk scenario** assumes rising age-related cost.

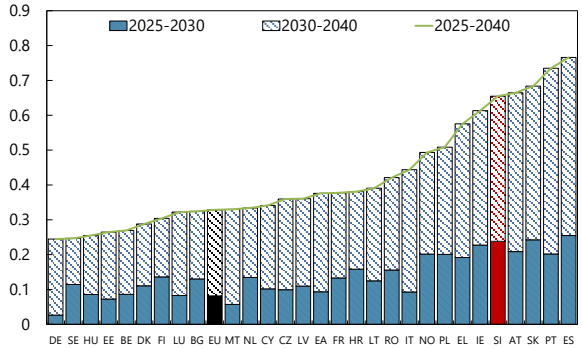
- **Long-term care spending increases over the long run**: In the baseline (and similarly under healthy aging scenario), spending could rise by 1 pp of GDP by 2060 while the increase would more than double under the risk scenario.

Long-term Care Spending Increases		**2025-2030**	**2025-2040**	**2025-2060**
		In percentage points of GDP		
Baseline	Slovenia	0.1	0.4	0.8
	EU	0.1	0.4	0.7
Healthy aging	Slovenia	0.1	0.3	0.7
	EU	0.1	0.3	0.6
Risk	Slovenia	0.2	0.8	2.3
	EU	0.2	0.7	1.9

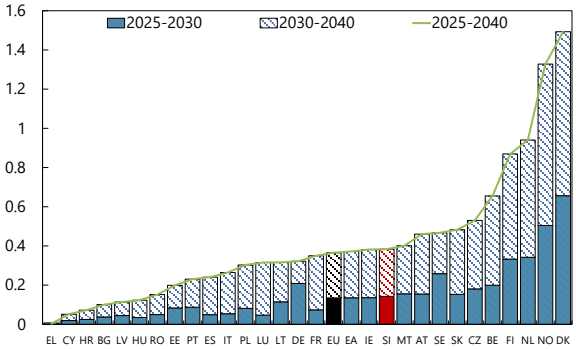
Source: EC Aging Report 2024.

Figure 1. Medium-and Long-term Projections for Spending on Healthcare and Long-term Care Under Different Scenarios

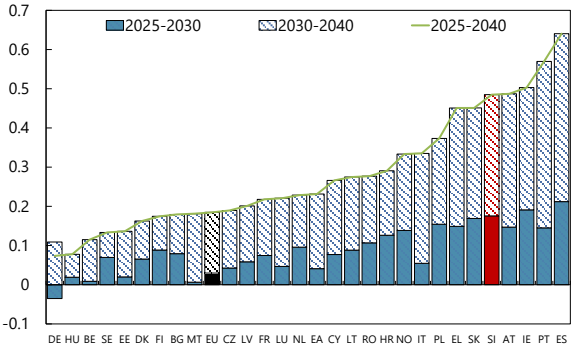
Healthcare Spending (baseline)
(Change in percentage of points of GDP)



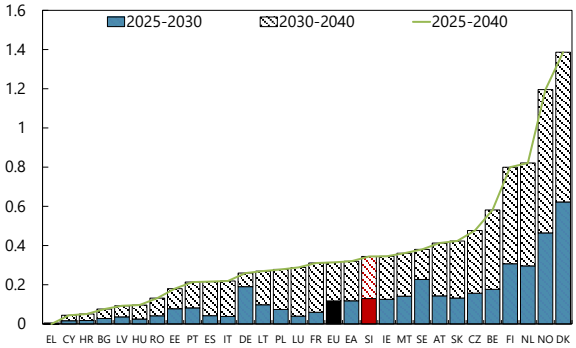
Long-term Care Spending (baseline)
(Change in percentage points of GDP)



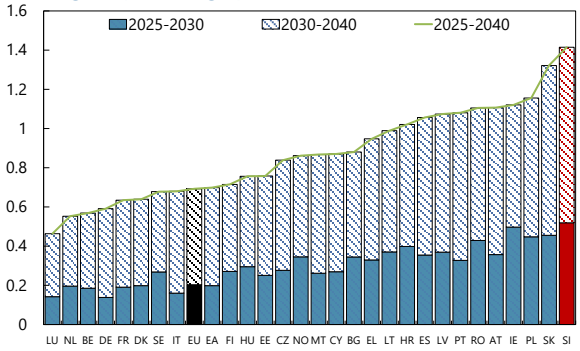
Healthcare Spending (healthy aging)
(Change in percentage points of GDP)



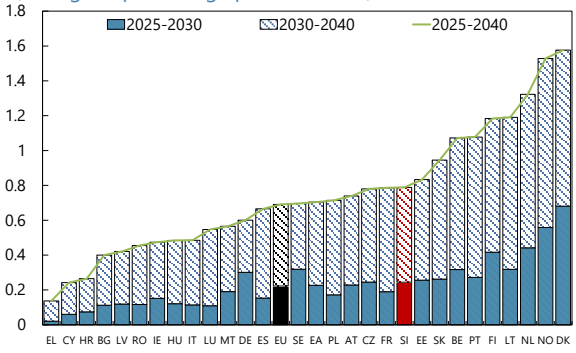
Long-term Care Spending (healthy aging)
(Change in percentage points of GDP)



Healthcare Spending (risk)
(Change in percentage points of GDP)



Long-term Care Spending (risk)
(Change in percentage points of GDP)



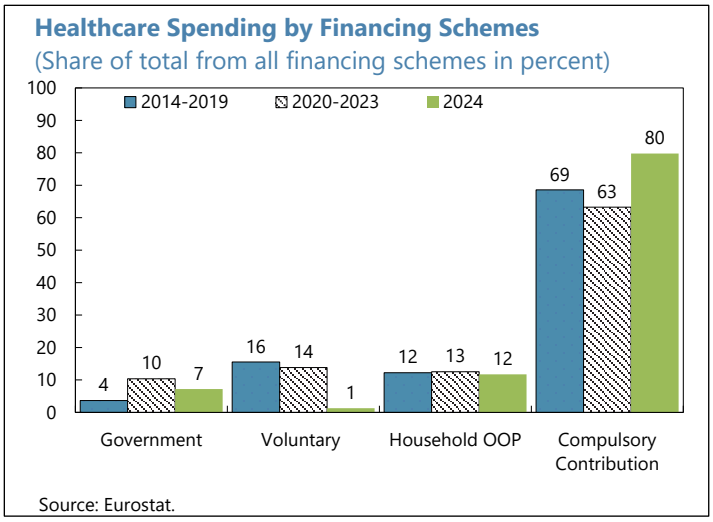
Source: EC Aging Report 2024.

C. A Health Financing Structure That is Not Fit for Purpose

8. Slovenia's Healthcare and LTC financing is notable among OECD and EU countries for its heavy reliance on compulsory payroll contributions. While the mandatory social health insurance (SHI) is the main source of healthcare and LTC financing, top-ups from the state budget would need to increase to sustain the health sector against demographic challenges. Providing universal health coverage, the SHI is regulated through legislation and centrally administered by HIIS as the sole public insurer.

- **Employee-employer contribution is highly cyclical[8] and, ceteris paribus, will decline over time as the workforce shrinks alongside the aging population.** The contributions have become an even more important financing source since the voluntary health insurance (VHI) was abolished (see below). A new compulsory contribution to the SHI replaced the VHI in January 2024 and further raised the public-to-private funding ratio to nearly 85:15 (from 75:25 previously).

- **Share of private sources is small.** The now-abolished VHI[9] was used to fully cover co-payments, a unique feature of the Slovenian healthcare system. As a result, the other component of private financing—household's out-of-pocket payment (OOP)—is among the lowest in the EU, partly explaining the high demand for healthcare and exacerbating long waiting times.



