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FISCAL SUSTAINABILITY REPORT

April 2025

Fiscal Sustainability Report 2025

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF BOXES

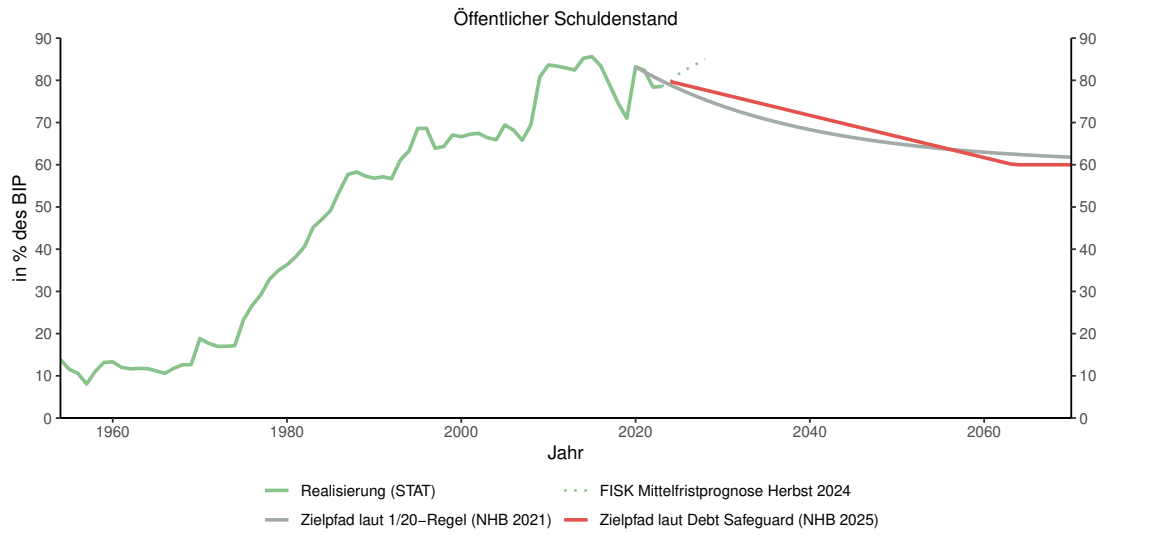
ZUSAMMENFASSUNG DER HAUPTERGEBNISSE

Der vorliegende Bericht zur fiskalischen Nachhaltigkeit des Fiskalrates („Nachhaltigkeitsbericht“, kurz: NHB 2025) hat zum Ziel, die langfristige Stabilität der öffentlichen Finanzen Österreichs zu untersuchen. Erstmals wurde die fiskalische Bedeutung diverser Klimaaspekte mitberücksichtigt. Die Projektionen, die bis ins Jahr 2070 reichen, wurden unter einer No-policy-change-Annahme erstellt. Die Maßnahmen des neuen Regierungsprogramms konnten in der Basisvariante aufgrund des Fristlaufs noch keine Berücksichtigung finden. Allerdings wurden die bei Umsetzung des geplanten Konsolidierungsvolumens zu erwartenden Auswirkungen auf die langfristige Fiskalposition Österreichs abgeschätzt (siehe Box, S. 11).

Notwendiger Anpassungsbedarf steigt bis 2070 von aktuell 2,5% auf 7,0% des BIP an

Als Hauptindikator wird das Maß der „fiskalischen Lücke“ herangezogen, das den jährlichen Anpassungsbedarf des Primärsaldos ausweist, der notwendig ist, um den Pfad der Schuldenquote langfristig im Einklang mit den Minimalanforderungen der Europäischen Fiskalregeln bezüglich der Staatsverschuldung zu halten. Das neue Regelwerk sieht bis zum Erreichen einer Schuldenquote von 60%[1] eine Mindestreduktion der Schuldenquote um 0,5 Prozentpunkte pro Jahr vor („Debt Safeguard“) (Grafik 1).[2]

Grafik 1: Unterstellter Zielpfad für die Schuldenquote



Anmerkung: Die 1/20-Regel wurde mit der Reform des Stabilitäts- und Wachstumspakts im April 2024 effektiv durch den Debt Safeguard (Reduktion der Schuldenquote um 0,5% des BIP p.a.) ersetzt.
Quelle: Statistik Austria und eigene Berechnungen.

Die fiskalische Lücke quantifiziert den jährlichen Anpassungsbedarf – im Einklang mit vergleichbaren Langfristanalysen (wie dem Ageing Report der Europäischen Kommission) – ohne die makroökonomischen Rückkopplungseffekte der dafür notwendigen Konsolidierung.[3] Das bedeutet, dass die zur Schließung der fiskalischen Lücke notwendige effektive Konsolidierungsanstrengung die im Bericht ausgewie-

1 Aus heutiger Sicht muss Österreich die Rückführung der Schuldenquote auf 60% daher spätestens im Jahr 2064 erreichen.

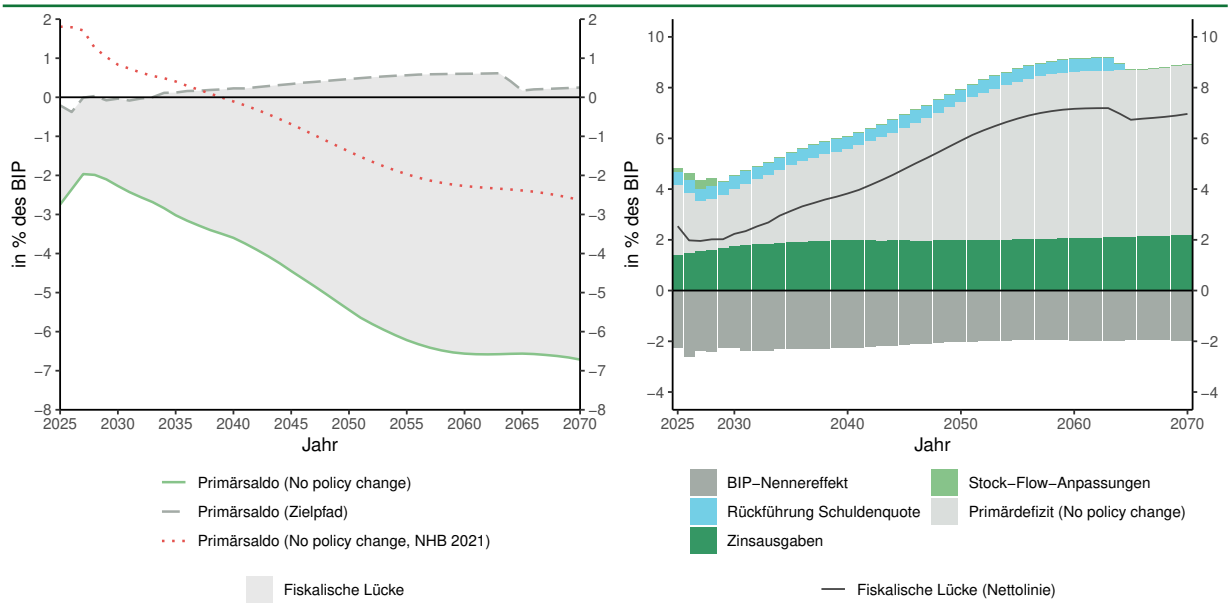
2 Dabei ist zu beachten, dass in der kurzen und mittleren Frist Abweichungen von der linearen Rückführung der Schuldenquote aus folgenden Gründen möglich sind: Erstens, die Rückführung um 0,5 Prozentpunkte gilt im Durchschnitt über den gewählten Anpassungszeitraum von vier oder sieben Jahren. Zweitens, die Zielvorgabe und -einhaltung wird in eine Maximalwachstumsvorgabe des Nettoprimärausgabenaggregates umgerechnet, wodurch sich ex-post Unterschiede zur Saldenbetrachtung ergeben können. Drittens wird im Falle eines Verfahrens bei übermäßigem Defizit (ÜD-Verfahren) der Debt Safeguard vorübergehend ausgesetzt.

3 Technisch erfolgt der Lückenschluss durch ein virtuelles Nullmultiplikatorinstrument, das den Anpassungsbedarf darstellt.

sene Lücke übersteigt (siehe Box, S. 11). Ausgehend von einer Lücke von 2,5% des BIP im Jahr 2025 wird eine leichte Entspannung erwartet, bevor sich die Lücke ab dem Beginn der 2030er Jahre zunehmend öffnet und im Jahr 2040 3,8% des BIP erreicht. Anfang der 2060er Jahre ist die fiskalische Lücke mit 7,2% des BIP am größten, bevor sie bis zum Ende des Projektionshorizonts auf 7,0% des BIP leicht zurückgeht. Die Umsetzung der im Regierungsprogramm der neuen Bundesregierung vorgesehenen Konsolidierungsmaßnahmen für 2025 und 2026 würde die Lücke im Jahr 2070 um 1,6% des BIP auf 5,3% des BIP reduzieren (siehe Box, S. 11).

Die Ermittlung des Anpassungsbedarfs eines bestimmten Jahres basiert auf der Annahme, dass die Anpassungsanforderungen der jeweiligen Vorjahre erfüllt wurden. Ein Abweichen vom in Grafik 1 dargestellten Zielpfad der Schuldenquote durch ein Aufschieben der Konsolidierung würde den Anpassungsbedarf in künftigen Jahren aufgrund zusätzlich aufgelaufener Zinszahlungen entsprechend erhöhen. Der im Bericht gewählte Fokus auf die Quantifizierung des laufenden Anpassungsbedarfs leitet sich aus der Perspektive der Einhaltung der europäischen Fiskalregeln ab und ist methodisch mit den Nachhaltigkeitsindikatoren der Europäischen Kommission (S1- und S2-Indikator) verwandt. Im Gegensatz dazu stehen Langfristanalysen wie jene des Bundesministeriums für Finanzen (BMF), deren Fokus auf der Quantifizierung der Folgen der Untätigkeit liegt. Der Hauptindikator in diesen Analysen ist die langfristige Entwicklung der Schuldenquote, wenn eine laufende Korrektur ausbleibt. Der Ansatz des BMF folgt damit einer strikteren Auslegung der No-policy-change-Annahme. Im Gegensatz zur fiskalischen Lücke ist diese Form der Analyse jedoch deutlich sensitiver gegenüber Zinssatzannahmen und dem gewählten Prognosehorizont und zudem schwieriger in politische Handlungsanweisungen zu übersetzen.

Grafik 2: Entwicklung der fiskalischen Lücke über den Prognosehorizont



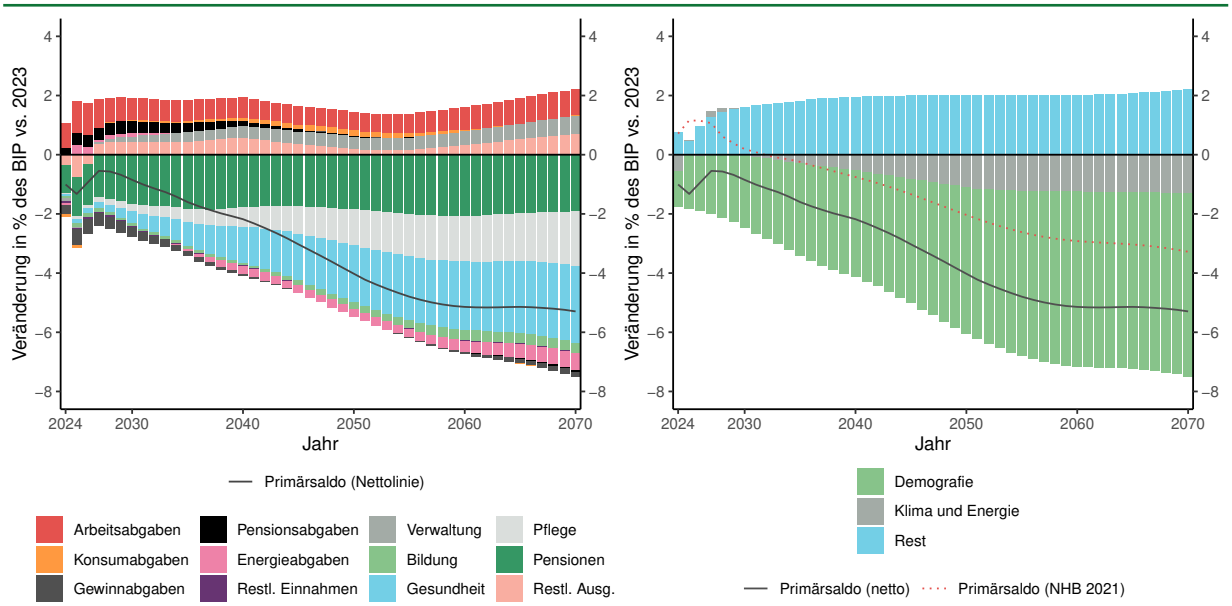
Quelle: FISK OLG Modell.

Demografische Faktoren hauptverantwortlich für langfristige Verschlechterung des Primärsaldos

Die Primärsaldoquote verschlechtert sich gegenüber dem Basisjahr 2023 bereits in der kurzen Frist deutlich (2024 um 1,0% des BIP und 2025 um weitere 0,3% des BIP). Die Hauptursachen dieser Verschlechterung liegen in der schwachen konjunkturellen Entwicklung dieser beiden Jahre sowie dem, aufgrund der verzögerten Auswirkung der Hochinflationsphase, starken nominellen Anstieg vieler inflationsindexierter Ausgabenkategorien (z. B. Pensionsausgaben). Nach einer leichten Verbesserung der Primärsaldoquote in den Folgejahren wird mit einer laufenden Verschlechterung bis zum Ende des Projektionshorizonts

2070 auf -6,7% des BIP gerechnet. Dies bedeutet eine Verschlechterung gegenüber 2023 um 5,3 Prozentpunkte. Grafik 3 zeigt, dass diese Verschlechterung weitgehend den demografieabhängigen Ausgabenkategorien (+6,2% des BIP bis 2070) und zu einem kleineren Teil den klimabedingten Budgetbelastungen (+1,3% des BIP bis 2070) zuzuschreiben ist. Die Entwicklung der sonstigen Budgetkategorien (u. a. Abgaben auf Arbeit und Verwaltungsausgaben) dämpft den Anstieg des Primärdefizits spürbar (-2,2% des BIP bis 2070).

Grafik 3: Entwicklung des Primärsaldos bis 2070 gegenüber 2023



Quelle: FISK OLG Modell.

Der Anstieg der demografieabhängigen Ausgaben von 6,2% des BIP bis 2070 setzt sich wie folgt zusammen: Gesundheit: +2,6% des BIP, Pensionen: +1,9% des BIP, Pflege: +1,8% des BIP, Bildung: +0,3% des BIP und Familienleistungen: -0,5% des BIP. Wie die linke Abbildung von Grafik 3 veranschaulicht, ist in der kurzen und mittleren Frist der Anstieg bei den Pensionsausgaben – gemessen in Prozent des BIP – am stärksten. Ausgehend von einem Wert von 14,5% des BIP im Jahr 2023 ist bereits 2025 mit einem Anstieg um 1,3 Prozentpunkte auf 15,8% des BIP zu rechnen. Der weitere langfristige Anstieg bis zum Ende des Projektionshorizonts fällt mit zusätzlichen 0,6 Prozentpunkten auf 16,4% trotz des großen demografischen Drucks auf diesen Ausgabenbereich[4] vergleichsweise moderat aus. Dies ist in erster Linie auf die in den 2000er Jahren durchgeführten Pensionsreformen zurückzuführen, die eine Berücksichtigung des gesamten Erwerbslebens für die Ansprüche vorsehen und damit die effektiven Ersatzraten laufend verringern. Dass der prognostizierte Pfad der Pensionsausgaben in Prozent des BIP deutlich über früheren Projektionen zu liegen kommt, ist weniger auf Revisionen der demografischen Prognosen zurückzuführen, sondern zu einem großen Teil auf die schwache wirtschaftliche Entwicklung, die aufgrund des niedrigeren Nenners die Quote steigen lässt.[5]

4 Bis 2070 ist mit 890.000 zusätzlichen Alterspensionsempfängern zu rechnen, während die Anzahl der Beschäftigten im gleichen Zeitraum laut Projektion nur um 210.000 zunimmt.

5 Hätte sich das reale BIP seit 2021 entwickelt, wie im letzten Nachhaltigkeitsbericht unterstellt, läge die Prognose der Pensionsausgabenquote für 2025 bei 14,9% des BIP statt bei 15,8%. Wäre zusätzlich der BIP-Deflator im gleichen Ausmaß gestiegen wie der Verbraucherpreisindex (VPI), läge die Prognose bei 14,4% des BIP. Die Sensitivität der Ausgabenquote bezüglich des realen BIP-Wachstums ist bei Pensionen – im Gegensatz zu anderen Ausgaben, wie der Nachfrage nach Gesundheitsleistungen, die annahmegemäß direkt auf Einkommensänderungen und damit auf das BIP-Wachstum reagiert – besonders stark ausgeprägt. Eine schwächere Entwicklung der Produktivität und der Reallöhne übersetzt sich nur sehr langsam, über geringere Ansprüche der Neuantritte, in eine schwächere Dynamik der Pensionsausgaben.

Im Gegensatz zu den Ausgaben für Pensionen steigen jene für Gesundheit und Pflege kurz- und mittelfristig schwächer, dafür in der langen Frist deutlich stärker an. Für Gesundheitsausgaben wird, ausgehend von 7,7% des BIP im Jahr 2023, ein Anstieg auf 8,9% im Jahr 2040 und auf 10,3% im Jahr 2070 erwartet. Ausgehend von einem niedrigeren Niveau fällt der relative Anstieg der Pflegeausgaben noch deutlicher aus. Nach 1,3% des BIP im Jahr 2023 wird ein Anstieg auf 1,9% im Jahr 2040 und auf 3,1% im Jahr 2070 prognostiziert. Ausschlaggebend für den Anstieg sind nicht nur demografische Faktoren, wie die Tatsache, dass die Stückkosten für Gesundheit und Pflege im Alter zunehmen, sondern auch, dass die Stückkosten für Sachleistungen in diesen Bereichen in der Vergangenheit deutlich stärker gewachsen sind, als nur durch Inflation und Arbeitsproduktivität erklärbar. Dieser historische Trend wird in die Zukunft fortgeschrieben, ohne zusätzliche Kostendämpfungsmaßnahmen zu unterstellen. Als wahrscheinliche Ursachen sind die Baumolsche Kostenkrankenheit[6] sowie die tendenziell kostenerhöhenden technologischen Fortschritte im medizinischen Bereich zu nennen. Gedämpft wird die Entwicklung durch die inflationsindexierten Transfers, wie das Pflegegeld, deren Stückkosten nicht mit den Produktivitätssteigerungen mitwachsen. Diese Transfers verlieren daher innerhalb der Ausgaben für Gesundheit und Pflege zunehmend an Gewicht. Ähnliches gilt für die Familienleistungen aus Transfers, für die ein langfristiger Rückgang von 1,5% des BIP auf 1,1% des BIP im Jahr 2070 erwartet wird. Im Fall der Ausgaben für Bildung wird ein leichter langfristiger Zuwachs um 0,3 Prozentpunkte ausgehend von 4,8% auf 5,1% des BIP erwartet. Dies erklärt sich einerseits durch eine relative Zunahme der Anzahl an jungen Personen trotz Alterung der Gesellschaft. Jeder Person im Alter zwischen 20 und 64 Jahren stehen aktuell 0,32 Personen unter 20 Jahren gegenüber. Dieses Verhältnis steigt bis 2070 laut Bevölkerungsprognose von Statistik Austria auf 0,36. Zweitens erhöhen sich die durchschnittlichen Bildungskosten durch eine zunehmende Verschiebung von Primär- und Sekundär- zu tertiärer Ausbildung.