- **Contribution from the state budget could become large ex-post.** Government sources of revenues for HIIS include the state budget, local government budgets, and transfers from social security funds. While the two latter sources have been stable, the share of the state budget in SHI revenues could turn out to be much higher ex post when needed to close funding gaps (see ¶9). The share of financing from the government grew from 4 percent (average 2015-2019) to reach 10 percent (2020-2024), in part due to discretionary health

[8] During Slovenia's economic crisis in 2009, the negative impact on financing of the health system was significant. See details in Albreht et al. (2016) and IMAD (2019).

[9] While the VHI was regressive due to flat-rate premiums, it minimized OOP health spending for households, especially for medicines and medical equipment.

measures during the pandemic. General government spending by function[10] shows that the share of health spending in total spending in Slovenia has exceeded the EU average since 2017.

- **The new LTC Act introduces mandatory contributions from both the private sector and the state budget.** Substantial funding is required when implementing the new LTC system with additional rights and benefits while ensuring sustainability over the long term. Effective July 2025, the new social security fund for LTC collects compulsory contributions from employers, employees, pensioners, self-employed and farmers, supplemented by an annual allocation up to €190 million from the state budget (about 0.3 percent of GDP). There is a provision in the LTC Act allowing for the introduction of co-payment (10-20 percent of the cost) to start in 2028 if the LTC contributions are inadequate.

9. The narrow funding structure creates fiscal risks and uncertainty over the quality and quantity of rights and services in the health sector. Although the annual spending of HIIS is capped to prevent budget overruns, revenues can fall short of spending, thereby creating potential risks for the state budget. Accounting for announced health reforms in recent years, the Fiscal Council (2024) estimates that revenues may not be sufficient to cover liabilities of HIIS in the near and medium term. Insufficient funding has reduced the range of fully financed services in recent years.[11] As a first step, the gap between revenue and spending could be filled using HIIS reserve funds and interim adjustments in spending.[12] Without a legal requirement for government funds to cover HIIS financing gaps, annual negotiations determine additional contributions from the government. To manage fiscal risk, the state budget can impose temporary caps on allocations made to HIIS (e.g., €420 million in 2024 and 2025).[13]

D. Reforms: Progress and Priorities

10. Tackling health sector challenges requires a comprehensive set of reforms, which take time to implement and yield results. A comprehensive review of the health system in 2015 was promptly followed by Slovenia's National Healthcare Plan 2016-2025 (Health Plan) outlining key reform strategies. Despite progress with implementing the Health Plan (Box 2), the lack of quantification has prevented an assessment of the realized savings from these reform measures. Assuming no new reforms are introduced, staff estimates that effective implementation of current policies and measures could yield savings of approximately 0.4 percent of GDP by 2040, primarily from healthcare reforms. This compares to the projected increase in total health spending in the EC Ageing Report of 1.1 percent of GDP (0.7 and 0.4 percent of GDP, respectively, in healthcare and LTC under the baseline scenario) and would align Slovenia's spending with the EU average (see Box 1 for comparison). Going forward, the new Health Plan, currently in preparation, would need to ensure financial sustainability of the health system for an aging

[10] See COGOF data in Eurostat. In 2023, share on health spending was 15.9 percent in Slovenia (EU average was 14.8 percent).

[11] See details in Polin et al. (2024) and OECD/EOHSP (2023).

[12] Annually, HIIS is required to balance revenues and spending, set the cap for total spending with MoF and MoH, and is not allowed to accumulate arrears.

[13] Draft Budgetary Plan 2024 and Act on Implementation of Budgets of Republic of Slovenia for 2024 and 2025.

population. Gaps in three priority areas should be addressed before significant spending pressures materialize.

11. First, the financing structure of the healthcare and LTC systems needs to be strengthened. While the challenges discussed above are well recognized,[14] the current financing structure, even with the LTC Act, is not suitable for addressing the challenges of a rapidly aging population and a shrinking workforce. The LTC Act represents an important improvement, and the prompt implementation of other critical measures to ensure sustainable health financing should be prioritized.

- It is critical to adapt the financing structure to aging while safeguarding healthcare and LTC rights and benefits. Diversifying financing sources beyond payroll contributions would alleviate pressures on the state budget. This could include: (i) a primary measure to widen the revenue base to finance the SHI and (ii) a secondary measure to increase private financing through more OOP and co-payment schemes for targeted health goods and services. For example, a review of the contribution rates in the SHI would be timely as they have not changed over the last three decades.

- In addition, reductions in SHI revenues due to lower contributions during economic downturns can be addressed more effectively with countercyclical mechanisms. For example, a health stabilization fund could be established to accumulate surpluses in good times to be used in bad times under specific crisis conditions and managed through legislative oversight with strong governance to ensure spending is efficient.

12. Second, there is room for efficiency gains. International evidence[15] suggests that a significant share of health spending is inefficient: more care or better outcomes could be produced without additional spending by doing things differently and promoting responsible use of resources (Box 3). The reform measures in Slovenia have long recognized the importance of greater efficiency to contain spending pressures (IMAD, 2019 and Box 3). And there is scope to continue strengthening governance,[16] increasing usage of digital health solutions,[17] and optimizing processes.[18] These efficiency-oriented measures have been proven helpful in lowering health spending for other EU and OECD countries.

- A comprehensive spending review of the health sector—aimed at identifying operational bottlenecks, cost-inefficient practices, and areas with higher returns and efficiency gains—would help to contain spending pressures. Moreover, HIIS, MoH and MoF should jointly monitor the

[14] See details in IMAD (2019).

[15] See Medeiros and Schwierz (2015), OECD (2017) and Canzonieri and Giamboni (2024).

[16] The Healthcare Quality Assurance Act adopted in 2024 is set to provide long-term savings by improving governance, coordination and monitoring of the health system.

[17] Ongoing digital transformation of the health system through Slovenia's Recovery and Resilience Plan, and the Healthcare Digitalization Act was adopted in June 2025.

[18] Lower spending is achieved by reducing duplicate tests and avoidable hospital admissions; streamlining treatment by optimizing different budgets (e.g., HIIS, hospitals, primary care and LTC); and centralizing procurements and complex services. To improve workforce efficiency, the Recognition of Professional Healthcare Act adopted in 2025 aims to accelerate the integration of labor from outside Slovenia by centralizing and standardizing the processes.

savings delivered and introduce mechanisms to reward efficiency gains and responsible spending, such as linking funding to performance indicators.

13. Third, adapting to demographic changes—living longer and healthier—requires changes to systems and policies. Slovenia has responded by adopting the Active Aging Strategy (2017-2030)—an integrated approach across several pillars including health, long-term care, education and labor market. Going forward, better coordination of policy actions will be critical to systematically prolong working life of the population through healthy longevity, reduce absenteeism, and create a sustainable demand for healthcare and LTC.

- Aging in good health can ease financial pressures on the health system. Ongoing implementation of the Strategy for the Development of Health Services in Primary Healthcare (2024-2031), together with more effective health-promotion and prevention policies, would keep Slovenians active and healthy for longer to limit or postpone health and aging problems. This would effectively lower health spending by reducing avoidable utilization and reallocating resources away from costly inpatient care, specialists and institutions.

- Expanding the labor supply of the older population would boost contributions for the SHI and LTC. Compared to the EU average, Slovenia continues to have one of the lowest employment rates among older workers (e.g., age 55-64) and a relatively low participation rate of older employees in lifelong learning, strongly indicating room for policies to increase labor force participation and support workforce re-entry and re-skilling.[19] Prioritizing measures to extend the working lives of older people would help. Workers would benefit more by accelerating active labor market policies such as job adaptation programs to transition to age-friendly roles. Public and private initiatives on lifelong up-skilling and re-skilling are critical for workers to remain productive and competitive. Companies should foster age-management capabilities and promote intergenerational cooperation to facilitate knowledge transfer.

E. Conclusion

14. The Slovenian health sector is facing financial challenges driven by one of the most intensive aging trajectories among EU and OECD countries. Population aging poses a dual structural concern: rising demand for healthcare and long-term care goods and services is escalating financing pressures while a shrinking workforce lowers contributions to the SHI that is the main source of financing.

15. Despite ongoing reforms, the financial challenges of Slovenia's health systems require further action to mitigate long-term fiscal risks. These should focus on: (i) strengthening and diversifying the financing structure; (ii) pursuing efficiency gains and (iii) accelerating adaptation to active aging. Such measures would contain spending pressures and maintain access to quality care while safeguarding long-term sustainability of the health system.

[19] See details in IMAD (2019).

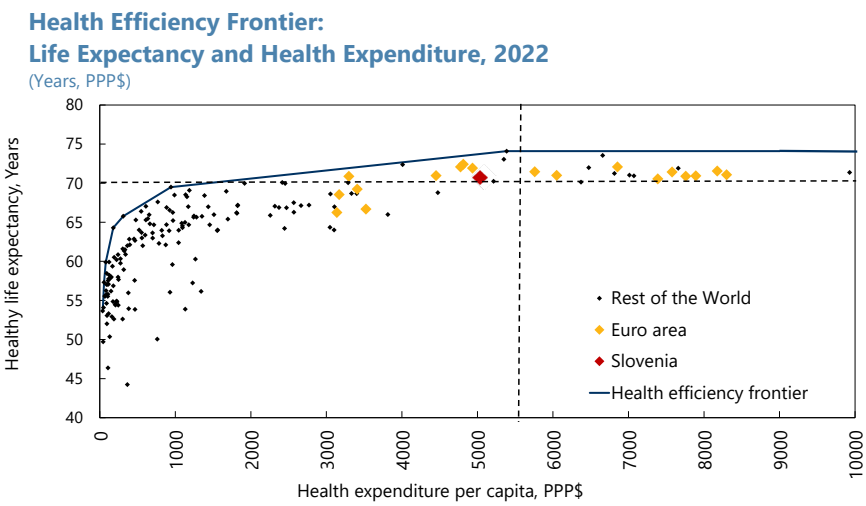
Box 2. Status of Selected Health Reforms

Reform Measures	Status
Long-term Care Act	Adopted (2023)
Emergency Measures to Ensure Stability of Healthcare System *(to address waiting times and staffing issues)*	Adopted (2022)
Intervention Measures in Field of Health, Labor and Social Affairs and Health-Related Content	Adopted (2023)
of which: Tighten sick leave benefits	Implemented (2024)
Replace VHI with a new compulsory contribution	
Additional Intervention Measures to Ensure Accessibility in Healthcare	Adopted (2024)
Quality Assurance in Healthcare Act	
Health Services Act *(to separate public and private health services and prohibit dual practices)*	Adopted (2025)
Digitalization Act	
Strategy: Healthcare Digitalization (2022-2027)	Ongoing implementation
Strategy: Development of Health Services in Primary Healthcare (2024-2031)	
Strategy: Active Aging (2017-2030)	

Sources: MoH, MoF, HIIS and IMAD and IMF staff estimates.

Box 3. Estimating Health Spending Efficiency

The health efficiency frontier analysis is a common empirical approach[1] to quantify potential efficiency gains. The efficiency scores are derived from the frontier that represents countries with the most efficient performance in a sample. Several studies during 2013-2021 (EC, OECD, IMF and IMAD) quantified the efficiency scores for Slovenia, and with estimates ranging from 0.5 to 0.9, Slovenia is often an average performer in the sample. A larger and more recent sample in 2022 estimated a score above 0.9, placing Slovenia relatively close to the frontier (figure below). Theoretically, the current level of health spending can be applied more efficiently based on best practices on the frontier to gain approximately three additional years of healthy life.



Note: Healthy life expectancy is a measure of health expectancy that applies disability weights to health states too compute the equivalent number of years of life expected to be lived in full health. Dashes correspond to the average for EA.
Source : IMF FAD Health Assessment Tool.

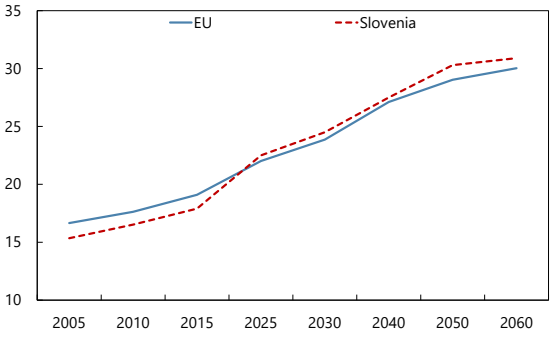
These efficiency scores can be translated into potential savings. For example, IMF (2015) quantified a score of 0.5 and estimated that closing that gap by half could yield savings of 2 percent of GDP. However, with more recent estimates indicating that Slovenia is moving closer to the frontier, savings would be below 1 percent of GDP. Other studies using a long-term scenario analysis suggest that, realizing efficiency gains in Slovenia could potentially reduce annual health spending by 0.6 percentage points of GDP from the baseline spending trajectory (Medeiros and Schwierz, 2015 and IMAD, 2016a and 2016b).

[1] The scores are highly sensitive to model specification and choice of output-input variables. See technical details and limitations of the approach in Canzonieri and Giamboni (2024), Garcia-Escribano et al. (2022), and Dutu and Sicari (2016).

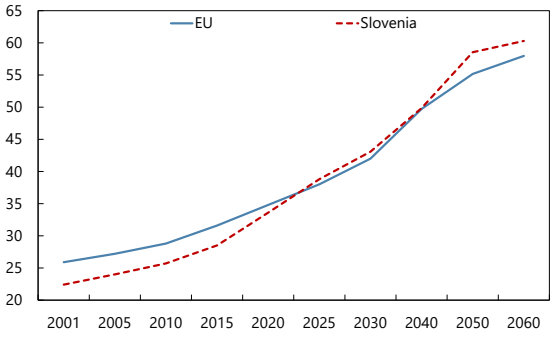
Figure 2. Aging Population

Aging is projected to shrink the working population and raise the dependency ratio, adding long-terms pressures to the healthcare and LTC systems.

Elderly Population (65+)
(Share of total population in percent)

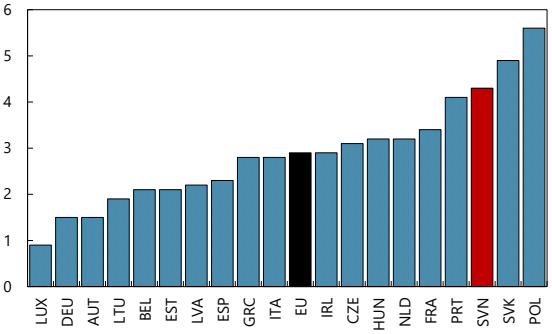


Old-Age Dependency Ratio
(Population for 65+ as a percent of population for 20-64)

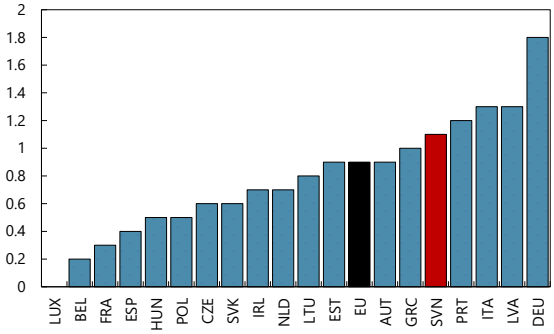


With the share of elderly (age 65+) and very elderly (80+) population growing, aging intensity is projected to rise significantly over the long term, one of the largest increases in the EU.