Der vorliegende Nachhaltigkeitsbericht 2025 unterstreicht damit die Resultate des Ageing Reports der Europäischen Kommission (EK) und der Langfristprognose des Bundesministeriums für Finanzen (BMF), die ebenfalls einen deutlichen Anstieg der demografieabhängigen Ausgaben in der langen Frist vorhersagen. Die errechneten Ausgabenerhöhungen des NHB 2025 liegen aber deutlich über den Werten des BMF und der EK (Tabelle 1). Im Fall der BMF-Prognose ist dies, vor allem aufgrund der bereits 2022 erfolgten Publikation, auf die deutlich revidierten demografischen und makroökonomischen Annahmen zurückzuführen. Der vergleichsweise rezent publizierte Ageing Report 2024 hebt sich durch seine vergleichsweise optimistische Prognose, speziell der Pensions- und Bildungsausgaben, deutlich von den nationalen Langfristanalysen (inklusive des Langfristgutachtens der Alterssicherungskommission 2024) ab.

Klimabezogene Budgetposten tragen 1,3% des BIP zur langfristigen Verschlechterung des Primärsaldos bei

Im vorliegenden Bericht werden die budgetären Effekte des Klimawandels sowie der nationalen bzw. internationalen Klima- und Energiepolitik (kurz „klimabedingte Budgeteffekte“) erstmals berücksichtigt. Diese klimabedingten Budgeteffekte bestimmen sich im Wesentlichen aus vier Faktoren: den direkten Kosten von Fördermaßnahmen im Klimaschutzbereich, den Mehreinnahmen aus der CO_2-Bepreisung abzüglich des Wegfalls eines signifikanten Teils an energiebezogenem Steueraufkommen, den indirekten Budgetkosten der – aus der Verteuerung von Energie (Grundpreis inklusive Besteuerung) resultierenden – schwächeren Wirtschaftsleistung und den Kosten aus der Nichterfüllung der europäischen Emissionsreduktionsvorgaben.

[6] Aufgrund unterschiedlicher sektoraler Produktivitätsentwicklung führt der allgemeine Lohnanstieg in Sektoren, in denen Produktivitätssteigerungen aufgrund des hohen Maßes an persönlichen Dienstleistungen schwieriger sind, zu einer relativen Verteuerung der Stückkosten in diesem Sektor.

Das gegenwärtige Ausmaß der Klimaförderungen beträgt 0,7% des BIP. Diese Förderquote entwickelt sich über den Projektionshorizont relativ konstant. Basierend auf der No-policy-change-Annahme wurden in der Basisvariante nur Maßnahmen berücksichtigt, die bereits beschlossen wurden, nicht jedoch geplante oder potenziell notwendige Maßnahmen, um die gesetzten Klimaziele zu erreichen. Die Basisvariante des vorliegenden Berichts orientiert sich damit an dem WEM-Szenario („with existing measures") des Nationalen Energie- und Klimaplans (NEKP), wobei mittlerweile bestehende sowie beschlossene Maßnahmen aus dem WAM-Szenario hinzugerechnet wurden. Dies betrifft im Speziellen die nationale CO_2-Bepreisung sowie deren Ablöse durch das Europäische Emissionshandelsystem 2 (ETS2) im Jahr 2027, die im WEM-Szenario noch nicht enthalten ist. Mit einer Reduktion der Emissionen von 68 Megatonnen (Mt) in CO_2-Äquivalenten im Jahr 2023 auf 47 Mt im Jahr 2050 ist die Basisvariante damit leicht optimistischer als das WEM-Szenario (2050: 53 Mt) und deutlich pessimistischer als das WAM-Szenario (2050: 25 Mt). Damit wird das EU-weite Ziel der Klimaneutralität bis 2050 für Österreich deutlich verfehlt und Zertifikatszukäufe im Rahmen der Lastenteilungsverordnung („Effort Sharing Regulation", ESR) werden nötig. Aufgrund der Unterschreitungen des Zielpfads der letzten Jahre ergeben sich – aus heutiger Sicht – für den Zeitraum 2021 bis 2030 deutlich niedrigere als die bisher geschätzten Kosten von 1,6 Mrd Euro (zu Preisen 2023). Für die beiden darauffolgenden Jahrzehnte würden sich mit der im Einklang mit den EU-Klimazielen stehenden erwarteten Verschärfung des Zielpfads deutlich höhere Kosten von 9,5 Mrd Euro (2031 bis 2040) und 29,7 Mrd Euro (2041 bis 2050) ergeben. Ein weiterer relevanter Effekt auf die öffentlichen Finanzen entsteht durch die Verschiebungen im Energieverbrauch und die entsprechenden Auswirkungen auf die Steuerbemessungsgrundlagen. Der geringere Verbrauch an fossiler Energie führt zu einem Rückgang des damit verbundenen Steueraufkommens von 1,9% im Jahr 2023 auf langfristig 1,3% des BIP. Dieser Rückgang kann durch das Mehraufkommen aus der CO_2-Bepreisung nicht kompensiert werden, deren Einnahmen von 0,3% des BIP im Jahr 2023 auf den Höchstwert von 0,6% des BIP Anfang der 2050er Jahre steigen, bevor sie anschließend auf 0,5% des BIP im Jahr 2070 zurückgehen. Zusätzlich wurden die öffentlichen Kosten aufgrund von klimawandelbedingt häufiger auftretenden Naturkatastrophen berücksichtigt, die sich bis 2070 im Vergleich zur Referenzperiode 1980 bis 2010 real gemessen mehr als verdreifachen dürften (von durchschnittlich rund 200 Mio Euro auf knapp 800 Mio Euro pro Jahr). Insgesamt trägt die Entwicklung der klimabedingten Budgeteffekte im Jahr 2040 0,4% des BIP, im Jahr 2070 bereits 1,3% des BIP zur Verschlechterung des Primärsaldos bei. Hauptverantwortlich sind die Zusatzkosten aus der Nichterfüllung der ESR-Vorgaben sowie der Rückgang des energiebezogenen Steueraufkommens.

Die durch Demografie und Klimawandel bzw. -politik getriebene Verschlechterung des Primärsaldos kann durch andere Entwicklungen etwas abgemildert werden. Höhere Einnahmen im Vergleich zu 2023 sind durch Abgaben auf Arbeit und Pensionen zu erwarten. Ersteres liegt an dem deutlichen Anstieg der Lohnquote aufgrund der deutlichen Lohnerhöhungen, der sich bereits in der kurzen Frist vollzieht und annahmegemäß dauerhaft wirkt. Zweiteres erklärt sich durch den angesprochenen deutlichen Anstieg der Pensionen in der kurzen Frist. Aufgrund des laufenden Rückgangs der durchschnittlichen Alterspension im Vergleich zum durchschnittlichen Arbeitseinkommen sinkt das Aufkommen der Einkommensteuer auf Pensionen in Prozent des BIP wegen des Progressionseffekts aber laufend und kompensiert in der längeren Frist die kurzfristigen Mehreinnahmen. Eine Verbesserung der Primärsaldoentwicklung wird ebenfalls durch den Rückgang der Ausgabenquote für Verwaltung (u. a. allgemeine Verwaltung, innere Sicherheit, Landesverteidigung), aufgrund ihrer Eigenschaft als (teilweise) öffentliches Gut, erwartet. Die Verwaltungsausgaben wuchsen (inflations- und produktivitätsbereinigt) in der Vergangenheit deutlich schwächer als die Bevölkerung. Dieser Zusammenhang wurde auch in die Zukunft projiziert.[7] Mittelfristig auslaufende Subventionen und Vermögenstransfers unterstützen den Rückgang der Ausgabenquote.

[7] Das im Regierungsabkommen vorgesehene Ziel, die Ausgaben für Landesverteidigung auf 2% des BIP bis 2032 anzuheben, wurde hier noch nicht berücksichtigt.

Vorgeschriebener Schuldenpfad macht ab 2033 Primärüberschüsse notwendig

Die fiskalische Lücke ergibt sich aus der Differenz der erwarteten Entwicklung des Primärsaldos und dem, aus den europäischen Fiskalregeln abgeleiteten, mindestens zu erfüllenden Zielpfad (Grafik 2). Dieser Zielpfad der nötigen Primärsaldoquote wird aus dem Zielpfad der Schuldenquote, unter Berücksichtigung des Zinswachstumsdifferenzials und der Stock-Flow-Anpassungen, abgeleitet. Wenn die beiden letzten Faktoren null wären, bedeutet dies, dass ein ausgeglichener Primärsaldo eine konstante Schuldenquote zur Folge hätte. Eine jährliche Reduktion der Schuldenquote um 0,5 Prozentpunkte würde einen entsprechenden Primärüberschuss von 0,5% des BIP erfordern. Der notwendige Zielwert des Primärsaldos ändert sich, wenn der Beitrag des Zinswachstumsdifferenzials, d. h. Zinsquote abzüglich BIP-Nennereffekt, nicht ausgeglichen ist. Für 2025 ist der Beitrag des Zinswachstumsdifferenzials mit -0,8% des BIP noch negativ. Das bedeutet, der Zielwert der Primärsaldoquote reduziert sich im gleichen Ausmaß. Aufgrund der Annahme des langfristigen Anstiegs des Durchschnittszinssatzes der Staatsschuld – das Zinswachstumsdifferenzial dreht ab Anfang der 2050er Jahre in den positiven Bereich – verschärft sich die Vorgabe des Primärsaldozielwerts laufend. Grafik 2 zeigt, dass ab 2033 für die Einhaltung des Zielpfads der Schuldenquote Primärüberschüsse notwendig werden. Selbst ohne Berücksichtigung der europäischen Fiskalregeln bedingt die Stabilisierung der Schuldenquote eine große Konsolidierungsanstrengung. Die zusätzliche notwendige Anstrengung aufgrund des Debt Safeguards ist dazu vergleichsweise gering (rechte Abbildung in Grafik 2). Zusätzliche Anstrengungen aufgrund von Stock-Flow-Anpassungen betreffen annahmegemäß nur die ersten Jahre.

Deutliche Verschlechterung des Ausblicks gegenüber älteren Langfristanalysen

Im Vergleich zum letzten FISK Nachhaltigkeitsbericht des Jahres 2021 (NHB 2021), in dem die fiskalische Lücke für das Jahr 2070 noch mit 2,6% des BIP quantifiziert wurde, hat sich der fiskalische Ausblick aufgrund mehrerer Faktoren deutlich verschlechtert. Den größten Einfluss hat die markant ungünstigere Ausgangslage. Während im Letztbericht für 2023 mit einem Primärüberschuss von 0,6% des BIP gerechnet wurde, wurde ein Primärdefizit von 1,4% des BIP realisiert. Hauptverantwortlich sind die schlechtere wirtschaftliche Entwicklung und die Hochinflationsphase aufgrund der Energiekrise mit den damit verbundenen Unterstützungsmaßnahmen. Das reale BIP liegt 2025 laut Dezemberprognose des WIFO um über 5% niedriger als zum Erstellungszeitpunkt des Letztberichtes erwartet. Zudem musste die, aus der Vergangenheit abgeleitete, Trendwachstumsrate der Totalen Faktorproduktivität (TFP) von 0,9% p.a. auf 0,7% p.a. gesenkt werden.[8] Dadurch liegt das reale BIP im Jahr 2040 7% unterhalb der alten Schätzung. Im Jahr 2070 beträgt der Abstand zur alten Schätzung bereits 13%. Auch die Bevölkerungsprognose fällt im Vergleich zum Letztbericht nun etwas ungünstiger aus (Verhältnis der 65+ zu 20-64-jährigen steigt bis 2070 auf 55,8 statt 55,0). Dies wird teilweise durch eine optimistischere Erwerbsprognose kompensiert. Die aktuelle mittelfristige Zinserwartung fällt mit einer Durchschnittsverzinsung der Staatsschuld von 2,4% im Jahr 2030 im Vergleich zu 0,9% im Letztbericht deutlich höher aus. Als letzter wichtiger Revisionspunkt sind die nun berücksichtigten klimabedingten Budgeteffekte zu nennen.

Der Vergleich des erwarteten langfristigen Primärsaldos des NHB 2025 mit den EK- und BMF-Berechnungen macht deutlich, dass jene der FISK-Projektion den größten langfristigen Konsolidierungsbedarf ausweist (siehe Tabelle 1). Dies ist auf den höchsten erwarteten Anstieg an demografieabhängigen Ausgaben, aber auch auf die umfassende Berücksichtigung der klimabedingten Budgeteffekte, zurückzuführen. Der vergleichsweise stärkere Anstieg der demografieabhängigen Ausgaben im NHB 2025 erklärt sich einerseits durch unterschiedliche technische Annahmen (z. B. keine automatische Ausgabenbremse im Gesundheitsbereich) und andererseits aus der Verwendung aktuellerer Daten (z. B. Bevölkerungsprogno-

[8] Kurz- und Mittelfristprognosen sind typischerweise prozyklisch, d. h. sowohl Abschwünge als auch Aufschwünge werden tendenziell unterschätzt (Schuster, 2024). Um dies abzufedern wurde das langfristige TFP-Trendwachstum aus einem langen historischen Zeitabschnitt abgeleitet um die Sensitivität bezüglich der Entwicklung am aktuellen Rand zu reduzieren.

se von Statistik Austria vom Dezember 2024).

Tabelle 1: Vergleich der Hauptresultate verschiedener Langfristprojektionen für Österreich

in % des BIP	2023	2023 bis 2070	2023 bis 2060	2023 bis 2030	2030 bis 2040	2040 bis 2050	2050 bis 2060	2060 bis 2070
Primärausgaben des Staates								
BMF	50,6	-	*0,6*	*-0,1*	*0,5*	*0,2*	*-0,1*	-
FISK	51,5	*5,2*	*5,3*	*1,6*	*1,0*	*1,8*	*0,9*	*-0,1*
Demografieabhängige Ausgaben*								
BMF	27,6	-	*4,5*	*1,9*	*1,3*	*0,6*	*0,7*	-
EK	27,6	*2,7*	*2,3*	*1,5*	*0,3*	*0,1*	*0,4*	*0,3*
FISK	28,3	*6,7*	*6,3*	*2,4*	*1,3*	*1,5*	*1,1*	*0,4*
Einnahmen des Staates								
BMF	48,9	-	*1,0*	*0,9*	*0,1*	*0,0*	*-0,0*	-
FISK	50,1	*-0,1*	*0,2*	*0,7*	*-0,3*	*-0,0*	*-0,2*	*-0,3*
Primärsaldo				2030	2040	2050	2060	2070
BMF	-1,7	-	*0,4*	*-0,7*	*-1,1*	*-1,4*	*-1,3*	-
EK**	-1,3	*-2,0*	*-1,6*	*-2,2*	*-2,4*	*-2,5*	*-3,0*	*-3,3*
FISK	-1,4	*-5,3*	*-5,1*	*-2,3*	*-3,6*	*-5,4*	*-6,6*	*-6,7*

*) Ohne Familienleistungen; **) Werte der Europäischen Kommission (EK) auf Basis des Debt Sustainability Monitors 2023 (bis 2034) und des Ageing Reports 2024 (ab 2035).
Quelle: Langfristprognose des BMF (2022), Europäische Kommission (2024a,b) und eigene Berechnungen.

Variation der Annahmen unterstreicht unvermeidbaren Konsolidierungsbedarf

Langfristprojektionen und die ihnen zugrunde liegenden Annahmen sind mit erheblichen Unsicherheiten behaftet. Im Rahmen von Sensitivitätsanalysen können die für die Ergebnisse wichtigsten Annahmen identifiziert und variiert werden, um potenzielle Abweichungen von den Hauptresultaten der Projektion aufzuzeigen. Zusätzlich kann die Wirkung wirtschaftspolitischer Eingriffe abgeschätzt werden und potenzielle Handlungsfelder können identifiziert werden. Die bedeutendsten Annahmen für die demografiebedingten Ergebnisse sind das Bevölkerungswachstum, das Produktivitätswachstum, die Erwerbsbeteiligung und die Anzahl an geleisteten Arbeitsstunden: Ein Bevölkerungsanstieg bis 2070 um 674.000 Personen durch höhere Migration verringert die fiskalische Lücke 2070 um 0,7% des BIP, sofern Bildung und Produktivität dem österreichischen Durchschnitt entsprechen. Ein Anstieg des realen BIP durch ein stärkeres Wachstum der Arbeitsproduktivität (+0,5% pro Jahr) reduziert die langfristige Lücke um 1,3% des BIP, während ein Rückgang der durchschnittlichen Partizipationsrate um 2 Prozentpunkte die langfristige Lücke um 0,7% des BIP erhöht. Eine Fortsetzung des aktuellen Trends zur Arbeitsstundenreduktion bis 2050 – statt wie in der Basisvariante unterstellt bis 2030 – würde die fiskalische Lücke langfristig auf 8,3% des BIP erhöhen.

Die Sensitivitätsanalyse unterstreicht die Bedeutung der Vermeidung von importierter bzw. energiepreisbedingter Inflation zur Sicherung der Nachhaltigkeit der öffentlichen Finanzen. Eine Rückführung der Differenz des Preisanstiegs der Verbraucherpreise (VPI) und des BIP-Deflators auf das Niveau von 2019 würde die langfristige fiskalische Lücke um 1,1% des BIP reduzieren. Die Umsetzung einer Ausgabenbremse im Gesundheitswesen z. B. durch die Hebung von Effizienzpotentialen, und die Anhebung des Regelpensionsalters besitzen erhebliches Potenzial, die langfristige fiskalische Lücke zu verkleinern. Die Halbierung des historisch beobachteten, nicht demografisch oder durch das Einkommensniveau getriebenen, Anstiegs der Stückkosten von Sachleistungen im Gesundheitsbereich würde zu einem Rückgang der langfristigen fiskalischen Lücke im Umfang von 0,7% des BIP führen. Eine Anhebung des Regelpensionsalters um 1 Jahr ab dem Jahr 2035 würde die langfristige fiskalische Lücke um 0,5% des BIP senken. Im Fall der klimabedingten Budgeteffekte sind die CO_2-Preisentwicklung und die Berücksichtigung zusätzlich geplanter, aber noch nicht umgesetzter Maßnahmen des NEKP von besonderer Bedeutung. Die Implementierung der restlichen Klimamaßnahmen laut WAM-Szenario würde die langfristige Lücke um zusätzlich 0,6% des BIP ausdehnen und gleichzeitig die CO_2-Emissionen knapp mehr als halbieren. Eine

automatische Anpassung anderer Steuern durch den Wegfall des Steueraufkommens aus fossiler Energie würde die langfristige Lücke um 0,8% des BIP reduzieren.