Share of Elderly Population (65+)
(Change in share between 2014 and 2024 in pps)



Share of Very Elderly Population (80+)
(Change in share between 2014 and 2024 in pps)



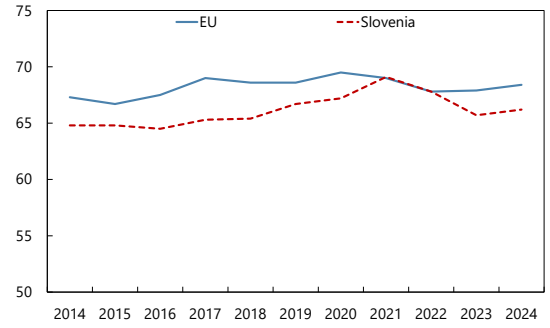
Sources: Eurostat and EC Aging Report 2024.

Figure 3. Improving Health Indicators

Perceived health is slowly improving for the broader population …

Perceived Health Condition (16+)

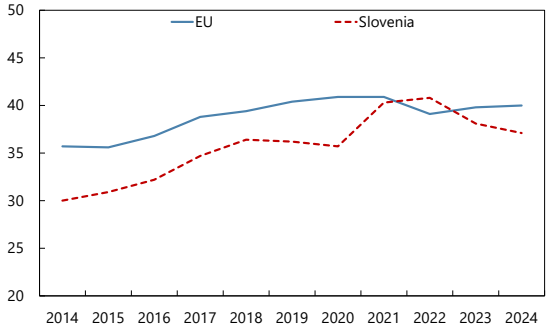
(Share of self-reported for age 16+ in good or very good condition in percent)



… and even more so for the elderly.

Perceived Health Condition (65+)

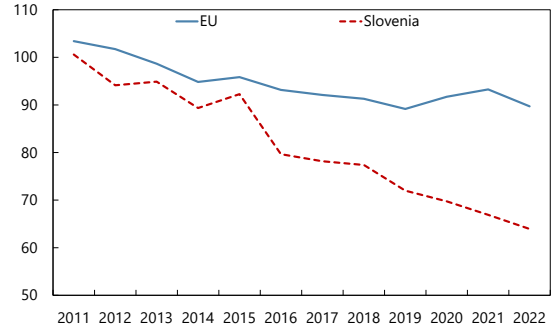
(Share of self-reported for age 65+ in very good or good condition in percent)



Mortality rates have been declining …

Mortality Rate: Treatable

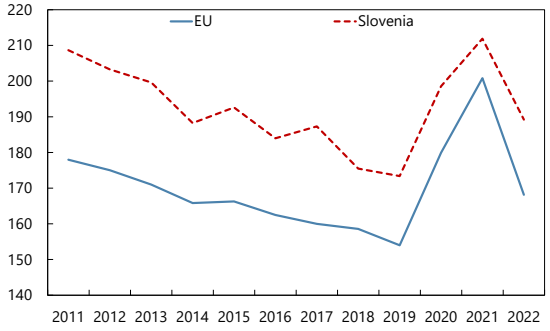
(Standardized death rate per 100,000 persons)



… with room for improving preventable cases.

Mortality Rate: Preventable

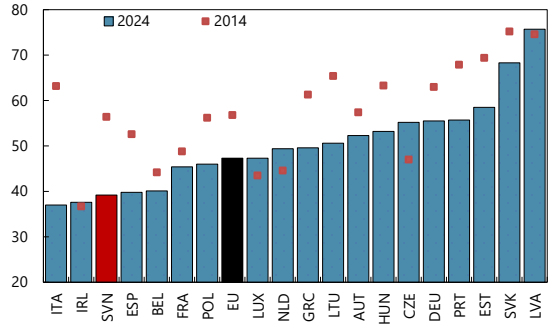
(Standardized death rate per 100,000 persons)



The level of disability among the elderly and very elderly has been declining…

Level of Disability for 65+

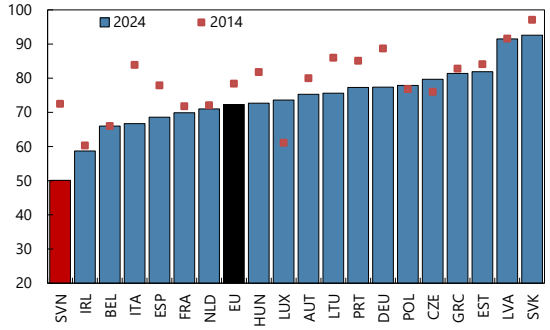
(Share of 65+ with some or severe activity limitation in percent)



… placing Slovenia below the EU average.

Level of Disability for 85+

(Share of 85+ with some or severe activity limitation in percent)

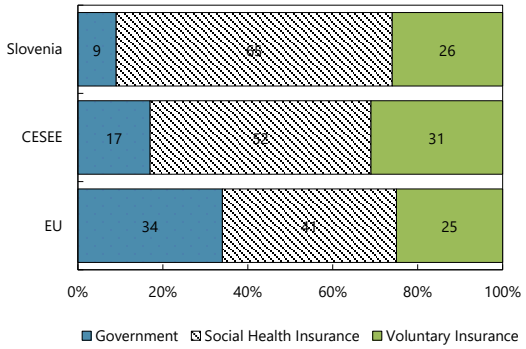


Source: Eurostat.

Figure 4. Narrow Health Care Financing

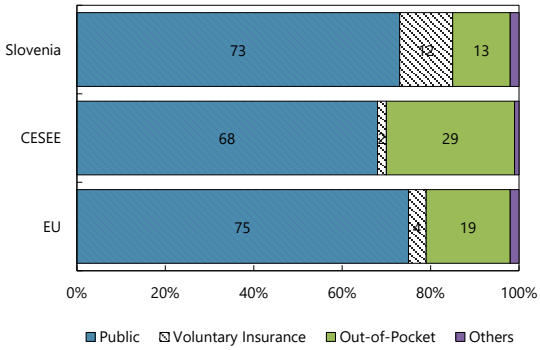
Financing of the health system is reliant on compulsory contributions.

Financing Schemes for Healthcare
(Percent of current health expenditure, 2023)



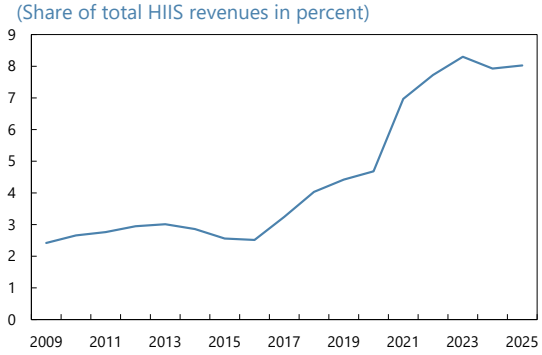
Sources of financing are narrow, with a relatively small share of OOP that is below the EU average.

Funding Sources for Healthcare
(Percent of current health expenditure, 2023)



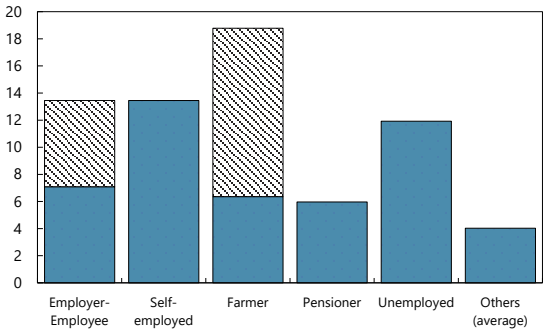
Financing from the government is growing strongly and can create fiscal risk.

Revenues Transfered from State and Local Budget
(Share of total HIIS revenues in percent)



Employee-employer contributions accounted for over 80 percent of total revenue in 2024.

Contributions Rates for Healthcare Insurance
(Percent)

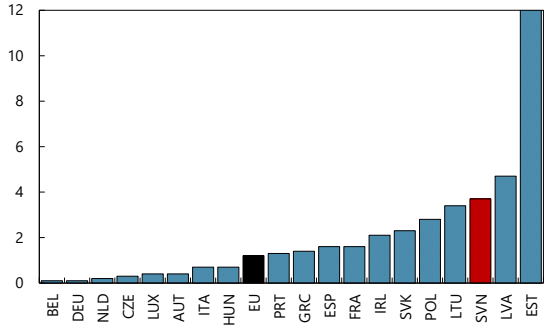


Source: WHO GHED Oct 2024, FAD HAT, HIIS Annual Reports and IMF staff estimates.

Figure 5. Additional Spending Pressures

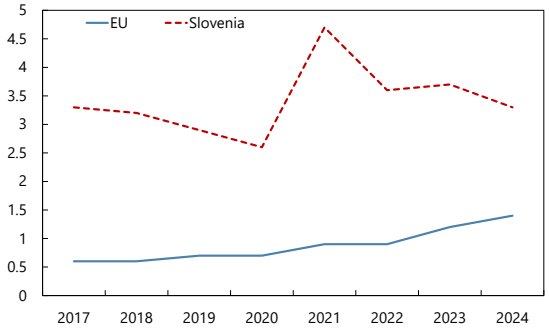
Waiting time in Slovenia is among the longest in the EU …

Unmet Medical Needs due to Waiting Time 2023
(Share of self-reported in percent)



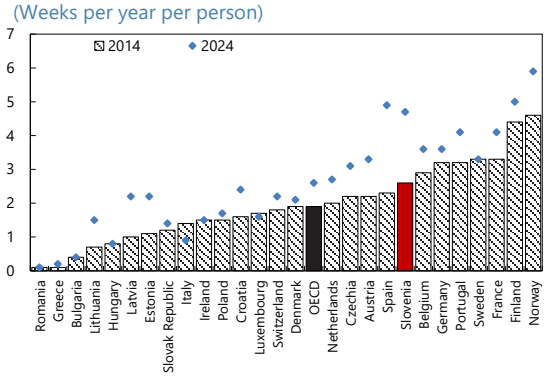
… indicating that the health systems are under severe strain, especially for elective surgeries.

Unmet Medical Needs due to Waiting Time
(Share of self-reported in percent)



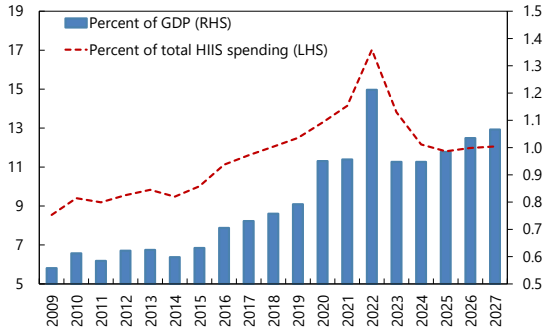
Longer duration of absence from work due to illness, with Slovenia recording among the largest increase.

Absence from Work due to Sickness
(Weeks per year per person)



There is a persistent increase in spending on sick leave under the generous benefits of the social health insurance.

Spending on Sick Leave Compensation
(Percent)



Sources: Eurostat, OECD, HIIS and IMF staff estimates.

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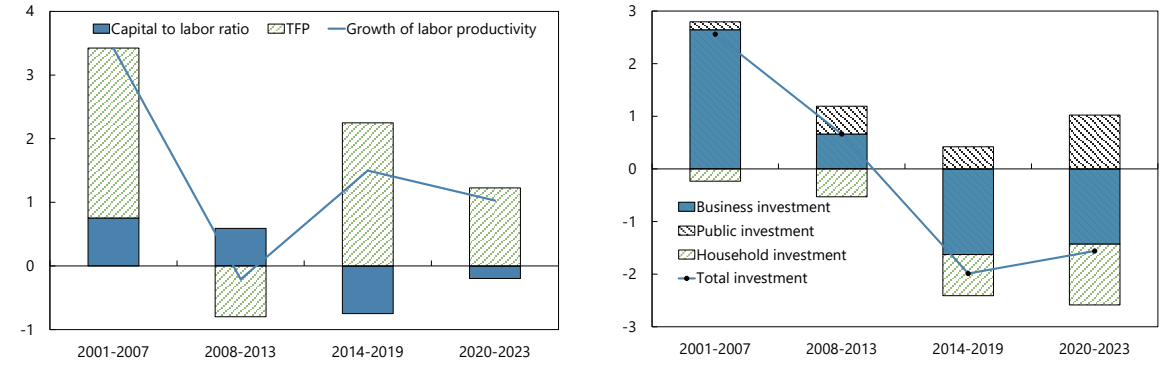
BOOSTING LABOR PRODUCTIVITY IN SLOVENIA: WHAT IS THE ROLE OF INTANGIBLE INVESTMENTS?

Slovenia's labor productivity growth has slowed since the late 2000s, weakening the country's prospects of catching up with more advanced EU members. In addition to the gap in business investment, the composition of investment is also important as intangible investments are increasingly driving productivity in knowledge-based economies. This paper examines the investment gap using the extended definition of intangible investments from the Corrado-Hulten-Sichel (2005) framework, and discusses options for closing the gaps relative to the EU average and EU innovation leaders, highlighting the need for expanding access to finance for intangible investments, strengthening the innovation ecosystem, and enhancing overall business environment.

A. Context

1. Slovenia's labor productivity growth has slowed since the early 2000s. During 2001–2007, labor productivity—measured as output per worker—increased by 3.4 percent annually, driven by capital deepening (growth in capital intensity, measured by the capital-to-labor ratio) and gains in total factor productivity (TFP) (Figure 1). Labor productivity declined during the Global Financial Crisis (GFC) and the ensuing banking crisis, even though capital intensity continued to increase. It recovered in 2014-2019, although with a lower growth rate due to declining capital intensity. Labor productivity growth slowed down in 2020-2023 as capital intensity continued to decline, and TFP weakened. The drop in capital intensity during 2014-23 in turn reflects a fixed investment gap of 1.7 percentage points of GDP compared to the EU average (Figures 1 and 5).

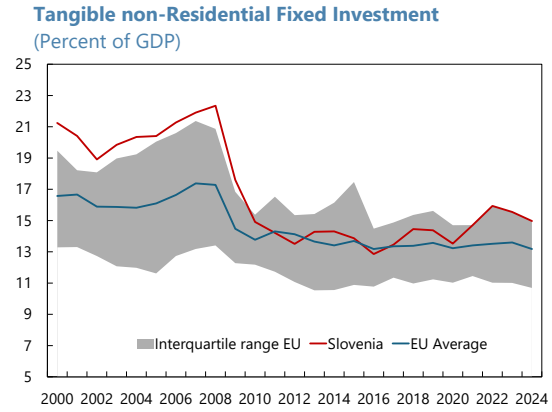
Figure 1. Labor Productivity and Investment

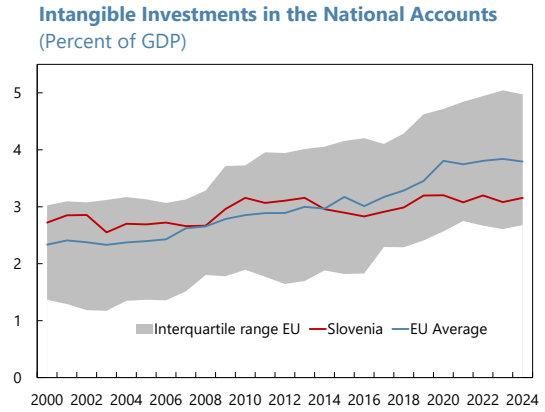


Sources: Eurostat and IMF staff estimates.