Alle betrachteten Sensitivitätsszenarien projizieren eine beträchtliche langfristige fiskalische Lücke. Die Sensitivitätsanalysen unterstreichen damit die Notwendigkeit wirtschaftspolitischer Eingriffe zur nachhaltigen Sicherung der öffentlichen Finanzen in Österreich. Der effektive Konsolidierungsbedarf zur Schließung der langfristigen fiskalischen Lücke der Basisvariante, wurde im Rahmen des Konsolidierungsszenarios gerechnet. Hier gilt die Annahme, dass die fiskalische Lücke in jedem Jahr automatisch durch proportionale Anpassungen von Einnahmen und Ausgaben geschlossen wird. Der konsolidierungsbedingte Rückgang des realen BIP im Jahr 2070 beträgt 4,7%. Das nötige jährliche Konsolidierungsvolumen würde bis 2070 auf 9,1% des BIP steigen.

Box: Auswirkung des neuen Regierungsprogramms auf die fiskalische Lücke

Der vorliegende Bericht berücksichtigt Informationen bis zum 31. Jänner 2025. Zusätzlich galten die in Fiskalratsprognosen üblichen Kriterien der hinreichenden Konkretisierung sowie Beschlussfassung von Maßnahmen, um diese zu berücksichtigen. Das bedeutet, dass weder die Mitte Jänner an die Europäische Kommission übermittelte Liste an Konsolidierungsmaßnahmen, noch das im vorgelegten Regierungsprogramm skizzierte Maßnahmenpaket in den Detailberechnungen der Basisvariante des vorliegenden Berichts berücksichtigt werden konnte.

Diese Box erklärt, wie sich die Auswirkung von Konsolidierungspaketen mit vorgegebenen Volumina auf die langfristige fiskalische Lücke approximativ abschätzen lässt und was dabei zu beachten ist. Dies wird exemplarisch für das im aktuellen Regierungsprogramm geplante Maßnahmenpaket für die Jahre 2025 und 2026 durchgeführt. Das dabei angestrebte Konsolidierungsvolumen beträgt 6,3 Mrd Euro im Jahr 2025 und 8,7 Mrd Euro im Jahr 2026. Dies entspricht einer Konsolidierungsanstrengung von knapp 1,3% des BIP im Jahr 2025 sowie knapp 1,7% des BIP im Folgejahr, die netto, also abzüglich etwaiger zusätzlicher Offensivmaßnahmen, interpretiert wird. Das Konsolidierungsvolumen 2026 von 1,7% des BIP wurde als dauerhaft angenommen.[a] Zusätzlich wird der Effekt der Umstellung der Steuerbasis der Motorbezogenen Versicherungssteuer (Streichung der Ausnahme von Elektrofahrzeugen) explizit berücksichtigt, da der budgetäre Effekt langfristig deutlich zunimmt. Dadurch wächst das Konsolidierungsvolumen langfristig auf 2,0% des BIP.

Zusätzlich ist zu berücksichtigen, dass die Konsolidierung dämpfend auf die Wirtschaftsleistung wirkt und dies *ceteris paribus* zu einem Rückgang des Steueraufkommens und einem Anstieg der Ausgaben für Arbeitslosigkeit führt. Der Primärsaldo verbessert sich dadurch um weniger als das Konsolidierungsvolumen laut Regierungsprogramm.[b] Approximativ kann die effektiv ausgelöste Verbesserung des Primärsaldos mit Hilfe eines Multiplikators berechnet werden. Bei der Unterstellung eines Multiplikators von 0,4 (Fiskalrat, 2024) und einer Budgetsensitivität von 0,5 (approximativ abgeleitet aus der Einnahmenquote) bedeutet dies, dass die Verbesserung des Primärsaldos in etwa 80% des Ex-ante-Konsolidierungsvolumens entspricht ($1 - 0,4 \cdot 0,5 = 0,8$).

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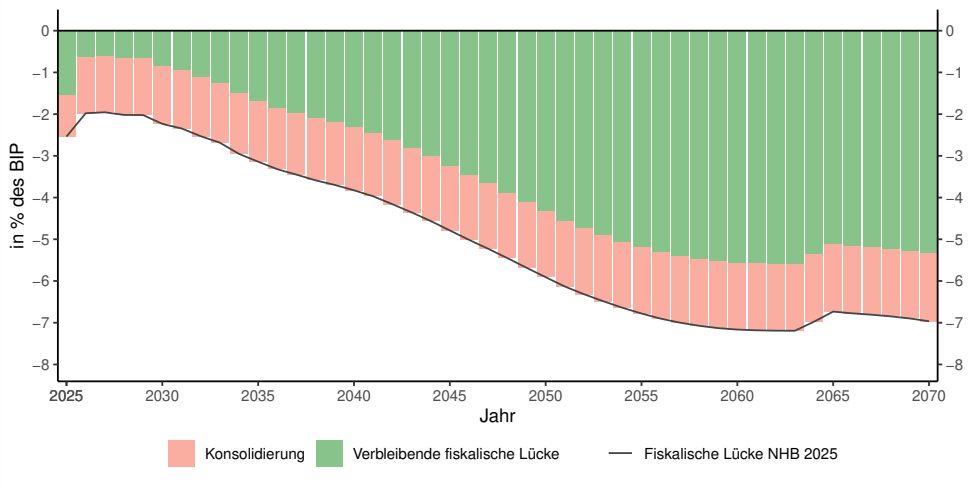
[a] Das bedeutet, dass der Wegfall zeitlich befristeter Mehreinnahmen, wie die Anhebung der Stabilitätsabgabe auf 500 Mio Euro oder einmalige bzw. befristete Ausgabensenkungen, durch andere Maßnahmen kompensiert werden. Außerdem wird der Abschaffung des Klimabonus ebenfalls ein permanenter Effekt unterstellt. Da in der Basisvariante der Klimabonus mit Auslaufen der nationalen CO_2-Steuer durch ein Recycling der ETS2-Zertifikatserlöse in Form von zusätzlichen Klimaförderungen ersetzt wird, bedeutet dies, dass diese Klimaförderungen annahmegemäß durch Umschichtungen finanziert werden müssten.

[b] Das Konsolidierungsvolumen ohne Berücksichtigung der indirekten makroökonomischen Effekte wird *ex-ante* genannt, während die ausgelöste Verbesserung des Primärsaldos als *ex-post* bezeichnet wird.

Box (Fortsetzung): Auswirkung des neuen Regierungsprogramms auf die fiskalische Lücke

Grafik 4: Fiskalische Lücke nach Berücksichtigung des Konsolidierungspakets 2025/2026



Quelle: eigene Berechnung.

Das aus dem aktuellen Regierungsprogramm abgeleitete langfristige Konsolidierungsvolumen von 2,0% des BIP bewirkt daher eine Verbesserung des langfristigen Primärsaldos im Umfang von 1,6% des BIP. Grafik 4 zeigt die Auswirkung auf die fiskalische Lücke. Das Konsolidierungspaket 2025/2026 würde die Lücke mittelfristig (2026 bis 2029) auf rund 0,6% des BIP reduzieren. Langfristig würde sich die Lücke 2070 von 7,0% auf 5,3% des BIP verkleinern.[c]

[c] Die im Regierungsprogramm anvisierten Konsolidierungsvolumen von 6,3 bzw. 8,7 Mrd Euro für 2025 und 2026 leiten sich aus Berechnungen des Finanzministeriums von Mitte Jänner ab, für die Variante eines 7-jährigen Anpassungspfads bei Vermeidung eines ÜD-Verfahrens. Am Ende des Anpassungspfads steht in dieser Berechnung ein Konsolidierungsvolumen von 18,1 Mrd Euro oder 3,0% des BIP im Jahr 2031. Unter der Annahme, dass Österreich in seiner Konsolidierungsbemühung diesem Pfad auch nach 2026 folgen würde, ergäbe sich eine verbleibende Lücke von 4,3% des BIP im Jahr 2070.

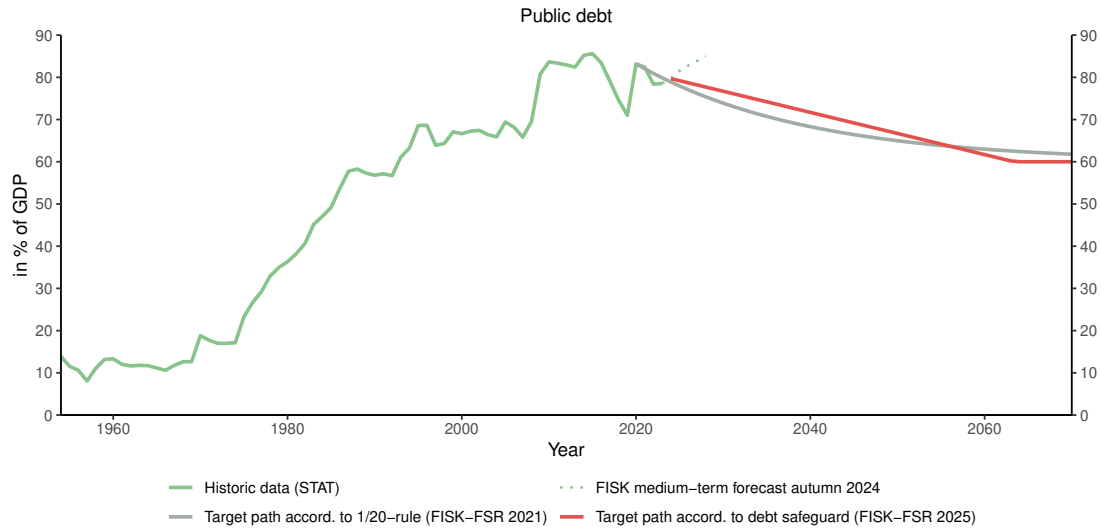
SUMMARY OF THE MAIN RESULTS

The present Fiscal Sustainability Report by the Fiscal Advisory Council (FISK-FSR 2025) aims to examine the long-term stability of Austria's public finances. For the first time, the fiscal implications of various climate aspects have been considered. The projections, which extend to the year 2070, were created under a no-policy-change assumption. The measures of the new government program could not yet be incorporated into the baseline scenario due to timing constraints. However, the expected effects of implementing the planned consolidation volume on Austria's long-term fiscal position were estimated (see Box 1).

Necessary Adjustment Requirement Increases from Currently 2.5% to 7.0% of GDP by 2070

The primary indicator used is the measure of the "fiscal gap," which represents the annual adjustment required in the primary balance to ensure that the debt-to-GDP ratio remains in line with the minimum requirements of the European fiscal rules on public debt over the long term. The new regulatory framework mandates a minimum reduction in the debt-to-GDP ratio of 0.5 percentage points per year ("debt safeguard") until a debt-to-GDP ratio of 60%[9] is reached (Figure 1).[10]

Figure 1: Target Trajectory for the Public Debt-to-GDP Ratio



Note: With the reform of the Stability and Growth Pact in April 2024, the 1/20-rule was effectively superseded by the debt safeguard (reduction of the debt-to-GDP ratio by at least 0.5pp per year).
Souce: Statistics Austria and own calculations.

The fiscal gap quantifies the annual adjustment requirement – consistent with comparable long-term analyses (such as the European Commission's Ageing Report) – without accounting for the macroeconomic feedback effects of the necessary consolidation.[11] This means that the actual consolidation effort required to close the fiscal gap exceeds the gap reported in this study (see Box 1). Starting from a gap

[9] From today's perspective, Austria must achieve a reduction of the debt ratio to 60% no later than the year 2064.

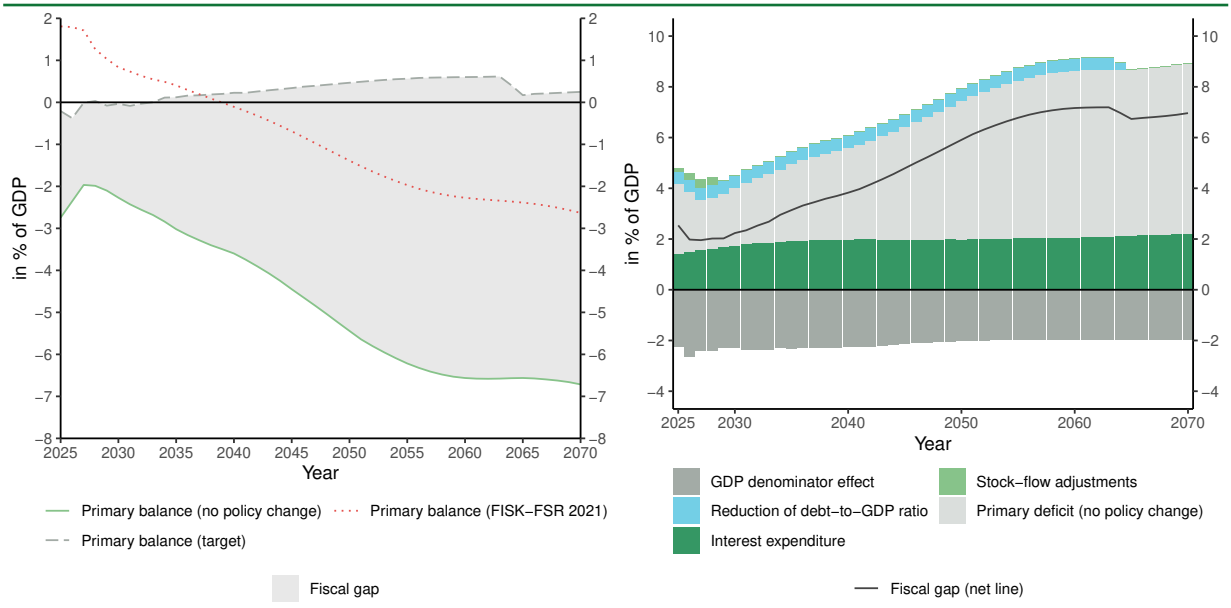
[10] It should be noted that in the short and medium term, deviations from the linear reduction of the debt-to-GDP ratio may occur for the following reasons: First, the reduction of 0.5pp applies on average over the chosen adjustment period of four or seven years. Second, structural adjustment requirements are translated into a maximum growth limit for net primary expenditures, which may lead to ex-post differences compared to structural adjustment requirements. Third, in the event of an excessive deficit procedure (EDP), the debt safeguard is temporarily suspended.

[11] Technically, the gap is closed using a virtual zero-multiplier instrument that represents the adjustment requirement.

of 2.5% of GDP in 2025, a slight easing is expected before the gap begins to widen in the early 2030s, reaching 3.8% of GDP by 2040. The fiscal gap peaks at 7.2% of GDP in the early 2060s before slightly declining to 7.0% of GDP by the end of the projection horizon. Implementing the consolidation measures planned in the new government's program for 2025 and 2026 would reduce the gap in 2070 by 1.6pp to 5.3% of GDP (see Box 1).

The determination of the adjustment requirement for a given year is based on the assumption that the adjustment requirements of previous years have been met. Deviating from the target path for the debt-to-GDP ratio shown in Figure 1 – for example, by delaying fiscal consolidation – would increase future adjustment needs due to additional interest payments. The report's focus on quantifying the current adjustment requirement stems from the perspective of complying with European fiscal rules and is methodologically related to the European Commission's sustainability indicators (S1 and S2 indicators). In contrast, long-term analyses such as those conducted by the Ministry of Finance (MoF) focus on quantifying the consequences of inaction. The primary indicator in these analyses is the long-term trajectory of the debt ratio in the absence of ongoing corrective measures. The MoF approach reflects a stricter interpretation of the no-policy-change assumption. Unlike the fiscal gap, however, this form of analysis is significantly more sensitive to interest rate assumptions and the chosen forecast horizon, and it is also more difficult to translate into concrete policy recommendations.

Figure 2: Evolution of the Fiscal Gap over the Projection Horizon



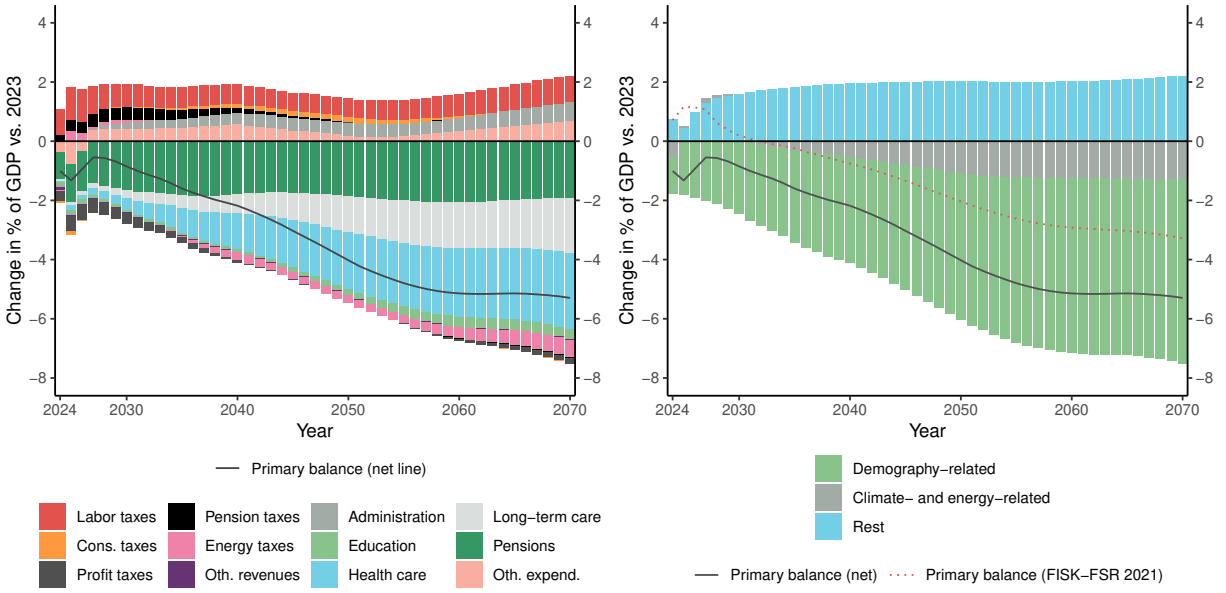
Source: FISK OLG Model.