2. The shortfall in non-residential fixed investment was particularly pronounced in intangible assets. While investment in non-residential tangible assets (machinery, equipment, and others) in the past 10 years was on par with or even above the EU average, investment in intangible assets recorded in the national accounts (software, databases, and R&D) was lower (Figure 2).

Figure 2. Fixed Investment by Asset Type, 2000-2024





Sources: Eurostat and IMF staff estimates.

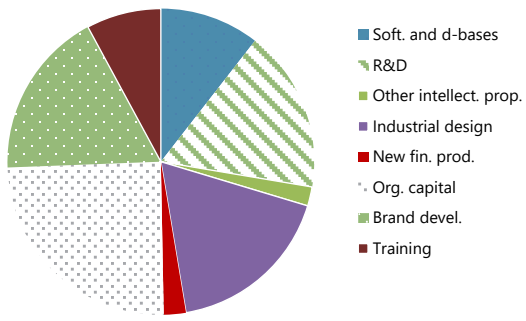
3. As the national accounts capture only part of intangible investment, extending its definition provides better insight into its role in knowledge-based economies. Corrado, Hulten, and Sichel (2005) proposed an extended definition comprising three broad areas—computerized information, innovative property, and economic competencies. Notably, this definition adds industrial design, development of new financial products, building organizational capital, brand development, and training to traditional variables included in the national accounts. The economic argument for including them into capital is that spending on these items represents "know how" that reduces current consumption with the intent of increasing future production. To illustrate the magnitudes, average intangible investments included in Slovenia's national accounts (computerized information, R&D and other intellectual property) in 2000-2024 constituted about 30 percent of total intangibles in the extended definition. Industrial design and development of new financial products contributed 20 percent, and economic competences (a sum of organizational capital, brand development

Intangible Capital: National Accounts vs Extended Definition in CHS (2005) Framework

	National accounts	CHS (2005)
I. Computerized information		
Software	√	√
Databases	√	√
II. Innovative property		
Research and development	√	√
Other intellectual property	√	√
Industrial design	X	√
Developing new fin. prod.	X	√
III. Economic Competencies		
Organizational capital	X	√
Brand development	X	√
Training	X	√

Sources: CHS (2005), and Bontandini et al (2021).

Structure of Intangible Investment, 2000-2024
(Percent)

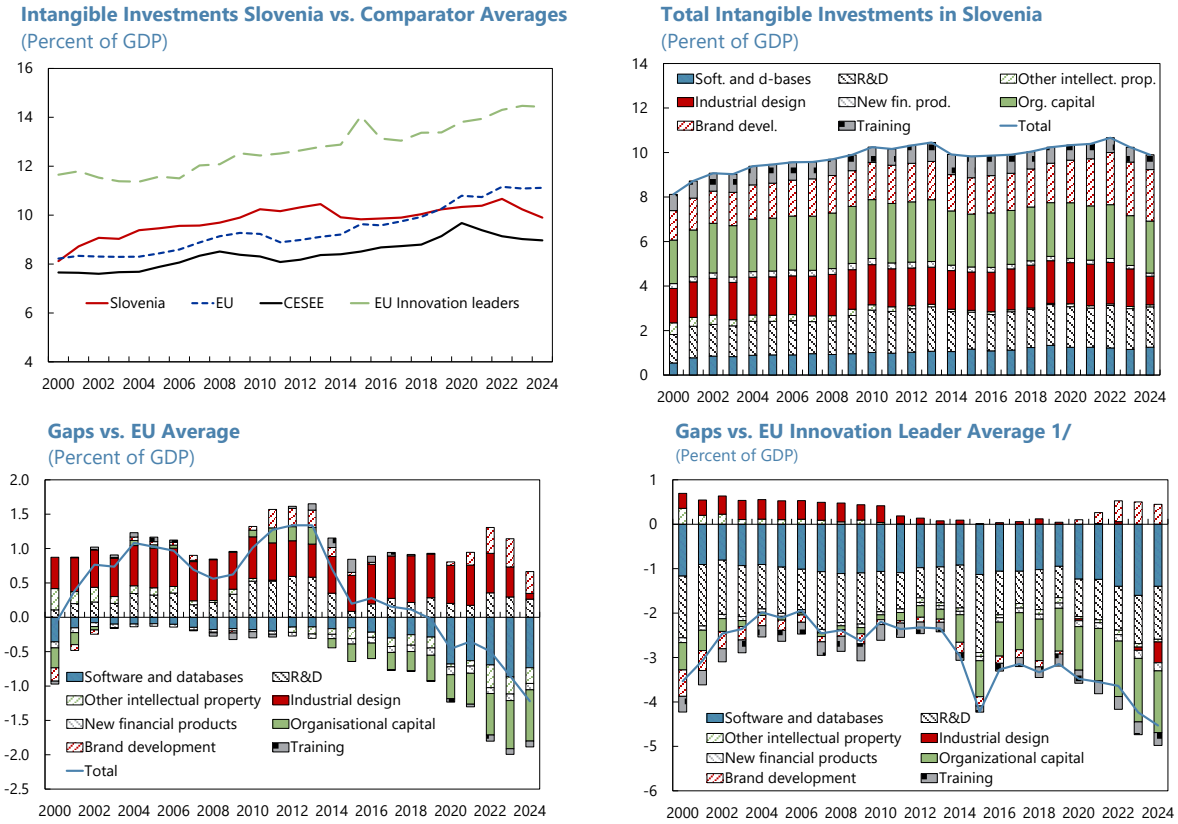


Sources: KLEMS and INTAN databases and IMF staff estimates.

and training) accounted for about half of all intangible investments.[1]

4. In the past 10 years, Slovenia's intangible investment under the extended definition, slowed compared to the EU average, and the gap relative to the EU innovation leaders widened. Slovenia's investment in intangibles had historically exceeded the EU average but declined toward the EU average around 2014-15 (Figure 3). Slovenia invests more in intangibles than the CESEE peers, but significantly less than EU innovation leaders (Denmark, Finland, Netherlands, and Sweden)[2]. The gap with EU innovation leaders widened to about 4.5 percent of GDP in 2024, reflecting largely by lower investment in software and databases, R&D, and organizational capital.

Figure 3. Intangible Investment in the CHS (2005) Framework, 2000-2024



1/ Average values for Denmark, Finland, Netherlands, and Sweden.

Sources:

(i) 2001-2021: EU KLEMS-INTANprod database.

(ii) 2022-24 intangible investment data included into the national accounts: Eurostat.

(iii) 2022-24 intangible investments not included into the national accounts: INTAN-Invest database, WIPO and Luiss Business School (2025). World Intangible Investment Highlights: June 2025 edition. Geneva and Rome: World Intellectual Property Organization and Luiss Business School.

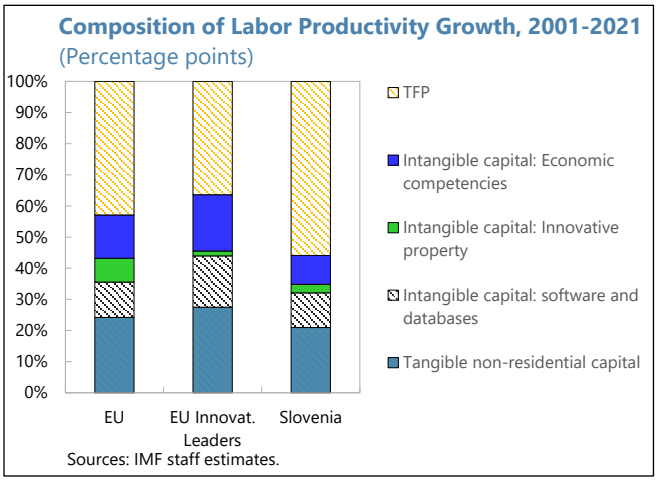
[1] EU KLEMS-INTANprod database, updated in 2025, provides comprehensive data on intangible investments and corresponding capital stocks through 2021. INTAN-Invest database extends intangible investments through 2024, but does not compile capital stocks.