Demographic Factors as the Main Driver of the Long-Term Deterioration of the Primary Balance

The primary balance-to-GDP ratio deteriorates significantly in the short term, compared to the base year 2023 (by 1.0% of GDP in 2024 and a further 0.3% of GDP in 2025). The main causes of this decline are the weak economic performance in these two years and the strong nominal increase in many inflation-indexed expenditure categories (e.g., pension expenditures) due to the delayed effects of the high-inflation phase. After a slight improvement in the primary balance ratio in the following years, a continuous deterioration is expected, reaching -6.7% of GDP by the end of the projection horizon in 2070. This represents a decline of 5.3pp compared to 2023. Figure 3 shows that this deterioration is largely attributable to demographically driven expenditure categories (+6.2% of GDP by 2070) and, to a lesser extent, to climate-related budgetary burdens (+1.3% of GDP by 2070). The development of other bud-

get categories (including taxes on labor and administrative costs) noticeably mitigates the increase in the primary deficit (-2.2% of GDP by 2070).

Figure 3: Development of the Primary Balance until 2070 compared to 2023



Source: FISK OLG Model.

The increase in demographically driven expenditures by 6.2% of GDP by 2070 is composed as follows: health care: +2.6% of GDP, pensions: +1.9% of GDP, long-term care: +1.8% of GDP, education: +0.3% of GDP, and family benefits: -0.5% of GDP. As illustrated in the left panel of Figure 3, pension expenditures – measured as a percentage of GDP – see the steepest increase in the short and medium term. Starting at 14.5% of GDP in 2023, an increase of 1.3pp to 15.8% of GDP is already expected by 2025. Despite significant demographic pressures on this expenditure category[12], the further long-term increase remains comparatively moderate, reaching 16.4% of GDP by the end of the projection horizon – just an additional 0.6pp. This is primarily due to the pension reforms implemented in the 2000s, which introduced lifetime earnings as the basis for pension entitlements, thereby gradually reducing effective replacement rates. The fact that the projected path of pension expenditures as a percentage of GDP is significantly higher than in previous projections is less a result of demographic forecast revisions and more due to weak economic performance, which raises the ratio by lowering the GDP denominator.[13]

In contrast to pension expenditures, spending on health care and long-term care rises more moderately in the short and medium term but increases significantly in the long run. Healthcare expenditures are expected to rise from 7.7% of GDP in 2023 to 8.9% in 2040 and 10.3% in 2070. Starting from a lower level, the relative increase in long-term care expenditures is even more pronounced. After standing at 1.3% of GDP in 2023, they are projected to rise to 1.9% in 2040 and 3.1% in 2070. The driving forces

12 By 2070, the number of old-age pensioners is expected to increase by 890 000, while the number of employed persons is projected to rise by only 210 000 over the same period.

13 If real GDP had evolved since 2021 as assumed in the last sustainability report, the projected pension expenditure ratio for 2025 would be 14.9% of GDP instead of 15.8%. If, in addition, the GDP deflator had risen at the same rate as the consumer price index (CPI), the forecast would be 14.4% of GDP. The sensitivity of the expenditure-to-GDP ratio to real GDP growth is particularly pronounced for pensions. Unlike other expenditures such as demand for health care services, which is assumed to respond directly to income changes and thus to GDP growth, weaker productivity and real wage growth translate only gradually into lower pension expenditure growth, as they primarily affect the benefit levels of new retirees.

behind these increases are not only demographic factors – such as higher per capita costs for health care and long-term care in old age – but also the fact that unit costs for in-kind services in these sectors have historically grown at a rate exceeding what can be explained by inflation and labor productivity alone. This trend is projected into the future without assuming additional cost containment measures. Likely causes include Baumol's cost disease[14] as well as cost-increasing technological advancements in the medical field. However, this development is somewhat offset by inflation-indexed transfers, such as long-term care allowances, whose unit costs do not keep pace with productivity growth, leading to a declining share of these transfers within total health care and long-term care expenditures. A similar trend applies to family-related transfers, which are expected to decline from 1.5% of GDP to 1.1% of GDP by 2070. In contrast, education expenditures are projected to see a slight long-term increase of 0.3pp, rising from 4.8% to 5.1% of GDP. This can be attributed to two main factors. First, despite an aging population, the relative number of young people is expected to increase. Currently, there are 0.32 people under the age of 20 for every person aged 20 to 64. According to population projections by Statistics Austria, this ratio is expected to rise to 0.36 by 2070. Second, average education costs are increasing due to a shift from primary and secondary education toward tertiary education.

The FISK-FSR 2025 thus reinforces the findings of the Ageing Report of the European Commission (EC) and the long-term forecast of the Federal Ministry of Finance (MoF), both of which also predict a significant increase in demographically driven expenditures in the long run. However, the expenditure increases calculated in the FISK-FSR 2025 are significantly higher than those projected by the MoF and the EC (Table 1). In the case of the MoF forecast, this discrepancy is primarily due to the significantly revised demographic and macroeconomic assumptions, as the forecast was published as early as 2022. The more recently published Ageing Report 2024 stands out with its comparatively optimistic projections, particularly regarding pension and education expenditures, setting it apart from the national long-term analyses (including the 2024 long-term assessment report of the Pension Commission (ASK).

Climate-Related Budget Items Contribute 1.3% of GDP to the Long-Term Deterioration of the Primary Balance

In this report, the fiscal effects of climate change, as well as national and international climate and energy policies (collectively referred to as "climate-related budgetary effects"), are considered for the first time. These climate-related budgetary effects are primarily determined by four factors: the direct costs of climate protection measures, additional revenues from CO_2 pricing net off the loss of a significant portion of energy-related tax revenues, the indirect budgetary costs resulting from weaker economic performance due to increased energy prices (including taxes), and the costs incurred from failing to meet European emissions reduction targets.

The current level of climate-related subsidies and transfers amounts to 0.7% of GDP. This ratio remains relatively constant over the projection horizon. Based on the no-policy-change assumption, only measures that have already been enacted were included in the baseline scenario, excluding planned or potentially necessary actions to achieve climate targets. The baseline scenario of this report aligns with the with existing measures (WEM) scenario from the National Energy and Climate Plan (NECP), but also incorporates measures from the with additional measures (WAM) scenario that have since been implemented or approved. This specifically includes the national CO_2 tax and its planned transition to the European Emissions Trading System 2 (ETS2) in 2027, which is not part of the WEM scenario. With emissions declining from 68 megatons (Mt) of CO_2 equivalents in 2023 to 47 Mt in 2050, the baseline scenario is slightly more optimistic than the WEM scenario (2050: 53 Mt) but significantly more pessimistic than the WAM

[14] Due to differing sectoral productivity growth, overall wage increases lead to relatively higher unit costs in sectors where productivity gains are harder to achieve due to the high level of personal services required.

scenario (2050: 25 Mt). As a result, Austria is projected to fall well short of the EU-wide goal of climate neutrality by 2050, necessitating the purchase of emissions certificates under the Effort Sharing Regulation (ESR). Due to exceeding the emissions reduction targets in recent years by reducing emissions more than required, the costs for the period 2021–2030 are now estimated to be significantly lower than previously projected, amounting to 1.6 billion euros (in 2023 prices). However, for the following two decades, with the anticipated tightening of emissions targets in line with EU climate objectives, significantly higher costs of 9.5 billion euros (2031–2040) and 29.7 billion euros (2041–2050) are expected. Another key fiscal impact arises from shifts in energy consumption and the effect on tax bases. The reduced consumption of fossil fuels leads to a decline in related tax revenues from 1.9% of GDP in 2023 to a long-term level of 1.3% of GDP. This decline cannot be fully offset by additional revenues from CO_2 pricing, which are projected to rise from 0.3% of GDP in 2023 to a peak of 0.6% of GDP in the early 2050s, before gradually decreasing to 0.5% of GDP by 2070. Additionally, the report accounts for the public costs of climate change-induced natural disasters, which are expected to more than triple in real terms by 2070 compared to the reference period 1980–2010 (rising from an annual average of approximately 200 million euros to nearly 800 million euros). Overall, the development of climate-related budgetary factors is expected to contribute to a deterioration of the primary balance by 0.4% of GDP in 2040 and 1.3% of GDP in 2070. The main drivers of this negative impact are the additional costs of failing to meet ESR targets and the decline in energy-related tax revenues.

The deterioration of the primary balance, driven by demographics and climate change or climate policy, can be somewhat mitigated by other developments. Higher revenues compared to 2023 are expected from taxes on labor and pensions. The former is due to the significant increase in the labor share, which occurs in the short term and is assumed to persist permanently. The latter results from the previously mentioned sharp rise in pensions in the short term. However, as the average pension continues to decline relative to the average labor income, income tax revenues from pensions as a percentage of GDP will gradually decrease over time due to the effects of tax progression, offsetting the short-term revenue gains in the long run. An improvement in the primary balance is also expected due to a decline in the expenditure-to-GDP ratio for administration (including general administration, internal security, and national defense), as these expenditures are partially classified as public goods. Historically, administrative expenditures (adjusted for inflation and productivity) have grown significantly more slowly than the population, and this trend has been projected into the future.[15] The phasing out of certain subsidies and capital transfers in the medium term further supports the reduction in the expenditure-to-GDP ratio.

Required Debt Path Necessitates Primary Surpluses from 2033 Onward

The fiscal gap arises from the difference between the expected development of the primary balance and the minimum required target path derived from European fiscal rules (see Figure 2). This target path for the necessary primary balance-to-GDP ratio is determined based on the debt-to-GDP ratio trajectory, taking into account the interest-growth differential and stock-flow adjustments. If these last two factors were zero, maintaining a balanced primary balance would result in a constant debt-to-GDP ratio. A yearly reduction of the debt ratio by 0.5pp would require a corresponding primary surplus of 0.5% of GDP. The required target level for the primary balance changes if the contribution of the interest-growth differential – i.e., the interest expenditure minus the GDP-denominator effect – is not neutral. For 2025, the interest-growth differential contributes negatively by -0.8% of GDP, which means the required primary balance-to-GDP target is reduced accordingly. However, due to the assumed long-term increase in the average interest rate on government debt – where the interest-growth differential turns positive from the early 2050s – the primary balance target continuously becomes more stringent. Figure 2 illustrates that from 2033 onward, primary surpluses will be necessary to adhere to the required debt-to-GDP trajectory.

[15] The government's goal to increase defense spending to 2% of GDP by 2032 has not yet been factored in.

Figure 2 further highlights that the additional effort needed to reduce the debt-to-GDP ratio in line with European fiscal rules is relatively small, compared to the effort required to merely keep it from rising. Any additional efforts due to stock-flow adjustments are assumed to be relevant only in the first years.

Significant Deterioration of the Outlook Compared to Previous Long-Term Analyses

Compared to the last sustainability report from 2021 (FISK-FSR 2021), in which the fiscal gap for the year 2070 was quantified at 2.6% of GDP, the fiscal outlook has significantly worsened due to several factors. The most influential factor is the markedly more unfavorable starting position. While the previous report projected a primary surplus of 0.6% of GDP for 2023, a primary deficit of 1.4% of GDP was actually realized. The main reasons are the weaker economic development and the period of high inflation due to the energy crisis, along with the associated support measures. According to WIFO's December forecast, real GDP in 2025 will be over 5% lower than expected at the time of the previous report. Furthermore, the trend growth rate of Total Factor Productivity (TFP), derived from historical data, had to be reduced from 0.9% p.a. to 0.7% p.a. As a result, real GDP in 2040 is projected to be 7% below the previous estimate, with the gap widening to 13% by 2070. The population forecast is also slightly less favorable compared to the previous report (the ratio of individuals aged 65+ to those aged 20-64 is expected to rise to 55.8 instead of 55.0 by 2070). However, this is partially offset by a more optimistic labor force participation projection. The current medium-term interest rate expectations are also significantly more unfavorable, with an average interest rate on government debt of 2.4% in 2030, compared to 0.9% in the previous report. Finally, another key revision concerns the inclusion of climate-related budgetary effects.

A comparison of the expected long-term primary balance in the FISK-FSR 2025 with the calculations of EC and MoF clearly shows that the FISK projection indicates the greatest long-term consolidation needs (see Table 1). This is due to the highest expected increase in demographic-dependent expenditures, as well as the comprehensive consideration of climate-related budgetary effects.

Table 1: Comparison of Main Results of Budget Projections

in % of GDP	2023	2023 to 2070	2023 to 2060	2023 to 2030	2030 to 2040	2040 to 2050	2050 to 2060	2060 to 2070
Primary government expenditure								
MoF	50.6	-	*0.6*	*-0.1*	*0.5*	*0.2*	*-0.1*	-
FISK	51.5	*5.2*	*5.3*	*1.6*	*1.0*	*1.8*	*0.9*	*-0.1*
Demography-related expenditure*								
MoF	27.6	-	*4.5*	*1.9*	*1.3*	*0.6*	*0.7*	-
AR	27.6	*2.7*	*2.3*	*1.5*	*0.3*	*0.1*	*0.4*	*0.3*
FISK	28.3	*6.7*	*6.3*	*2.4*	*1.3*	*1.5*	*1.1*	*0.4*
Government revenue								
MoF	48.9	-	*1.0*	*0.9*	*0.1*	*0.0*	*-0.0*	-
FISK	50.1	*-0.1*	*0.2*	*0.7*	*-0.3*	*-0.0*	*-0.2*	*-0.3*
Primary balance				2030	2040	2050	2060	2070
MoF	-1.7	-	*0.4*	*-0.7*	*-1.1*	*-1.4*	*-1.3*	-
AR/DSM**	-1.3	*-2.0*	*-1.6*	*-2.2*	*-2.4*	*-2.5*	*-3.0*	*-3.3*
FISK	-1.4	*-5.3*	*-5.1*	*-2.3*	*-3.6*	*-5.4*	*-6.6*	*-6.7*

*) Excluding familiy transfers; **) DSM (2023) until 2034, combination of DSM (2023) and AR (2024) for 2035 to 2070.
Source: AR (2024), DSM (2023), MoF (2022), WIFO (2022), own calculations.

Variation of Assumptions Highlights the Unavoidable Need for Consolidation

Long-term projections and their underlying assumptions are subject to considerable uncertainty. Sensitivity analyses can be used to identify and vary the most critical assumptions for the results, allowing for an assessment of potential deviations from the main findings of the projection. Additionally, the effects of economic policy interventions can be estimated. The most significant assumptions for the demographic-driven results include population growth, productivity growth, labor force participation, and the number

of hours worked: An increase in the population by 674 000 people by 2070 due to higher migration reduces the fiscal gap in 2070 by 0.7% of GDP, provided that education and productivity match the Austrian average. An increase in real GDP due to higher labor productivity growth (+0.5% per year) reduces the long-term gap by 1.3% of GDP, while a decline in the average participation rate by 2 percentage points increases the long-term gap by 0.7% of GDP. A continuation of the current trend of reducing working hours until 2050 – rather than until 2030, as assumed in the baseline scenario – would increase the long-term fiscal gap to 8.3% of GDP.

The sensitivity analysis highlights the importance of preventing imported or energy price-driven inflation to ensure the sustainability of public finances. A return of the difference between the consumer price index (CPI) and the GDP deflator to its 2019 level would reduce the long-term fiscal gap by 1.1% of GDP. Implementing a cost-containment measure in the health care system, for example, by leveraging efficiency potential, and raising the statutory retirement age both have significant potential to reduce the long-term fiscal gap. Halving the historically observed increase in the unit costs of in-kind health care benefits, which is neither demographically nor income-driven, would reduce the long-term fiscal gap by 0.7% of GDP. Raising the statutory retirement age by one year starting in 2035 would lower the long-term fiscal gap by 0.5% of GDP. In the case of climate-related budgetary effects, the development of CO_2 prices and the consideration of additional planned but not yet implemented measures from the NECP are of particular importance. The implementation of the remaining climate measures according to the WAM scenario would expand the long-term fiscal gap by an additional 0.6% of GDP while simultaneously reducing CO_2 emissions by slightly more than half. An automatic adjustment of other taxes to compensate for the loss of tax revenue from fossil energy would reduce the long-term fiscal gap by 0.8% of GDP.

All examined sensitivity scenarios project a substantial long-term fiscal gap. The sensitivity analyses thus emphasize the necessity of economic policy interventions to ensure the sustainable stability of public finances in Austria. The effective consolidation requirement to close the long-term fiscal gap in the baseline scenario was calculated using a consolidation scenario. Here, it is assumed that the fiscal gap is automatically closed each year through proportional adjustments to revenues and expenditures. The GDP reduction due to consolidation measures in 2070 amounts to 4.7% in real terms. The required annual consolidation volume would rise to 9.1% of GDP by 2070.

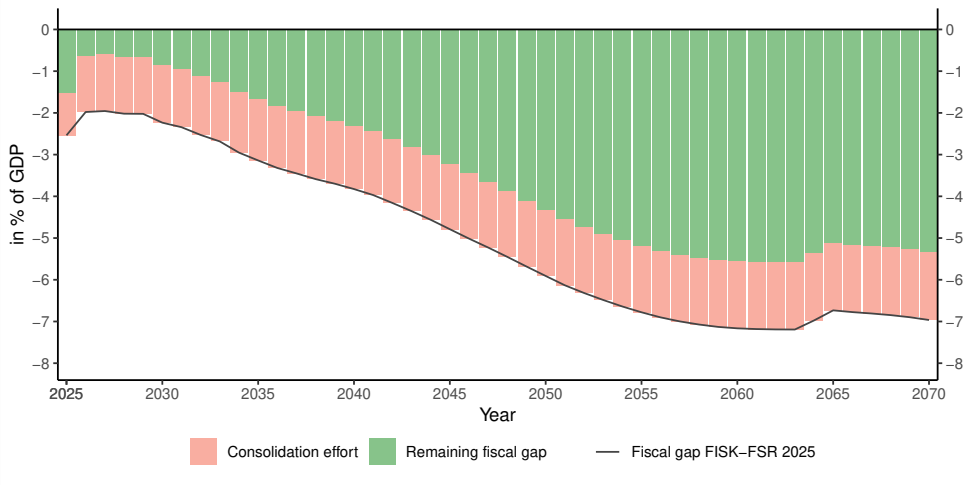
Box 1: The Effect of the New Government Measures on the Fiscal Gap

The present report incorporates information up to January 31, 2025. Additionally, the standard criteria for FISK forecasts – sufficient concretization and formal adoption of measures – were applied to determine inclusion. This means that neither the list of consolidation measures submitted to the European Commission in mid-January nor the package of measures outlined in the new government program could be included in the detailed calculations of the baseline scenario of this report. This section explains how the impact of consolidation packages with predefined volumes on the long-term fiscal gap can be approximately estimated and what needs to be considered in this process. This is exemplified using the package of measures planned in the current government program for the years 2025 and 2026. The targeted consolidation volume amounts to 6.3 billion euros in 2025 and 8.7 billion euros in 2026. This corresponds to a consolidation effort of approximately 1.3% of GDP in 2025 and nearly 1.7% of GDP in the following year, interpreted net of any additional expansionary measures.

Box 1 (cont'd): The Effect of the New Government Measures on the Fiscal Gap

The 2026 consolidation volume of 1.7% of GDP is assumed to be permanent.[a] Furthermore, the impact of adjusting the tax base for the engine-specific insurance tax (removal of the exemption for electric vehicles) is explicitly considered, as its budgetary effect increases significantly in the long term. As a result, the consolidation volume grows to 2.0% of GDP over the long term.

Figure 4: Fiscal Gap after Consideration of the Consolidation Package 2025/2026



Source: own calculations.

Additionally, it must be considered that consolidation dampens economic performance, which, *ceteris paribus*, leads to a decline in tax revenues and an increase in unemployment-related expenditures. As a result, the primary balance improves by less than the consolidation volume stated in the government program.[b] The effective improvement in the primary balance can be approximately calculated using a multiplier. Assuming a multiplier of 0.4 (Fiscal Advisory Council, 2024) and a budget sensitivity of 0.5 (approximately derived from the revenue ratio), this implies that the improvement in the primary balance corresponds to about 80% of the ex-ante consolidation volume ($1 - 0.4 \cdot 0.5 = 0.8$). Thus, the long-term consolidation volume of 2.0% of GDP, derived from the current government program, results in an improvement of the long-term primary balance by 1.6% of GDP. Figure 4 illustrates the impact on the fiscal gap. The 2025/2026 consolidation package would reduce the gap to approximately 0.6% of GDP in the medium term (2026 to 2029). Over the long term, the gap would decrease from 7.0% to 5.3% of GDP by 2070.[c]

[a] This means that the expiration of temporary revenue increases, such as the increase in the banking levy to 500 million euros or one-time and temporary spending cuts, is offset by other measures. Additionally, the abolition of the Climate Bonus is assumed to have a permanent effect. Since the baseline scenario replaces the Climate Bonus, which expires with the national CO_2 tax, through the recycling of ETS2 auction revenues in the form of additional climate subsidies and transfers, this implies that these climate subsidies and transfers would have to be financed through reallocation.

[b] The consolidation volume without considering indirect macroeconomic effects is referred to as *ex-ante*, whereas the resulting improvement in the primary balance is referred to as *ex-post*.

[c] The consolidation volumes targeted in the government program – 6.3 and 8.7 billion euros for 2025 and 2026, respectively – are based on calculations by the Ministry of Finance from mid-January. These calculations assume a seven-year adjustment path while avoiding an ED procedure. At the end of this adjustment path, the projected consolidation volume amounts to 18.1 billion euros, or 3.0% of GDP, in 2031. Assuming that Austria continues to follow this consolidation path beyond 2026, there would still be a remaining gap of 4.3% of GDP by 2070.

1. MOTIVATION AND CONTEXT

The Fiscal Sustainability Report (FISK-FSR 2025) fulfills the Fiscal Council's legally mandated requirement to analyze the sustainability of Austria's fiscal policy (§ 1 no. 3 Federal Law Gazette I No. 226/2021 – Fiscal Advisory Council and Productivity Board Act of 2021). Assessments of long-term fiscal trends specifically consider the anticipated effects of macroeconomic, demographic, and societal changes on government revenues and expenditures, thereby providing a foundation for evaluating risks to a country's long-term debt sustainability. This is the second report of its kind, following the first Fiscal Sustainability Report in 2021 (FISK-FSR 2021, Fiscal Advisory Council, 2021).

Both the monitoring of sustainable and rule-based fiscal policy and the policy advisory function are core tasks of the established fiscal councils, known as Independent Fiscal Institutions (IFIs), which ultimately contribute to the enforcement of fiscal rules and transparency regarding future fiscal developments. Nearly one-third of the IFIs in the Network of EU Independent Fiscal Institutions exercise an official mandate for conducting fiscal sustainability analyses – based on a legal foundation or a memorandum of understanding between the federal government and the IFI (The Network of EU Independent Fiscal Institutions, 2021). Another third conducts such analyses on their own initiative to supplement their analyses based on short- and medium-term forecasts within a multidimensional approach with additional long-term perspectives (Fiscal Advisory Council, 2021).

The report is structured as follows. Section 2 examines the various channels through which climate change and climate policy influence long-term public finances. It also explains how these channels were integrated into FISK's primary long-term analysis tool, the FISK OLG Model, with the inclusion of a climate module being the key enhancement since the last report. Section 3 outlines the main assumptions and results of the latest long-term projection and explores the sensitivity of these results across multiple dimensions. Finally, Section 4 compares the FISK-FSR 2025 findings with those of other major, Austria-specific, long-term analyses.

2. FISCAL DIMENSION OF CLIMATE CHANGE AND CLIMATE POLICY

2.1. An Overview of Impact Channels and Methods

Addressing anthropogenic climate change is a pressing challenge for socio-economic systems. Climate change threatens ecosystems and economic stability by disrupting natural processes and human activities. The Intergovernmental Panel on Climate Change (IPCC) identifies key risks for Western and Central Europe, including health impacts due to increased heat exposure, ecosystem changes, declines in crop yields and forestry output, and shifts in energy demand. These risks extend to macroeconomic volatility, price instability, and fiscal stress for governments (IPCC, 2022). In response, the Austrian Panel on Climate Change (APCC) underscores the need for structural transformations to mitigate these effects, urging a fundamental shift in economic and social systems (APCC, 2023). To assess and anticipate the wide-ranging implications of climate change and mitigation strategies, Integrated Assessment Models (IAMs) integrate knowledge from multiple disciplines, combining climate science, economics, and policy analysis into a single framework. These models play a crucial role in evaluating policy scenarios, estimating climate costs, and analyzing the effects of policy decisions on climate and socio-economic systems. IAMs primarily compute "climate costs" within two analytical frameworks: cost-benefit models (CB-IAMs), which internalize the external costs of climate change, and cost-effectiveness models (CE-IAMs), which focus on the costs of achieving specific mitigation targets. Both frameworks rely on predefined scenarios, making the assumptions embedded in these models highly influential in determining their outcomes. Standardized scenario inputs are crucial to ensuring comparability across different models. The remainder of this section briefly discusses CB-IAMs as well as CE-IAMs (which are more relevant for the purpose of this report), with a special focus on Austria-specific models. More general overviews are provided, for instance, by Oberpriller et al. (2021) and Drudi et al. (2021).

Cost-Benefit Models

Cost-benefit IAMs assess climate change policies by weighing mitigation costs against the benefits of avoided damages. They incorporate a damage cost model to estimate the economic cost of inaction and a mitigation cost model to estimate the cost of compliance with climate targets. These models are built on several key components, including climate and carbon cycle modules, economic growth functions, and damage functions. Additionally, social welfare functions account for intergenerational equity by incorporating discount rates that determine how future climate damages are valued. A key component of CB-IAMs is the damage function, which estimates the Social Cost of Carbon (SCC) by quantifying the loss of GDP resulting from climate change. This estimation can be performed using different approaches. Aggregate damage functions, which assume damages increase non-linearly with temperature, are widely used but often lack empirical support. Sector-specific damage functions provide a more detailed assessment by linking economic losses to biophysical models, but their accuracy is constrained by data limitations. Econometric approaches, which use historical data to estimate climate damages, offer another method for refining impact estimates. However, these approaches often struggle to capture long-term effects and complex interactions between climate change and economic systems.

Dynamic Integrated Model of Climate and the Economy (DICE)

The Dynamic Integrated Model of Climate and the Economy (DICE), developed by William Nordhaus (Nordhaus, 2008), is one of the most widely used CB-IAMs. It is a neoclassical growth model that optimizes consumption paths for a single global region. The model assumes that climate damages are proportional to global GDP, and estimates mitigation costs based on a backstop technology that represents the most expensive feasible emissions reduction strategy. The cost of emissions reduction follows a rising cost function, but this assumption has been criticized for not accounting for past mitigation efforts. The DICE model has undergone multiple revisions, with adjustments to damage functions and economic

growth projections leading to significant changes in SCC estimates (Nordhaus, 2018).

Climate Framework for Uncertainty, Negotiation, and Distribution (FUND)

The Climate Framework for Uncertainty, Negotiation, and Distribution (FUND) differs from DICE by incorporating regional heterogeneity. Covering 16 world regions and 14 impact sectors, FUND applies damage functions that relate economic impacts to GDP and population size. The model accounts for sector-specific damages, such as impacts on health, agriculture, and energy demand, and monetizes non-market impacts using the statistical value of life. Unlike DICE, FUND incorporates the rate of climate change into its damage functions, capturing the potential for abrupt and nonlinear climate impacts.

Policy Analysis for the Greenhouse Effect (PAGE)

The Policy Analysis for the Greenhouse Effect (PAGE) model was developed for EU climate policy evaluation. Unlike DICE and FUND, PAGE incorporates a stochastic structure that accounts for uncertainty in climate sensitivity, economic impacts, and discount rates. The model uses transient climate response metrics rather than equilibrium climate sensitivity, providing a different approach to estimating temperature changes resulting from emissions.

Cost-Effectiveness Models

Cost-effectiveness IAMs focus on identifying the least-cost pathways to achieve predefined temperature targets, such as the Paris Agreement goal of limiting warming to 1.5°C. These models do not explicitly estimate climate damages but instead evaluate mitigation costs under various policy scenarios. The cost of mitigation is assessed through different metrics, including changes in GDP, consumption, and marginal abatement costs. Unlike CB-IAMs, CE-IAMs cannot directly account for the benefits of avoided damages but provide insights into economically efficient mitigation strategies. The majority of work related to the aims of this report falls into the group of CE-IAMs. Independent Fiscal Institutions (IFI) typically focus on the effects of climate change and mitigation on public finances from their country's perspective, without addressing the country's contribution to climate change. In Europe, the UK's Office for Budget Responsibility (OBR) and the Irish Fiscal Council produce long-term sustainability analyses including climate-related risks on a regular basis (Office for Budget Responsibility, 2023; Irish Fiscal Advisory Council, 2020). Examples of models with climate impact assessment of international institutions are the GEM-E3 model of the Joint Research Centre, the E-QUEST model developed at the European Commission, or the Climate Policy Assessment Tool (CPAT) jointly developed by the World Bank and the International Monetary Fund (IMF). We now look at Austria-specific CE-IAMs.

MIO-ES (UBA)

The MIO-ES model (Frei et al., 2023) of the Environment Agency Austria (UBA) is a hybrid macro-IO model that tracks energy flows in physical units. It integrates the input from specialized sector models for buildings, transport, the metalworking industry and the energy sector (bottom-up) with an Input-Output model structure (top-down). The model consists of three sub-models: (1) quantity, (2) price, and (3) demand. The quantity model determines final energy demand and industry outputs, monetized using implicit prices. The price model assesses demand for inputs and their prices, where cost changes drive sectoral shifts. The demand model estimates private consumption and investments, using a Keynesian demand system. Imports are endogenous, while exports and public spending are exogenous. The model is used to simulate the macroeconomic effects of climate policy measures in UBA's own long-run projections (Krutzler et al., 2023) as well as an impact assessment tool in the NECP.

ATMOD (Institute of Advanced Studies, IHS)

The ATMOD model is a multi-industry New Keynesian DSGE model of the Austrian economy developed at the Institute for Advanced Studies (IHS) (Reiter, 2024). The model includes an input-output structure with 88 industries. Initially serving as a fiscal policy impact assessment tool (Molnárová and Reiter, 2022), the model has been extended to incorporate energy in various forms as specific inputs in production. Agents are forward-looking, follow rational expectations, and trade in goods, production factors, and financial assets. Households decide on labor supply and consumption, while monopolistically competitive firms determine factor demands. Austria is modeled as a small open economy facing downward-sloping export demand curves. The model allows for analyzing both the macroeconomic effects of carbon pricing and renewable energy subsidies, as well as their impact on greenhouse gas emissions by linking endogenous energy consumption to emissions. It has been used to simulate the sectoral impacts of carbon pricing on the Austrian economy.

E-PuMA (EcoAustria)

The E-PuMA model by EcoAustria (Berger and Strohner, 2022) is an energy-focused extension of the PuMA public policy model, previously used to assess economic, labor market, and public finance effects. It is a general equilibrium model similar to ATMOD, but without New Keynesian price rigidities. PuMA emphasizes household behavior in the labor market, using a probabilistic aging approach to model overlapping generations with different skill levels. Individuals optimize lifetime utility by adjusting consumption, work hours, job search intensity, and retirement age (Berger and Strohner, 2020). E-PuMA expands final goods types, with households consuming energy (indoor climate, mobility, other energy) and non-energy goods. Similar to E-QUEST, energy production is split by primary energy source. In addition to the primary energy sectors, the production side includes an electricity sector that supplies power to households and firms. In the energy sector, GHG emissions can be abated by substituting away from fossil fuel to clean energy. In addition, non-energy firms have access to an abatement technology to reduce emissions at a cost.

WEGDYN (Wegener Center)

The WEGDYN-AT model by the Wegener Center is a recursive computable general equilibrium model designed to analyze the macroeconomic effects of climate policy in Austria (Bacher, 2024). Households, categorized by income quartile and degree of urbanization, maximize consumption utility, while firms in 81 sectors maximize profits under perfect competition. A high-resolution energy sector includes multiple electricity and heat generation technologies, as well as co-generation. The transport sector is detailed, covering motorized individual transport, public transport, freight transport, and infrastructure provision. Additionally, the model highlights the basic metals industry, particularly steel production, a major source of Austria's greenhouse gas emissions. It assesses key indicators such as GDP, GHG emissions, public budget effects, and welfare. WEGDYN-AT also evaluates revenue recycling strategies to compare economic growth, emissions reduction, and social equity outcomes.

2.2. Modeling the Fiscal Impact of Climate Change and Climate Policy in the FISK-FSR 2025

Before detailing the impact channels of climate change and climate policy considered in the FISK-FSR 2025 analysis, we briefly have to discuss the relevant institutional setting at the national and international levels. The European Union has adopted two key mechanisms to reduce greenhouse gas (GHG) emissions. The Emissions Trading System (ETS1), established in 2005, is a cap-and-trade system that limits emissions from major polluting industries, including power generation and aviation, while allowing companies to buy and sell emission allowances. The Effort Sharing Regulation (ESR), which replaced the Effort Sharing Decision in 2018, complements ETS1 by setting national emission reduction targets for sectors not cov-

ered by ETS1, such as transport, agriculture, and buildings. The national targets were set in line with the EU's overall climate goals of a 55% reduction in emissions by 2030 compared to 1990 levels and achieving climate neutrality by 2050.[16] Failure to meet the ESR's emission reduction targets results in financial consequences for the member states, as discussed below. The "Fit for 55" package, adopted in 2023, extends the Emission Trading System to cover transportation, buildings, and other sectors. This new system, known as ETS2, will begin operating in 2027. The auction revenues from emission allowances under ETS1 and ETS2 are allocated to member state governments, except for the portion dedicated to financing the Social Climate Fund. In 2022, Austria introduced a national CO_2 tax, which will be replaced by ETS2 in 2027.

The remainder of this section explains how different impact channels of climate change and climate policy on long-run public finances were integrated. The goal was to incorporate these channels consistently into the FISK OLG long-run model. Some channels, such as damages from natural disasters, were prepared as independent analyses and then converted into appropriate shocks for the FISK OLG model. Other channels, such as endogenous energy consumption and emissions, required adjustments to the model's inner workings. Austria was modeled as a small open economy, assuming that Austrian policies do not affect the global climate or international energy and CO_2 prices. The analysis relied heavily on external sources, including the IPCC, the European Commission, and the Environment Agency Austria (UBA), either by directly using the same explicit assumptions or results (e.g., IPCC temperature forecasts or energy price assumptions by the European Commission) or by replicating other projections and therefore using the same implicit assumptions (e.g., indirectly matching UBA's underlying energy efficiency trends). The main task was to consolidate existing estimates in a consistent way, and evaluate the impacts on public finances. This involved adjusting external information to ensure consistency. A key example was determining which scenario of climate measures to consider. The National Energy and Climate Plan (NECP) by the Austrian government, distinguishes between two scenarios: with existing measures (WEM) and with additional measures (WAM). The cut-off date for classifying measures as either existing or planned was the end of 2021, meaning that neither WEM nor WAM directly corresponds to the no-policy-change assumption used in this analysis. The baseline scenario, therefore, features all measures from WEM and only those of WAM that have already been implemented or enacted in the meantime. Notably, the national CO_2 tax and the subsequent implementation of the ETS2 system, are not included in WEM, but had to be included in the FISK-FSR 2025 baseline. Additionally, judgment calls were necessary regarding future European-level regulations, particularly concerning non-compliance with the Effort Sharing Regulations after 2030. The analysis used the EU's net zero emissions goal by 2050 as a guiding anchor.