[2] Innovation leaders as defined by the European Innovation Scoreboard (2025).

B. How Much Do Intangibles Contribute to Labor Productivity?

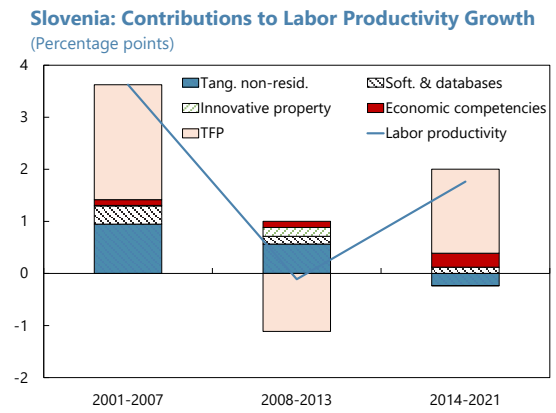
5. Intangible capital has emerged as a critical driver of labor productivity growth. Studies show that intangible capital deepening accounts for approximately 40-50 percent of productivity gains at both aggregate and sectoral levels in European economies. Using the EU KLEMS 2022 dataset covering 14 EU countries from 1995-2019, Roth and Mitra (2024) find that the productivity gap between the EU and United States is largely attributable to insufficient investment in non-R&D intangibles, particularly software, training, and organizational capital, which are crucial drivers of productivity growth in the service sector. Corrado et al. (2022) show that intangible investments in knowledge-based capital produce significant productivity spillovers through mechanisms beyond traditional R&D channels, with complementarities between ICT and intangible capital generating particularly strong effects. The literature reveals sectoral heterogeneities: manufacturing benefits primarily from R&D investments, while market services derive greater productivity gains from organizational capital and software investments. Furthermore, Corrado, Haskel, and Jona-Lasinio (2017) demonstrate that non-R&D intangible capital exhibits higher output elasticities than conventional factor shares, suggesting substantial knowledge spillovers that enhance aggregate productivity. The experience of advanced economies underscores the importance of intangibles. For instance, the UK's post-2010 productivity slowdown was found to be largely driven by reduced investment in intangible capital following the GFC, which stifled innovation and TFP growth.[3]

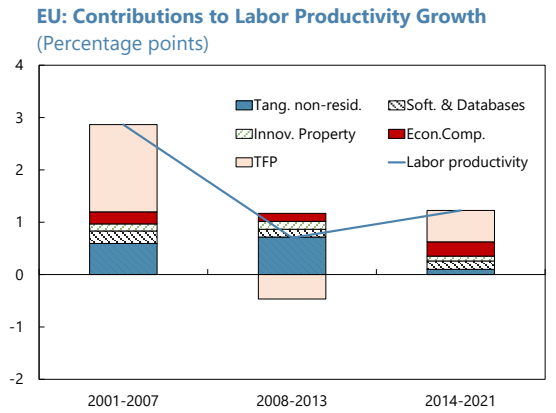
6. Updated growth contributions calculated using EU-KLEMS and elasticities obtained from panel regressions (Box 1) suggest that intangible capital remains a significant driver of labor productivity growth. During 2001-2021, the share of intangibles amounted to about one-third of overall productivity growth in the EU, higher than one-fourth contributed by the non-residential tangible investment. Averages for EU innovation leaders are slightly higher in both intangible investments and non-residential tangible investments. In Slovenia, intangible investments accounted for about 20 percent of labor productivity growth, and tangible investment accounted for about 21 percent.



[3] See 2025 United Kingdom Selected Issues Paper "Bridging the Gap: Understanding the UK-US Productivity Decoupling".

Figure 4. Factors of Labor Productivity Growth, 2001-2021



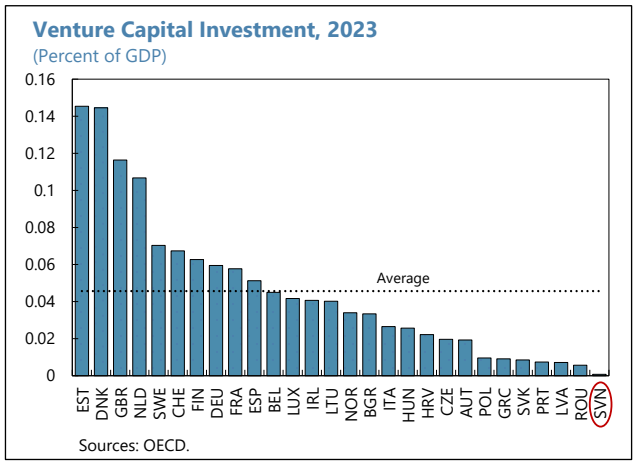


Sources: EU-KLEMS database and IMF staff estimates.

C. Supporting Intangible Investments: Challenges and Policy Options

7. To boost labor productivity growth, Slovenia needs to invest more in intangibles. The gap analysis (Section A) shows that, to close the gap with the EU average, investments in software, databases, and organizational capital should be increased. To close the gap with innovation leaders, an across-the-board increase in investment would be needed. This requires improving finance access for intangibles, strengthening the innovation and entrepreneurship ecosystem, investing in skills and human capital, and removing barriers to investment overall.

8. Lack of venture capital (VC) and fragmented entrepreneurship and innovation systems impede intangible investments in Slovenia. As intangible investments often lack collateral, traditional banking systems are not well suited for financing them. Yet, the financial system in Slovenia, like those in many other EU members, is bank-centric and the European capital markets are shallow and nationally segmented. Moreover, venture capital is virtually non-existent in Slovenia, although the national development bank (SID Bank)[4] and the Slovenian Enterprise



[4] SID Bank offers seed capital and convertible loans to support early-stage development, product commercialization, and scaling up of technology-driven businesses. In 2017, the SID Bank, in a partnership with the European Investment Bank, established the Slovenian Capital Growth Investment Program (SEGIP), which was expanded to 0.3 percent of GDP in 2021-2022 and is supporting research institutes and universities through its Technology Transfer Fund, SMEs in start-up and growth phases through Venture Capital Fund, and SMEs and mid-cap companies through the Succession Fund.

Fund (SEF)[5] are filling a part of the gap, supporting innovative investments by providing concessional loans, guarantees, and equity financing. As a result, firms often have to rely on their own resources to finance these investments. The ability to finance intangible investments is additionally constrained by Slovenia's high proportion of small firms, including SMEs and micro-enterprises, which are more financially constrained than larger firms. Finally, the entrepreneurship and innovation ecosystem is fragmented: despite a large number of support organizations, their roles and relationships across them are not clear and they have limited intellectual property competences (National Intellectual Property Strategy 2030).