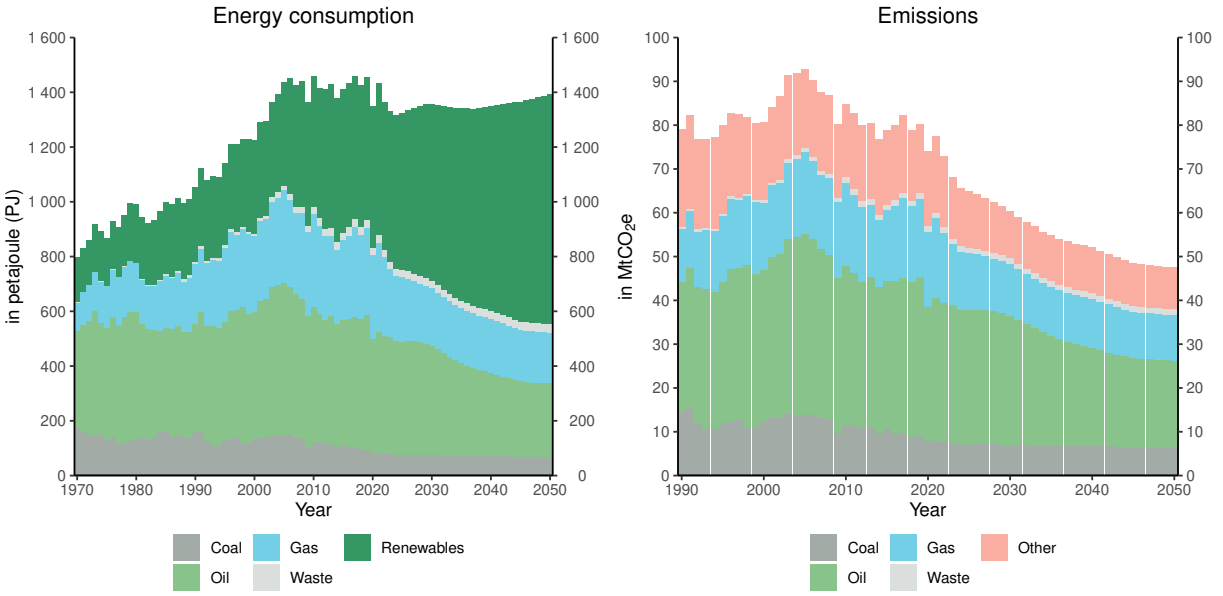
2.2.1. Energy Consumption, CO_2-Pricing and Emissions

The primary source for changes in energy consumption is the long-run projection by Krutzler et al. (2023).[17] Fossil fuels account for about three-quarters of energy consumption and are the main determinant of greenhouse gas (GHG) emissions. The remaining emissions primarily come from agricultural activities, livestock farming, waste management, and industrial processes like cement production. The analysis explicitly differentiates between coal, oil, gas, and renewables as energy sources due to their varying CO_2 content, and models their usage endogenously. Energy from waste, as well as non-energy-related CO_2e emissions, are directly based on the WEM projection by UBA. CO_2e emissions do not only vary by

[16] In contrast to the EU's overall emission reduction goals, measured against the 1990 levels, the ESR's base year was chosen to be 2005.

[17] UBA provided the background analysis for the NECP (Austrian Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology, 2024), which contained some updates to the emission paths in Krutzler et al. (2023), mostly reflecting the availability of more recent energy and emission data. As the emission and energy data in Krutzler et al. (2023) are much more detailed, we based our analysis on that source, while manually adjusting the paths to link to the most recent data.

Figure 5: Emission-Weighted Energy Consumption and Emissions by Energy Source



Source: Statistics Austria, Environment Agency Austria, and FISK OLG Model.

energy source, but also if the source is combusted or used in non-energy-generating ways, such as producing plastics and petrochemicals from oil and gas. To account for these differences, emission-weighted consumption of primary energy sources is constructed from Statistics Austria's energy balances.[18] CO_2e emissions are calculated by multiplying the emission-weighted consumption time series with the corresponding CO_2e-intensity factors.[19] Figure 5 illustrates the derived energy consumption and emissions by energy source for the past and the baseline projection for the future.[20]

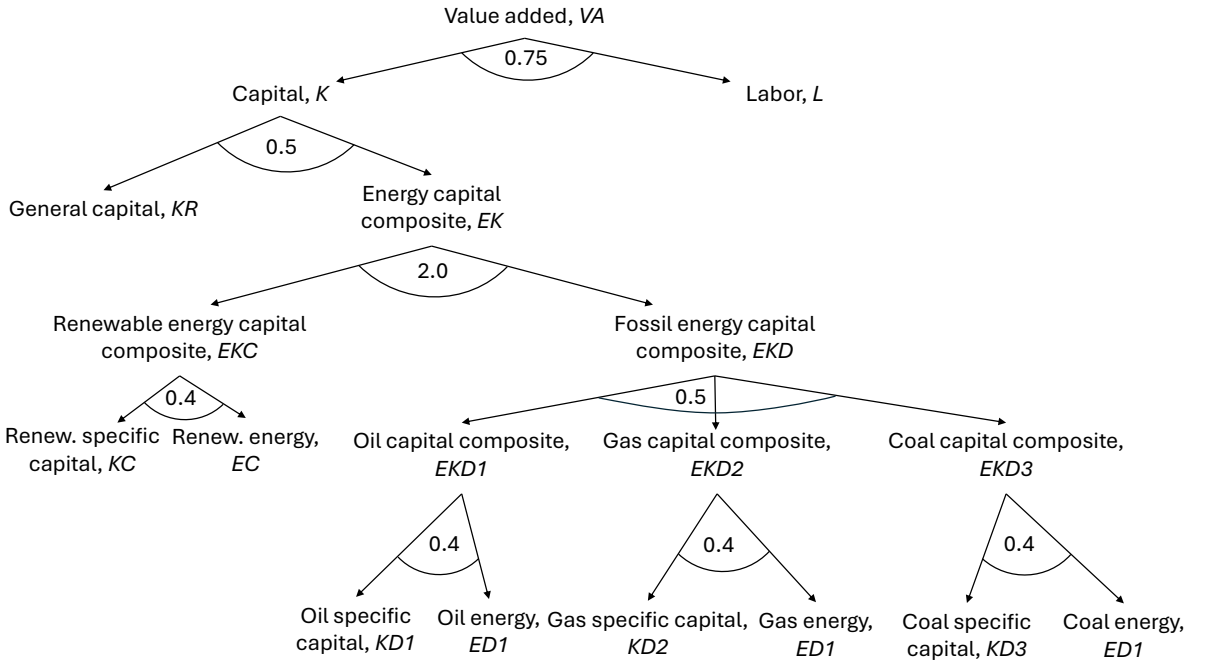
Energy consumption is assumed to be determined by three main factors: the overall level of economic activity, the energy intensity of the economic activity, and the prices of energy. Relative changes in energy prices and energy intensities between energy sources can alter the composition of energy consumption. Changes in energy consumption are determined in a smaller dedicated equilibrium model that is soft-linked to the FISK OLG model (see Schuster, 2025). This energy sub-model features a production function that includes energy of different sources as input to production. The nested structure of the production function allows for varying elasticities of substitution between these factors. The structure of the production function is strongly based on E-QUEST, the energy model of the European Commission's Directorate-General for Economic and Financial Affairs (DG ECFIN) (Varga et al., 2022), which was prominently used in the impact assessment of the Commission's Green Deal proposals. The chosen elasticities of substitution compromise between the assumptions of Varga et al. (2022) and Reiter et al. (2023); Reiter (2024), who generally use lower elasticities. Figure 6 displays the structure of the production function and the selected elasticities. The energy sub-model informs the large OLG model about changes in energy intensity per unit of capital, changes in the composition of the primary energy sources, and changes in the effec-

[18] Starting from the data on gross inland consumption by energy source, final energy use receives a weight of 1, while the remaining part (net transformation, energy sector use, transport losses, and non-energy use) is assigned a lower weight, depending on the energy source.

[19] Based on Juhrich (2016), we used the following conversion factors: coal: 99.3 tCO_2e per TJ, oil: 74.0 tCO_2e per TJ, gas: 55.9 tCO_2e per TJ, waste: 44.8 tCO_2e per TJ, renewables: 0 tCO_2e per TJ.

[20] Throughout the report, all emission numbers exclude net emission changes through land use, land-use change, and forestry (LULUCF), which are excluded from emission trading and subject to their own regulations.

Figure 6: Introducing Energy into the Production Function



Note: Values in circular segments indicate the assumed elasticities of substitution.
Source: own illustration.

tive price of capital.[21] For instance, an increase in the price of oil, ceteris paribus, leads to substitution away from oil to other energy sources and from energy-related to non-energy-related activities, reducing overall energy consumption while increasing the effective user cost of capital, which results in lower total output.

The first essential input to the energy sub-model is the after-tax price trajectory, including CO_2-related surcharges and other energy taxes.[22] Table 2 summarizes the price assumptions based on the European Commission's recommended parameters. The price of CO_2 emission trading allowances (ETS1 and ETS2) is assumed as an exogenous path, functioning like a fixed tax on CO_2 from the perspective of a small open economy. It was further assumed that by 2035, ETS2 will be integrated into ETS1, with both following the same price trajectory. The European Commission provides price assumptions until 2055, and constant prices in real terms were assumed for the subsequent years. ETS2 will replace the national CO_2 tax in 2027.[23] ETS2 revenues are allocated to the member states, either directly (earmarked) or indirectly via the Social Climate Fund (also earmarked), and it was assumed that these revenues are directly translated into climate subsidies and transfers. Table 2 also reports alternative ETS price assumptions by the Commission ("WAM price scenario") which will be used in sensitivity simulations.

[21] In contrast to a full integration in the large OLG model, this approach is silent about changes in the current account, due to changing import patterns of energy.

[22] The combined effective surcharge on the price per GJ in 2025 was computed as 97% on coal, 23% on gas, 156% on oil, and 11% on renewable energy. This calculation uses a broad definition of energy tax bases. Next to the CO_2 surcharges, also the mineral oil tax ("Mineralölsteuer"), the engine-specific insurance tax ("Motorbezogene Versicherungssteuer"), the energy tax ("Energieabgabe"), the taxes on renewable energy ("Ökostromabgaben"), as well as some smaller taxes, are proportionally linked to the consumption of specific forms of energy.

[23] In ESA, ETS1 revenues currently enter national accounts with a lag of one year. If the same applies to the statistical treatment of ETS2 revenues, there will be a gap in revenues in 2027, which was not taken into account in the simulations.

Table 2: Energy and CO_2 Price Assumptions

in euros at 2023 prices	2022	2023	2024	2025	2026	2027	2028	2029	2030	2035	2040	2045	2050	2055
Oil per GJ	16.7	12.5	13.1	12.4	12.7	13.0	13.3	13.6	13.9	15.4	15.8	17.2	19.7	23.8
Gas per GJ	35.1	10.9	8.3	9.4	9.3	9.2	9.2	9.1	9.0	8.2	10.1	9.9	9.6	9.6
Coal per GJ	10.9	4.4	4.1	4.1	4.1	4.1	4.0	4.0	4.0	3.8	3.8	4.0	4.0	4.1
ETS 1 per tCO_2	86	85	95	95	95	95	95	95	95	100	100	160	190	220
ETS 2 per tCO_2	-	-	-	-	-	30	50	55	60	100	100	160	190	220
National CO_2 tax per tCO_2	32	35	44	52	51	-	-	-	-	-	-	-	-	-
ETS 1 per tCO_2 (WAM trajectory)	86	85	95	95	95	95	95	95	95	140	290	430	490	520
ETS 2 per tCO_2 (WAM trajectory)	-	-	-	-	-	30	50	55	60	140	290	430	490	520

Note: Energy prices are report before taxes.
Source: own assumptions based on European Commission's recommended parameters for GHG projections in 2025.

The second important input is the future trend in energy intensity. As Figure 5 illustrates, energy consumption has stagnated over the past two decades ("decoupling of GDP and emissions"), which is attributed to decreases in production's energy intensity. The future path of energy intensity was inferred from the energy consumption projections in Krutzler et al. (2023), replicating a slight absolute decrease in long-run energy consumption.[24]

Table 3 presents the simulated effects of different assumptions on real GDP, emissions, the share of renewables, and energy intensity, all reported as deviations from the baseline. It compares various CO_2 price scenarios: using the WAM price trajectory from Table 2, keeping the national CO_2 tax/ETS2 price constant after 2025, and eliminating all CO_2 prices after 2025. The latter scenario allows for comparing the model's sensitivity to CO_2 price shocks with other Austria-specific simulations. Reiter (2024) simulates a CO_2 price increase from 0 to 140 euros per Mt using the ATMOD model, resulting in a 1.3% GDP loss and a 30% reduction in CO_2e emissions (approximately 20 Mt of CO_2e based on the current total emissions). A counterfactual simulation with the MIO-ES model, thankfully provided by UBA, shows a CO_2 reduction of 6 Mt and a 0.1% decrease in real GDP when increasing the CO_2 price from 0 to 100 euros per Mt. Comparing the FISK baseline results (2040: 100 euros/Mt) with the no-CO_2-price scenario suggests that the FISK simulations, with a reduction in CO_2e of close to 9 Mt and a negative impact on GDP by nearly 1%, fall between the ATMOD and MIO-ES results. Table 3 also shows the results of replicating the WAM scenario from the NECP. Next to assuming higher CO_2 prices, this includes additional measures that affect the relative efficiency of renewable energy (see the next subsection and Section 3.3).

Table 3: Selected Results for Different CO_2 Price Scenarios

deviation from FISK-FSR 2025 baseline	GDP (in %)			CO_2e (in Mt)			Share renewable (in pp)			Energy intensity (in %)		
	2030	2040	2050	2030	2040	2050	2030	2040	2050	2030	2040	2050
Higher CO_2 prices (from WAM)	-0.4	-1.0	-1.2	-0.7	-9.1	-10.8	0.4	7.0	8.9	0.0	-4.7	-3.9
Constant national tax/ESR CO_2 price after 2025	0.2	0.4	0.5	0.6	2.3	4.5	-0.3	-1.5	-3.0	0.2	1.1	2.1
No CO_2 price after 2025	0.5	0.9	1.2	6.4	9.3	14.9	-3.6	-5.6	-9.1	4.2	5.3	8.1
WAM scenario	0.0	-0.3	-0.8	-7.9	-17.2	-23.5	6.4	16.2	20.3	-1.8	-2.4	-5.1

Source: own calculations.

[24] As the WEM scenario in Krutzler et al. (2023) does not coincide with the FISK-FSR 2025 baseline assumptions, we first fitted the model to the WEM projections in Krutzler et al. (2023) by simulating a counterfactual scenario without national CO_2 tax and ETS2 in place, and fixing the path for energy intensity and shifts in the composition of energy consumption. In a next step, additional measures such as the national CO_2 tax and ETS2 were activated, which then resulted in the FISK-FSR 2025 baseline. This explains why total emissions in Figure 8 are lower in the FISK-FSR 2025 baseline than in WEM.

2.2.2. Climate Investments and Other Measures

Climate-related public investments, subsidies, and transfers directly impact the primary balance, making it essential to consider them when analyzing long-term public finances. However, establishing clear criteria for defining climate-related budget items is challenging. This report follows Parliamentary Budget Office (2025) and uses the Federal Funding Report ("Förderungsbericht des Bundes") as its primary source, supplementing it with additional budget items like the Climate Bonus and the costs associated with the Climate Ticket. Estimating the climate-related share of public investments is even more complex, which is why climate-related investments are not reported in levels but only as deviations from the baseline when simulating additional climate-related investments. Based on the described data definition, climate-related subsidies and transfers totaled to 3.3 billion euros or 0.7% of GDP in 2023, having steadily increased since 2001 (0.1% of GDP). The baseline projection adheres to the no-policy-change assumption, and since there are no significant programs that have been enacted but are set to start in the next decade, the projection of expenditures for climate-related subsidies, transfers, and investments (as part of total public investments) is essentially an extrapolation from the latest FISK medium-term forecast (Fiscal Advisory Council, 2024). Consequently, the FISK-FSR baseline includes only enacted measures and not potentially required ones, such as those needed to meet international emission targets. In the sensitivity section, this is addressed by simulating a scenario with additional measures[25] and lower emissions based on the WAM scenario from the NECP. The costs of these additional measures are derived from the NECP estimations and set at approximately 0.5% of GDP annually for nine years, then linearly phased out over the following five years.

2.2.3. Damages to Private and Public Assets

It is a well-established result that anthropogenic climate change is associated with an increased likelihood of extreme weather events (IPCC, 2023). Yet, the estimation of expected future damages has proven difficult due to the difficulty of forecasting the occurrence of extreme climatic events. For this reason, there are hardly any robust country-specific projections of future damages to public and private assets (APCC, 2014). A notable exception in this regard is the PESETA IV project of the Joint Research Centre of the European Commission (Feyen et al., 2020). Within this project, the JRC attempts to estimate the country-specific implications of global warming in different impact categories. In particular, separate biophysical models are used to quantify how the projected changes in climate variables affect the incidence of heat and cold waves, droughts, windstorms, river flooding, coastal flooding, and wildfires. Furthermore, the effect on agricultural crop yields, water resources, energy supply, habitat suitability, and forest ecosystems is also assessed. For a subset of the impact dimensions, the insights of the biophysical models are used to project the economic losses for different levels of global warming based on an in-depth assessment of the national exposure to extreme events. The projected evolution of damages in each impact category is then used to compute aggregated country- and region-specific factors that represent the increase in the expected value of damages due to extreme climatic events vis-à-vis the reference period 1981-2010. For Austria, the PESETA IV project identified river floods, droughts, and windstorms as relevant impact dimensions (Cammalleri et al., 2020; Dottori et al., 2020; Spinoni et al., 2019).

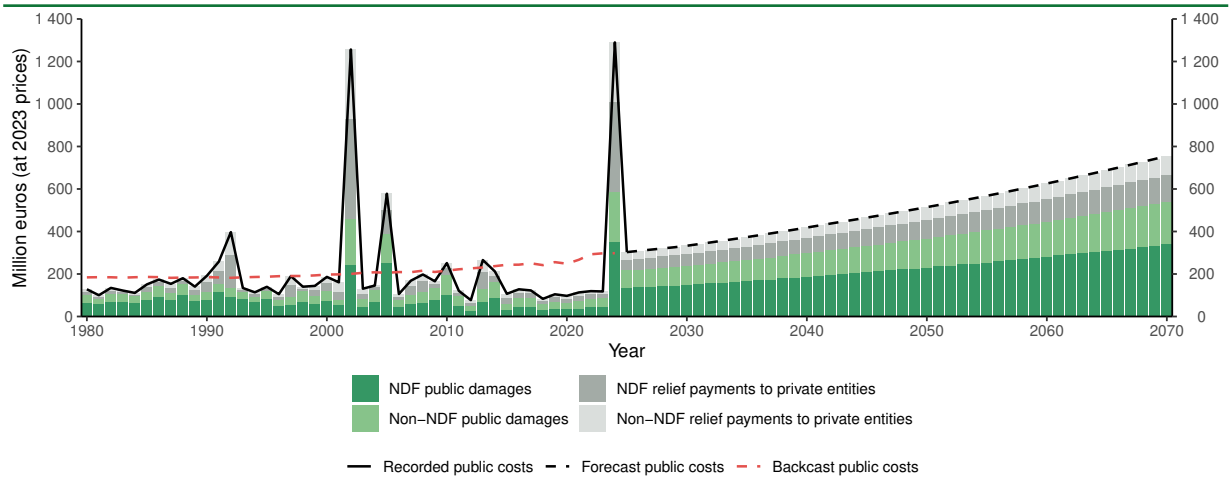
Instead of computing how these factors evolve over time as temperature rises (depending on the climate scenario used), the PESETA IV project reports these factors only for the hypothetical points in time, when a 1.5, 2.0, and 3.0°C increase in global average temperature since pre-industrial times is reached. We therefore interpolated the factors based on the evolution of model-averaged mean temperature in Austria from the IPCC SSP-RCP climate scenarios from the World Bank Climate Knowledge Portal. This allowed us to deduce a time series that represents the evolution of the expected value of damages in

[25] The key measures are: additional funds for domestic environmental support (UFI), renovation offensive, clean heating for all program, industrial transformation, transport service contracts (VDV), and the ÖBB framework plan.