9. The Slovenian authorities have been taking measures to support innovation and intangible investments. Adopted in 2022, the National Research and Innovation Strategy 2030 set out the objective to increase investment in research and innovation to 3½ percent of GDP by 2030 (of which 1¼ percent of GDP in the public sector) and called for better commercialization of research. In 2023, the Public Agency for Scientific Research and Innovation (ARIS) was set up to facilitate the transfer of academic knowledge into the economy and society. In 2024, the authorities adopted the National Intellectual Property Strategy 2030, which aims to enhance intellectual property valuation capacity and develop intellectual property-backed financing.[6] They are also preparing a new Startup Strategy that will: (i) spell out measures to strengthen the support environment for start-ups and scale-ups, (ii) develop the VC market with public incentives to strengthen private and pension fund investments in VC, (iii) introduce an internationally comparable framework for implementing employee stock options and profit-sharing, (iv) introduce a start-up visa to attract global tech talent, and (v) develop a new simplified legal form tailored for start-ups. The authorities are planning additional grants and financial instruments of about 0.9 percent of GDP, primarily financed by European cohesion funds, for supporting RDI, entrepreneurship and investments, circular economy, tourism and space.[7]

10. Actively supporting EU-level initiatives aimed at deepening EU capital markets and strengthening its domestic innovation financing infrastructure will help Slovenia expand its access to innovation finance. Through a larger pool of capital, a stronger European Capital Markets Union (CMU) can offer young, innovative firms broadened options of funding (e.g., venture capital) and exit strategies (e.g., stock market or private equity). Slovenia can expand the pool of capital by further developing of its Pillar 2 pension scheme and implementing the new law on individual savings accounts that aims to foster retail investment. To help channel savings to early-

[5] Since 2006, the SEF has been focused on supporting young innovative companies through start-up grants. SEF is currently involved in Central Europe Fund of Funds (CEFoF), that was designed by the EIF in close cooperation with the authorities from Slovenia, Austria, Czech Republic, Slovakia, and Hungary. It aims to increase venture capital investments in SMEs in the Central European region. The CEFoF has €87 million, for which it leverages private investments, increasing total available volume close to €700 million, implying a multiplier of 8.6 relative to commitments under the CEFoF.

[6] Under this strategy, Slovenia is developing a system for valuing patents and other intangibles and is launching a pilot credit line (through the state development bank, SID) allowing SMEs to use intellectual property rights as loan collateral.

[7] The government is planning to set up two loan funds for investments in the amount of 0.7 of GDP each to support investments and anti-crisis support, which may also indirectly support investments into intangibles.

stage, risky assets, regulations should not unduly restrict institutional investors from investing in these projects, while familiarity with the venture capital asset class can be improved through public initiatives (e.g., Tesi in Finland) (Arnold and others, 2025). Finally, strengthening Slovenia's domestic innovation financing infrastructure—such as establishing an efficient, cost-effective mix of instruments, improving SME access to EU programs like InvestEU, and improving financial literacy—will prepare the country to benefit more from a stronger CMU and address intangible investment gap. In light of the ongoing initiatives to support innovation and productivity, it is important to ensure that industrial policy be focused on addressing specific market failures and not add inefficiency or lean against structural transformation. It should also be targeted, time-bound, consistent with WTO rules, and coordinated at the EU level.

11. Apart from financing, it is also necessary to enhance the business environment and skills availability. Heavy regulatory and administrative burdens and slow procedures (e.g., lengthy permitting, complex regulations) increase the costs of operating business and hinder the dynamism of the business sector (OECD 2022). It is also important to improve skills availability, which is critical for improving investment in general. To improve skills availability, Slovenia could expand vocational and tertiary education programs in STEM fields, strengthen lifelong learning and reskilling initiatives, and promote closer collaboration between industry and educational institutions to align curricula with evolving labor market needs. Additionally, streamlining the recognition of foreign qualifications and facilitating the integration of skilled migrants could help address immediate shortages.

12. Closing Slovenia's productivity gap with EU innovation leaders requires strengthening connections within the innovation ecosystem—especially between firms and academia, and between MNEs and SMEs. While Slovenia performs above the EU average in public-private co-publications, its science-industry collaboration remains fragmented, with limited long-term institutional partnerships. Strengthening these linkages would accelerate knowledge diffusion, technology adoption and innovation across the economy. Policy options include expanding collaborative R&D funding, developing industrial PhD programs, and developing innovation hubs and clusters that embed universities, MNEs and SMEs in shared research agendas. To provide an EU example, the Tyndall National Institute in Ireland is a research center bringing together leading global companies and Irish SMEs in semiconductors technology and related areas, thus promoting startups and facilitating the creation of high-value-added jobs.[8] Drawing on this model, Slovenia could explore developing institutional mechanisms that leverage its existing multinational presence in sectors such as automotive (Revoz/Renault), pharmaceuticals (Lek/Sandoz), and manufacturing to catalyze domestic innovation and entrepreneurship. By institutionalizing cooperation across the ecosystem, Slovenia can unlock the full potential of its knowledge base and raise its innovation capacity to the level of EU's leaders.

[8] See IMF Country Report No. 2025/128 (2025 Article IV Consultation with Ireland).

Box 1. Estimating the Link Between Intangible Investments and Productivity

What does the latest available update of the EU-KLEMS database suggest about the role of intangible investments for labor productivity? To answer this question, we calculate contributions to labor productivity growth of distinct types of investments based on estimated elasticities. The estimation, broadly following Felix (2022), is motivated by the Cobb-Douglas production function with multiple types of capital (Equation 1), converted into the intensive form by dividing both sides by labor (Lt), which yields labor productivity (Equation 2). Taking logs (Equation 3) and differencing gives rise to a specification that can be used for estimating elasticities, which can in turn be used for calculating contributions to growth of labor productivity.

$$Y_t = A_t K_{1t}^{\alpha 1} K_{2t}^{\alpha 2} \dots K_{Nt}^{\alpha N} L_t^{1-\sum_i^N \alpha_i}, \quad (1)$$

$$y_t = A_t k_{1t}^{\alpha 1} k_{2t}^{\alpha 2} \dots k_{Nt}^{\alpha N} \quad (2)$$

$$\ln(y_t) = \ln(A_t) + \alpha_1 \ln(k_{1t}) + \alpha_2 \ln(k_{2t}) + \cdots + \alpha_N \ln(k_{Nt}) \quad (3)$$

Table 1 summarizes several panel specifications that were estimated using a differenced equation (3) on EU-KLEMS dataset. The dataset includes EU countries, UK, and the US and contains data from 1995 to 2021, although many countries have data only from 2001. The first specification divides total capital stock into tangible non-residential part and intangible part. The second specification separates intangible capital into three major parts in line with the CHS (2005) framework (computerized information, innovative property, and economic competencies). The third specification breaks down economic competencies into organizational capital, brand development, and training. All regressions include two control variables: the differenced output gap is included to control for fluctuations in output resulting from business cycle, and a distance to the leader in per capita income captures the convergence effect. All specifications are estimated using Arellano-Bond dynamic estimation procedure to control for possible endogeneity. All coefficients have expected signs and nearly all of them are statistically significant at 1 percent level. Specification (1) suggests that increasing intangible capital by one percent would contribute about 0.14 percentage points to productivity growth. It is interesting to note that training has a large elasticity, suggesting that improving training expenditure by one percent would contribute 0.12 percentage points to productivity growth.

Box 1. Estimating the Link Between Intangible Investments and Productivity (Concluded)

Table 1. Panel Regression: Labor Productivity and Capital Stock, 1995-2021

Dependent variable: Growth rate of labor productivity per worker	(1)	(2)	(3)
Tangible capital, % change	0.300	0.279	0.272
	(0.023)***	(0.023)***	(0.023)
Intangible capital, % change	0.138	…	…
	(0.015)***		
Software and databases, % change	…	0.028	0.029
		(0.006)***	(0.005)***
Innovative property, % change	…	0.058	0.054
		(0.012)***	(0.012)***
Economic competencies, % change	…	0.094	…
		(0.014)***	
Organizational capital, % change	…	…	0.029
			(0.01)**
Brand, % change	…	…	0.013
			(0.009)
Training, % change	…	…	0.117
			(0.014)***
Lagged labor productivity growth	-0.106	-0.119	-0.127
	(0.020)***	(0.020)***	(0.019)***
Output gap (differenced)	0.862	0.856	0.858
	(0.020)***	(0.020)***	(0.02)***
Distance to per capita income leader	0.011	0.011	0.010
	(0.001)***	(0.001)***	(0.001)***
Constant	-1.625	-1.746	-1.469
	(0.235)***	(0.235)***	(0.225)***
Number of observations	615	592	615

Notes: Standard errors are reported in parentheses and stars indicate p-values (* p<0.1; ** p<0.05; *** p<0.01).

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