Austria as compared with the reference period 1981-2010.[26] The mean surface temperature in Austria was 6.4°C during that period. According to the chosen default scenario SSP2-4.5 ("Middle of the Road") an increase to 7.7°C is expected in the 2030s and to 8.8°C in the 2060s. SSP1-2.6 projects a lower increase (to 8.3°C in the 2060s), SSP3-7.0 and SSP5-8.5 project higher increases (to 9.2 and 9.9°C, respectively).[27]

Existing sources of data on economic losses from climate-related events provide estimates on the insured losses based on data from reinsurance providers and report estimates on total losses to all agents in the economy.[28] However, these data sources do not allow a disaggregation of the data with respect to the economic agents bearing the costs, specifically to determine the share of the public sector. For this reason, we resort to data on expenses for damage repairs from the Austrian Natural Disaster Fund (NDF, "Katastrophenfonds"). The NDF is a government-established financial reserve designed to provide funds for preventive measures to mitigate the potential effects of natural disasters, as well as funds for disaster relief and reconstruction efforts in the event of a disaster. Furthermore, it partially reimburses regional authorities for costs resulting from grants and subsidies provided to private individuals for the repair of damages to their property.

Figure 7: Projected Public Expenses for Damage Repairs



Sources: Natural Disaster Funds, own calculations.

We used historical data on the NDF expenditures related to the repair of assets to project public expenditures into the future using the interpolated PESETA IV factors. In doing so, we assumed that the share of costs to regional and local authorities reimbursed by the fund remains constant.[29] The resulting projec-

[26] The PESETA IV project computes separate projections for two socioeconomic scenarios. One scenario operates under the assumption that the population and the structure of the economy remain as they are today. The second scenario uses the projected socioeconomic conditions in 2100 that would come about if the population and economy evolved as projected in the ECFIN Ageing Report. We compute the year-specific factors as the weighted average of the factors for the two extreme scenarios considered in the PESETA IV project.

[27] The other Shared Socioeconomic Pathways (SSPs) as defined in the IPCC's Sixth Assessment Report (IPCC, 2023) are characterized as: SSP1 – Sustainability ("Taking the Green Road"), SSP3 – Regional Rivalry ("A Rocky Road"), SSP5 – Fossil-fueled Development ("Taking the Highway").

[28] Examples are Risklayer's CATDAT data, Munich Re's NatCatSERVICE, and CRED's (Centre for Research on the Epidemiology of Disasters) EM-DAT data.

[29] Furthermore, we used the PESETA factors to compute a backcast of public expenses related to natural disasters and adjust the future projections of damage costs by a factor derived from the comparison of realized and projected historical expenses.

tions for the IPCC climate scenario SSP2-4.5 are shown in Figure 7. Our results indicate that the expected public costs resulting from extreme weather events will increase by 2070 compared to the reference period 1980 to 2010 by a factor of 3.5 in real terms. Expressed as a share of GDP, this implies an increase of about 36%. These results are consistent with those obtained by Prettenthaler et al. (2015) with respect to the projected evolution of damages from riverine flooding for a mid-range climate scenario by means of the HORA-based method.[30] While the HORA-based analysis of Prettenthaler et al. (2015) projects an increase in damages by a factor of 2.0 for the period 2036-2065 vis-à-vis the reference period 1981-2010, we derived factors of 2.0 for 2040 and 2.4 for 2050, which are comparable in size.

While the projected increase is sizable, the variation in the increase, depending on which IPCC scenario is used, is rather modest (Table 4). The damage estimates are linked as follows to the FISK OLG model. Private damages are translated into higher depreciation of the private capital stock. For damages to the public capital stock, it is assumed that they are compensated in the same period by higher public investment. Note that the additional public investment is unproductive, as it just replaces losses to the public capital stock. Additional public costs occur due to damage relief payments modeled as transfers to the private sector. As a closing remark, it has to be pointed out that damage costs were treated in a narrow sense, focusing on direct costs from natural disasters. Effects of more fundamental shifts in the sectoral structure of the economy due to climate change, which are not directly caused by natural disasters (e.g., effects on winter tourism or on agricultural productivity), are even more challenging to incorporate and had to be excluded from the analysis.

Table 4: Projected Public and Private Expenses for Damage Repairs for Different IPPC Scenarios

in million euros (at 2023 prices)	SSP1-2.6						SSP2-4.5					
	2020	2030	2040	2050	2060	2070	2020	2030	2040	2050	2060	2070
Public damages	65	231	289	354	428	511	65	238	299	368	448	540
covered by NDF	34	145	182	223	269	322	34	150	188	232	282	340
not covered by NDF	30	86	107	131	159	189	30	88	111	136	166	200
Private damages	166	583	729	893	1 081	1 290	166	601	756	930	1 131	1 364
compensated by NDF	19	55	68	84	101	121	19	56	71	87	106	128
compensated by other public funds	13	37	47	57	69	82	13	38	48	59	72	87
uncompensated	133	491	614	753	911	1 087	133	507	637	783	953	1 150
Public costs	97	323	403	495	598	714	97	333	418	515	626	755
	SSP3-7.0						SSP5-8.5					
	2020	2030	2040	2050	2060	2070	2020	2030	2040	2050	2060	2070
Public damages	65	235	301	377	468	579	65	242	308	386	484	605
covered by NDF	34	148	190	238	295	364	34	152	194	243	304	380
not covered by NDF	30	87	112	140	174	215	30	90	114	143	179	224
Private damages	166	593	761	953	1 182	1 462	166	611	777	974	1 221	1 527
compensated by NDF	19	55	71	89	111	137	19	57	73	91	114	143
compensated by other public funds	13	38	49	61	76	93	13	39	50	62	78	98
uncompensated	133	500	641	803	996	1 232	133	515	655	821	1 029	1 286
Public costs	97	328	421	528	654	809	97	338	430	539	676	845

Source: own calculations.

2.2.4. Costs of Non-Compliance with European Effort Sharing Regulation Targets

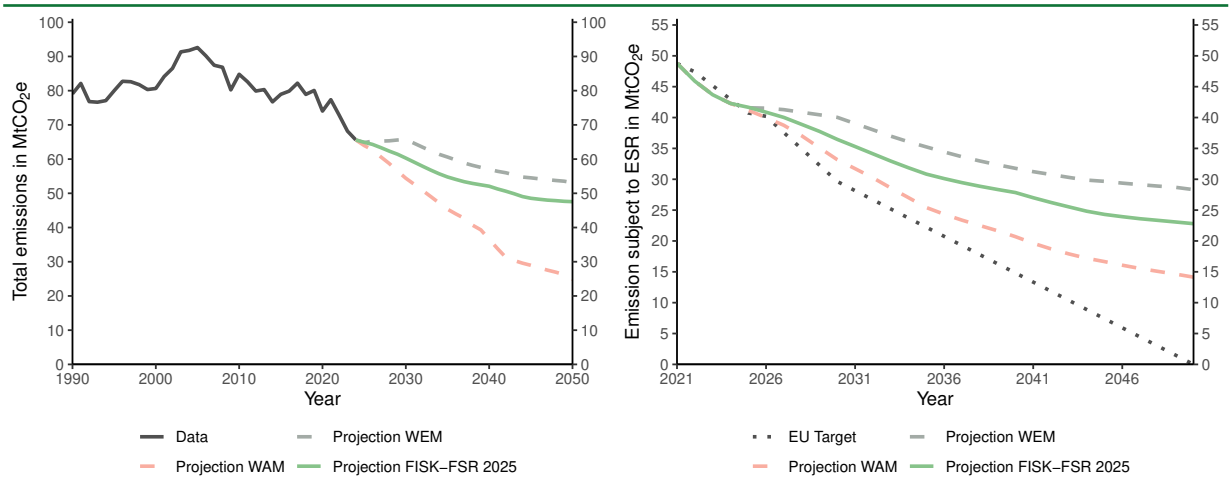
As part of its conclusions on October 23 and 24, 2014, the European Council stated that the European Union's emissions reduction targets, resulting from the Paris Agreement should be met via reductions of emissions covered by the Emissions Trading System (EU-ETS) and reductions in non-ETS sectors. Sectors

[30] This method by Prettenthaler and Albrecher (2009) combines a projection of the distribution of extreme precipitation amounts with time-varying risk maps indicating the estimated number of buildings potentially affected by floods in the future.

not covered by the ETS include domestic transport (excluding aviation), buildings, agriculture, small industry and waste. To operationalize the targets for non-ETS emissions, the Effort Sharing Regulation (ESR)[31] sets out national reduction paths with respect to CO_2 emissions. The regulation was initially adopted in 2018 and amended in 2023[32] to account for the more stringent goals resulting from the „Fit for 55" legislation. Pursuant to Regulation (EU) 2018/842, EU member states[33] receive a certain amount of emissions allocations in tonnes of CO_2e for each year between 2021 and 2030. The amount of emissions allocations decreases annually, with the decrease depending on the national reduction of non-ETS emissions to be achieved by 2030.

In general, the ESR requires each EU member state to comply with the emissions allocation for each year individually. However, member states are allowed to use several flexibilities such that temporary deviations do not immediately trigger infringement proceedings. In particular, EU member states are allowed to bank surpluses accumulated in years where emissions are lower than their annual allocations and use them for years in which the realized emissions exceed their allocation. Similarly, states can borrow allocations from subsequent periods to cover current deviations. Furthermore, states may use the net removal of CO_2 through carbon sinks to meet their ESR targets, if the requirements of the LULUCF (land use, land-use change, and forestry) regulation are exceeded[34]. Finally, some states were given the possibility to use a limited amount of ETS allowances (2 percent of the ESR emissions in 2005 in the case of Austria) to offset violations of the annual ESR targets. Austria has notified the European Commission that it intends to use this flexibility to its full extent (Parliamentary Budget Office, 2021).

Figure 8: Total Emissions and Emissions According to Effort Sharing Regulation (ESR)



Notes: WEM and WAM projection linked to the last available data point (preliminary estimate for 2024). EU target path after 2030 based on the net-zero goal for 2050.
Sources: Environment Agency Austria, Regulation (EU) 2023/857, Commission Impending Decision (EU) 2023/1319, own assumptions, and the FISK OLG Model.

The right panel of Figure 8 shows the realized ESR emissions for Austria, the projection of the Austrian ESR emissions according to the NECP and the FISK FSR as well as the Austrian reduction path of emissions allocations according to Commission Implementing Decision (EU) 2023/1319. It should be mentioned at

31 Regulation (EU) 2018/842 and Commission Implementing Decision (EU) 2020/2126.

32 Regulation (EU) 2023/857 and Commission Implementing Decision (EU) 2023/1319.

33 In addition to all EU member states, Iceland and Norway have agreed to implement the Effort Sharing Regulation as well.

34 Regulation (EU) 2018/841.

this point that the exact evolution of emissions allocations between 2026 and 2029 cannot be quantified yet, even though the target for 2030 is fixed.[35] This is because the trajectory will be determined based on the average greenhouse gas emissions between 2021 and 2023.

Compliance with the ESR is assessed for each year separately. When the compliance check for a given year is conducted, each member state has to report how it managed to comply with the corresponding annual emissions allocation. If the realized ESR emissions exceed the allocation, the member state can utilize the flexibilities to adhere to the target. If the flexibilities do not suffice for this purpose, member states can resort to buying emissions allocations from other states covered by the ESR. If, after exhausting these options, a deviation between the realized emissions and the allocation remains, a factor of 1.08 is applied to the deviation. This scaled-up deviation is then subtracted from the emissions allocation for the subsequent year. In addition, member states have to submit a plan to the European Commission outlining measures to facilitate compliance with the regulation if they fail to compensate for deviations from the emissions allocations by means of the flexibilities or purchases before the end of the corresponding compliance period. If the member states fail to submit, or if the Commission finds the submission inadequate, it may initiate infringement proceedings.

Comprehensive compliance checks are not conducted annually but only twice: for the period 2021-2025 in 2027 and for the period 2026-2030 in 2032. Hence, member states can theoretically wait until 2027 to decide upon the use of the flexibilities. Equally, member states can delay required purchases of emissions allocations from other member states until this point. This aspect of the regulation entails additional sources of uncertainty with respect to the ex-ante quantification of potential costs resulting from non-compliance. Attempts to estimate the potential fiscal costs ex ante are therefore subject to the following sources of uncertainty:

- Given the uncertainty about the evolution of e.g., energy prices and policy measures, the projections of GHG emissions are subject to uncertainty themselves.
- The price of emissions allocations will depend on the supply and demand of allocations which in turn will be determined by the evolution of GHG emissions in each state covered by the Effort Sharing Regulation.
- The timing of purchases of emissions allocations is chosen by policymakers. The strategies of policymakers will also affect the price of emissions allocations. If all member states delayed purchases as long as possible, price spikes before dates of compliance checks may occur.
- The sanctions resulting from infringement proceedings in case of non-adherence to the regulation are not predetermined. Hence, it may occur that the financial penalties resulting from infringement proceedings turn out to be less costly than the purchase of sufficient emissions allocations to meet the national targets.
- In light of the aim of the European Commission to achieve climate neutrality by 2050, a prolongation of the Effort Sharing Regulation beyond 2030 is likely.[36] Currently, however, no legal framework with respect to Effort Sharing targets between 2031-2050 exists.

The following assumptions were made for the analysis. First, the ETS1 price is used as a proxy for the price of purchasing allowances. Second, we used a linear path to the EU's target of zero emissions in 2050 and assume that the ESR mechanism will be extended each decade and also continue to be in place after 2050.

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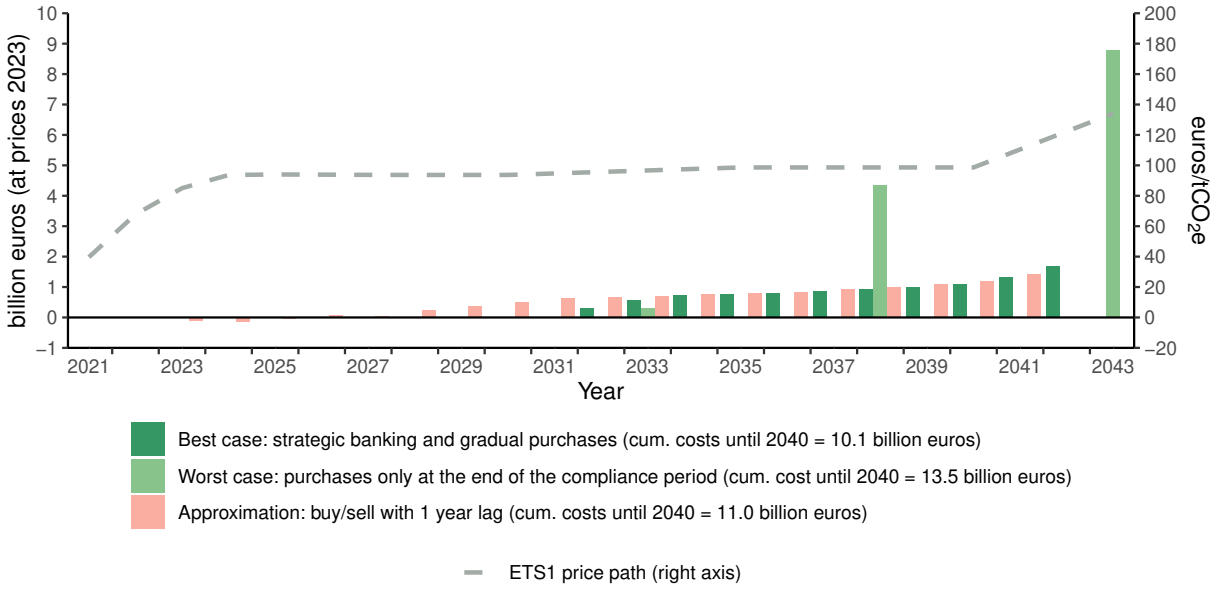
35 For Austria, the target for 2030 is a reduction of greenhouse gas emissions by 52 percent as compared with 2005.

36 The European Commission announced in February 2024 that it aims to reduce the Union's greenhouse gas emissions by 90 percent relative 1990 until 2040.

As for the mentioned considerations about purchasing strategies, we ran the following two examples with all described flexibilities and banking options activated. The best case and the worst case simulations in Figure 9 represent the two opposite extreme cases. The best case assumes that purchases occur immediately once the realized emissions of any given year become public. In the worst case simulation, deviations are not compensated via purchases of emissions allocations before the end of the respective compliance period. Hence, the deviation of each year is scaled by 1.08, and subtracted from the allocation of the subsequent year, and infringement proceedings are initiated by the European Commission. In the absence of information on the expected financial consequences of infringement proceedings, penalties amounting to the hypothetical costs of purchasing emissions allocations for the cumulative deviation at the end of the compliance period are assumed. The costs resulting from these two scenarios are shown in Figure 9.[37]

Figure 9: Effort Sharing Regulation: Fiscal Impact Conditional on Purchasing Strategy



Sources: Regulation (EU) 2023/857, Commission Impending Decision (EU) 2023/1319, own calculations.

A detailed modeling of the interactions of the different aspects of the regulations, as well as of the optimal purchasing strategies of policymakers, can be included in a large-scale macroeconomic model. The FISK OLG model therefore uses a simplified assumption that is meant to provide an approximation of the expected costs. In particular, the approximation assumes that Austria neither makes use of the option to bank, nor of the option to borrow emissions allocations. Instead, excess allocations are sold once the realized emissions for the year under consideration become public (i.e., with a one-year lag), and, similarly, excess emissions are compensated via immediate purchases. This simple purchasing rule also helps to deal with different scenarios with respect to CO_2 emissions. In particular, it makes it possible to endogenously determine the expected costs resulting from the ESR based on the CO_2 emissions path, which is itself determined endogenously in the model. As visible from Figure 9, the cost estimate resulting from this approximation lies between those of the two extreme scenarios.

[37] It should be noted that the relative costs of these scenarios depend crucially on the price path of emissions allocations. If prices were to spike at the end of each compliance period, the costs resulting from the worst case would be substantially higher than those of the best case.

The simulation in Figure 9 indicates that the costs resulting from the application of the Effort Sharing Regulation for the period 2021-2030 lead to expected costs of approximately 1.6 billion euros. Under the assumption of a continuation of the Effort Sharing Regulation[38], the cost estimates for the period 2031-2040 range between 10.1 and 13.5 billion euros. Comparing these figures to other estimates for Austria is not straightforward. First of all, this is due to the related literature only reporting estimates for the period until 2030. Secondly, the reported estimates are only limitedly comparable because they are partially based on the initial version of the Effort Sharing Regulation before its adaptation via the "Fit for 55" legislation, as well as outdated GHG projections (Steininger et al., 2020; Austrian Court of Audit, 2021). The most recent, and therefore most comparable, estimates are those of Schiman-Vukan (2022) and Parliamentary Budget Office (2021). The estimates by Schiman-Vukan (2022) are based on the emissions projections by Gugele et al. (2022). Based on an assumed increase in the price of emissions allocations from 55 euros per tonne of CO_2 e in 2025 to 83 euros in 2030, Schiman-Vukan (2022) reports a cumulated cost estimate of 4.7 billion euros for the period until 2030. Assuming a price of 50 euros per tonne of CO_2e, Parliamentary Budget Office (2021) report an estimate of approximately 4 billion euros based on GHG projections by the Environment Agency Austria (UBA) from 2021. However, it has to be noted that neither the GHG projections used by Schiman-Vukan (2022) nor those used by Parliamentary Budget Office (2021) reflect the substantial reductions in emissions in 2022 and 2023. Table 5 gives an overview of the effect on non-compliance costs of mixing different assumptions related to the price and the deviation in emissions from the target.

Table 5: ESR Non-Compliance Costs for Different Emission and Price Scenarios

in billion euros (at prices 2023)	Cost of non-compliance per Mt = ETS 1 (WEM)						Cost of non-compliance per Mt = ETS 1 (WAM)					
emission scenarios	2030	2040	2050	2021-2030	2031-2040	2041-2050	2030	2040	2050	2021-2030	2031-2040	2041-2050
WEM	1.0	1.9	5.5	2.5	13.5	38.2	1.1	5.3	13.9	2.6	27.7	100.6
FISK-FSR 2025 baseline	0.6	1.4	4.4	1.6	9.5	29.7	0.7	4.1	11.2	1.6	19.8	78.2
FISK-FSR 2025 with WAM prices	0.6	0.9	3.4	1.5	6.9	21.1	0.7	2.6	8.6	1.5	13.8	55.6
WAM	0.3	0.6	2.7	0.6	4.1	16.7	0.4	1.8	6.9	0.6	8.5	43.8

Note: WEM and WAM linked to latest available data point (preliminary estimate for 2024).
Source: own calculations.

2.2.5. Non-Modeled Channels

There are additional channels through which climate change could affect a country's long-term public finances, which were not included in the quantitative analysis of this report. Köppl and Schratzenstaller (2024) provide a recent overview for Austria. In addition, co-benefits from climate protection, such as a decrease in road accidents, were not explicitly taken into account. The remainder of this section briefly discusses these channels.

Damages to Health and Labor

Extreme temperatures represent shocks to the human body. The resulting physiological responses and consequences are largely understood by the epidemiological literature (Basu and Samet, 2002; Li et al., 2015; Van Daalen et al., 2024; White, 2017). Substantially less research has been devoted to quantifying the associated economic implications of an increased incidence of extreme temperatures as a result of climate change. Temperature extremes may entail economic costs in at least four ways:

- Additional health care expenditures due to increased morbidity
- Reduction in overall welfare due to reduced quality-adjusted life years resulting from increased morbidity and mortality associated with temperature extremes

[38] The ESR currently stipulates a reduction of non-ETS emissions by 48 percent vis-à-vis 2005 until 2030. Here, it is assumed that the Effort Sharing Regulation for the period 2031-2040 intends to halve the distance to the target of zero net emissions to be achieved by 2050. This translates to a non-ETS emissions target for 2040 of -74 percent as compared with 2005.

- Lost labor due to increased morbidity and mortality
- Reduced labor productivity due to heat exposure

Existing studies find significantly positive short-term effects of extreme heat on hospitalizations and mortality (Jageler et al., 2024; Karlsson and Ziebarth, 2018; Naumann et al., 2020; Rizmie et al., 2022; Moshammer et al., 2006). Quantitatively large effects are, however, predominantly reported for elderly people. While the effect on hospitalizations reported by Karlsson and Ziebarth (2018), for example, is significant across all age groups, it is particularly pronounced for elderly people. This pattern is even more striking with respect to mortality. According to the results of Karlsson and Ziebarth (2018), it is primarily the mortality rate among people aged 75 and above that is strongly affected by extreme temperatures.

When attempting to gauge the economic costs of the human health impact of climate change, it is crucial to move beyond the instantaneous effect of extreme temperatures. This is because there is strong empirical support for the so-called harvesting hypothesis (Braga et al., 2001; Deschênes and Moretti, 2009; Hajat et al., 2005; Stafoggia et al., 2009). This hypothesis suggests that extreme temperatures primarily cause a temporal shift in morbidity and mortality. To be more precise, this hypothesis postulates that individuals in poor health, who would have been hospitalized or would have died in the near future, are merely admitted to the hospital sooner due to temperature extremes. If the harvesting effect is strong, as the results of Karlsson and Ziebarth (2018) suggest, the effect of a higher frequency of hot days on health care spending would be relatively small.[39] In light of the documented age gradient of hospitalizations due to heat, the effect of extreme heat on the overall supply of labor is most likely also muted.[40] In addition, results by Chung et al. (2015); Rizmie et al. (2022); Son et al. (2014), and White (2017) indicate that extremely cold days, which are projected to decrease due to climate change, are also associated with increased morbidity and mortality. Furthermore, the results of Jageler et al. (2024) suggest that the effect of extreme temperatures is dependent on the level of adaptation of the local population.[41] Based on this insight, it is to be expected that the effects of extreme temperatures will decline over time as the population adapts to the evolving climatic conditions. All in all, these results indicate that the fiscal costs arising from increased health care usage induced by climate change are not an overwhelming threat to the sustainability of public finances in Austria.

International Climate Financing and Climate-Change-Induced Migration

As developing countries are particularly affected by climate change and typically characterized by lower adaptation capacities, developed countries, such as Austria, have have pledged to contribute to international climate financing. As the exact level of funding is under the discretion of the government, the report did not include increasing spending paths given the no-policy-change assumption. Instead, spending on international climate support, as part of a non-explicitly-modeled residual budget item, is projected as constant in terms of GDP. Additional costs from climate-induced migration to Austria are another potential channel that might have sizable effects on the government budget. However, the involved uncertainties are too high, and a quantification was not attempted in this report.

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39 Haas et al. (2015) attempted to project the impact of climate-change-induced heat waves on mortality in Austria based on the results of Moshammer et al. (2006). However, they did not account for the potentially important harvesting effect by using the instantaneous effect on mortality to project the evolution of heat-induced deaths. This is particularly questionable in light of the assumptions made with respect to the remaining life expectancy of diseased individuals underlying the projection of years of life lost.

40 While labor productivity is projected to decline in many developing countries due to heat exposure, the results of UNDP (2016) suggest that this channel is not particularly relevant for Central European countries.

41 Similarly, the results of Kovats and Jendritzky (2006) indicate that the ambient temperature associated with the lowest mortality is higher in regions with higher average temperatures.

Stranded Assets of the Public Sector and Financing Aspects

Another budgetary risk that cannot be quantified stems from stranded public assets. These costs may arise if fossil fuel industries or high-carbon infrastructure become obsolete, losing value and creating financial risks for the government—either directly, as an owner, or indirectly, through pressure to intervene with bailouts. Another potential channel is the effect that unmitigated climate risks might have on sovereign credit ratings and financing costs. Klusak et al. (2023) provide country-specific estimates on additional financing costs depending on different IPCC scenarios. For Austria, the additional yearly costs are estimated to be 75 (RCP 2.6) to 500 million US dollars (RCP 8.5) for the year 2100.

3. LONG-RUN PROJECTIONS WITH THE FISK OLG MODEL

The FISK sustainability report uses the concept of fiscal space, or the fiscal gap (if negative), as a central metric for assessing fiscal sustainability. The fiscal gap is calculated for each year within the forecast horizon. Calculating the fiscal space generally requires two sub-analyses. First, a projection of the primary balance-to-GDP ratio under the no-policy-change assumption is necessary. Second, this must be combined with a projection of the interest-growth differential. Both analyses are carried out in an integrated manner using the FISK OLG model. This model was specifically developed for Austria and enables a detailed representation tailored to the country.

Existing sustainability analyses are often characterized by a sequential arrangement of small, partial analyses or modules. For example, population projections feed into macroeconomic projections, which, in turn, determine fiscal projections. In contrast, the FISK OLG model provides an integrated analytical framework that includes feedback loops between macroeconomic and fiscal analyses. Furthermore, the approach differs in its microeconomic foundation: aggregate figures for the entire government sector are derived from the aggregation of decisions made by heterogeneous, forward-looking agents. This allows for various analytical perspectives and the disaggregation of projection results across different levels of aggregation (e.g., cross-sectional versus life-cycle perspectives).

The base year of the projection is 2023. Identical to the current 2024 Ageing Report (European Commission, 2024b), the projection horizon ends in 2070. Section 3.1 describes the model, data, and assumptions of the FISK analysis before presenting the baseline scenario projection results in the following section. Section 3.3 discusses various sensitivity scenarios.

3.1. Data, Method, and Assumptions

A brief summary of the FISK OLG model is presented in Box 2. Schuster (2025) contains an extensive model documentation. The most important mechanisms and assumptions of the model for long-term projections are outlined in subsequent sections while presenting the results. Unlike starting in a recent base year, interpreted as a "steady state," the model was dynamically fitted to historical data. This approach is advantageous, especially when historical data for variables influencing future developments are unavailable. An example includes historical employment and earnings records, crucial for calculating future pension entitlements. The OLG model enables macro-consistent simulation of these historical employment trajectories.

Table 7: Summary of the Key Exogenous Assumptions

	2025	2030	2040	2050	2060	2070
Population (in million)	9.2	9.4	9.6	9.8	9.9	10.0
Number 65+/number 20-64 (in %)	33.9	40.0	48.4	52.0	55.2	55.8
Share of population with tertiary education (in %)	24.8	26.4	29.4	32.3	34.8	36.9
TFP growth rate (yearly in %)	0.6	0.7	0.8	0.8	0.7	0.7
10y-market rate for government debt (in %)	2.7	3.0	3.1	3.3	3.8	4.0

Notes: TFP growth follows from the assumptions on labor productivity.
Source: own assumptions.

Apart from historical data, the model relies on three fundamental, exogenous, and time-varying factors within the projection horizon[42]: demography and education, technological progress and the market in-

[42] Technically, the path of energy intensity per unit of capital, derived from UBA's long-term projections, is also an exogenous, time-varying input.

Box 2: An Overview of the FISK OLG Model

The FISK-OLG model was developed with a focus on long-term fiscal analyses. Due to the relevance of demographic change in this context, great importance was placed on a detailed representation of the population structure. Individuals are distinguished by the following dimensions: age (in single years), birth year, highest attained level of education (primary, secondary, and tertiary), and saving behavior ("consumption smoothers" and "non-savers"). A combination of one characteristic from each dimension is referred to as a cell. In addition to the obvious constraints on movement between cells (e.g., individuals age exactly one year per year, no one can change their birth year, etc.), further limitations were assumed for complexity reduction and data availability reasons (e.g., the type of saving behavior and highest completed education are fixed throughout life). In the demographic module of the model, individuals are further distinguished by sex. This module includes the number of individuals per cell as well as vital rates (fertility, mortality, and net migration), which are derived from a selected population forecast to replicate it. This replication has the advantage of enabling the calculation of custom demographic scenarios. In the economic section of the model, individuals are grouped into representative unisex households based on the aforementioned dimensions. Sex-specific differences (e.g., in participation, income, statutory retirement age, etc.) are aggregated using appropriately weighted averages. Individuals younger than 15 years do not make economic decisions and are proportionally assigned to adult households based on their age and age-specific fertility rates through adjustments to household size weights. Representative households make forward-looking decisions about consumption, participation (and thus, beyond a certain age, retirement), and the number of working hours. This results in age- and education-specific profiles for working hours, income, and consumption, from which macroeconomic aggregates are calculated through cross-sectional aggregation.

The model is calculated in general equilibrium, meaning that prices are determined endogenously through the interaction of households and firms in factor and product markets. Firms make forward-looking decisions regarding investments and labor demand. Production is represented by an aggregate production function with inputs: private capital, public capital, and labor (productivity-weighted labor hours of employees and self-employed), with fundamental technological progress assumed to be exogenous. An energy consumption-CO_2 emissions sub-module can be linked bidirectionally to production. Austria is modeled as a small (semi-)open economy, meaning that the return on capital is not exogenously fixed but depends on the trade position (or the net position of the country's foreign assets). The historical trajectory of the return on capital is derived from the historical development of the current account balance. Government bonds are assumed to be imperfect substitutes for corporate securities, meaning that the interest rates on government bonds and the return on capital do not necessarily converge due to arbitrage. Under the assumption that the foreign demand for government bonds is infinitely elastic, the interest rate on government bonds can be freely chosen.

In modeling the fiscal component, great importance was placed on achieving a high level of consistency with the government accounts according to the national accounts (ESA 2010). The government influences the decisions of households and firms through taxes and transfers. Additionally, it acts as a consumer on product markets through public consumption and public investment. Most taxes were modeled proportionally, with the exception of the income tax. To capture its progressive nature, non-linear tax functions were estimated using synthetic historical income and tax distributions calculated by Reiss and Schuster (2020), which are applied in the model. Transfers to households and various functions of public consumption are modeled by age and education level, depending on data availability. Pension entitlements are derived from the applicable legal provisions and the endogenously calculated employment histories. Three pension systems are modeled simultaneously (ASVG old law, civil servant old law, and the APG pension account), which are applied proportionally to the representative households, with weights depending on the birth year of a cohort. The model thus provides a consistent, closed analytical framework that allows for a continuous interaction between macroeconomic and fiscal variables.

Box 2 (cont'd): An Overview of the FISK OLG Model

The model starts from a steady state that lies many generations in the past and is dynamically fitted to historical data (in contrast to analyses with comparable dynamic equilibrium models, which typically use a recent base year as the steady state). This approach allows for the representation of many non-stationary conditions observed in the data for the base year 2023. These include, for example, the relationship between the current age structure and current vital rates, as well as the relationship between the current primary balance and current debt levels. Furthermore, this means that future trends (e.g., population aging) are already embedded in the expectations of the agents. This approach is also useful for accounting for historical reforms that only gradually take full effect. The dynamic fit to the data is based on the information available at the end of 2024.

Table 6: Government Accounts According to ESA 2010 in the FISK OLG Model

Revenues (ESA 2010)	Expenditures (ESA 2010)
P1O Output (⇒)	P2 Intermediate consumption (✓)
D2 Indirect taxes (✓)	D1 Compensation of employees (✓)
D4 Property income (✗)	D29 Other taxes on production (pay.) (✓)
D5 Direct taxes (✓)	D3 Subsidies (✓)
D6 Social contributions (✓)	D41 Interest (✓)
D7 Other current transfers (rec.) (✗)	D62 Social benefits in cash (✓)
D91 Capital taxes (✓)	D632 Social transfers in kind (✓)
D99 Other capital transfers (rec.) (✗)	D7 Other current transfers (pay.) (part ✓, part ✗)
Other (✗)	D92 Investment grants (✓)
	D99 Other capital transfers (pay.) (✗)
	P5 Gross capital formation (✓)
	Other (✗)

Remark: ✓... explicitly modeled, ✗... fixed in % of GDP, ⇒... taken into account on the expenditure side as part of public consumption.
Source: own illustration.

Fitting the model to historic data is based on a consistent data set with sufficiently long time series, which, through concatenation, could be extended back to 1954 for most variables. The macroeconomic data was taken from the national accounts, linking data from ESA 2010, ESA 1995, and SNA 1968 (Statistics Austria, 1985) to generate long historical time series. The depiction of the government account according to ESA is implemented in the model as shown in Table 6. The majority of revenue and expenditure categories are explicitly modeled. Some categories were reclassified according to functional classification. The category "Taxes" (D2 + D5 + D91) was allocated to the tax bases of labor, capital, energy, consumption, interest income, profits, and pensions based on detailed tax data ("National Tax Lists"). Social contributions (D6) are paid on labor and pensions. "Public Consumption" (approximately P2 + D1 + D29 + D632 - P1O) was subdivided into the functions of care, health, education, and administration. Monetary transfers to households were distinguished by the functions of pensions, care, health, family, climate-related, and others. For the functional classification of expenditures, various data sources had to be considered, including the "Classification of the Functions of Government" (COFOG) for education, the "System of Health Accounts" (SHA) for health, the "European System of Integrated Social Protection Statistics" (ESSPROS) for pensions, and other monetary transfers. Some of the corresponding age-cost profiles are derived from the "National Transfer Accounts" (NTA). The categories that are not explicitly modeled are labeled as other revenues or expenditures, and are assumed to be constant in relation to GDP. Stock-flow adjustments to public debt are modeled as a separate asset without economic implications for domestic agents (by assumption, they are not held domestically and pay no interest). For a given debt-to-GDP trajectory, a budgetary instrument has to be chosen to close the model and fulfill the government's budget constraint. For the exercise of identifying adjustment requirements (fiscal space/fiscal gap), a 0-multiplier instrument is chosen (net asset transfer to/from abroad). A detailed technical model documentation is available in Schuster (2025). Box 3 summarizes the improvements in FISK OLG compared to FISK-FSR 2021.

terest rate for government debt, and political measures. The assumptions regarding these three areas are detailed below and briefly summarized in Table 7. All other structural model parameters remain constant throughout the projection horizon, after adjustments to align with the latest medium-term projections by FISK from December 2024 (with selected technical updates) and WIFO from January 2025.[43]

Box 3: Methodological Changes Compared to the FISK-FSR 2021 Report

The most extensive methodological change to the FISK OLG model is the addition of the climate module, described in Section 2.2. Besides that, several improvements have been made to the model compared to the version used in FISK-FSR 2021. The most important ones are listed below:

- The average nominal interest rate on government debt is now endogenously computed within the model (similar to Schiman-Vukan, 2022), based on the current stock of debt, the current primary balance, the current market interest rate for new debt, the average rate of last period, and a debt rollover assumption (10% of the stock of debt must be refinanced every period).
- The model makes a clear distinction between the GDP deflator and the consumer price index (CPI), with a more realistic indexation of transfers (typically lagged CPI).
- Nominal taxation of interest income has been introduced instead of real taxation.
- Stock-flow adjustments to government debt are explicitly modeled.
- The historical fit has been improved along several dimensions, most importantly: the historical development of the labor share and the historical evolution of education- and age-specific participation rates (based on the Microcensus).
- The assessment base for widow and widower pensions now incorporates old-age pension income more realistically.
- More consistent data definitions: Pension and family expenditure now exclude administrative costs (analogous to other transfers). The backcast of pension expenditure now includes wartime victim survivor pensions ("Kriegsopfer-Hinterbliebenenrente").

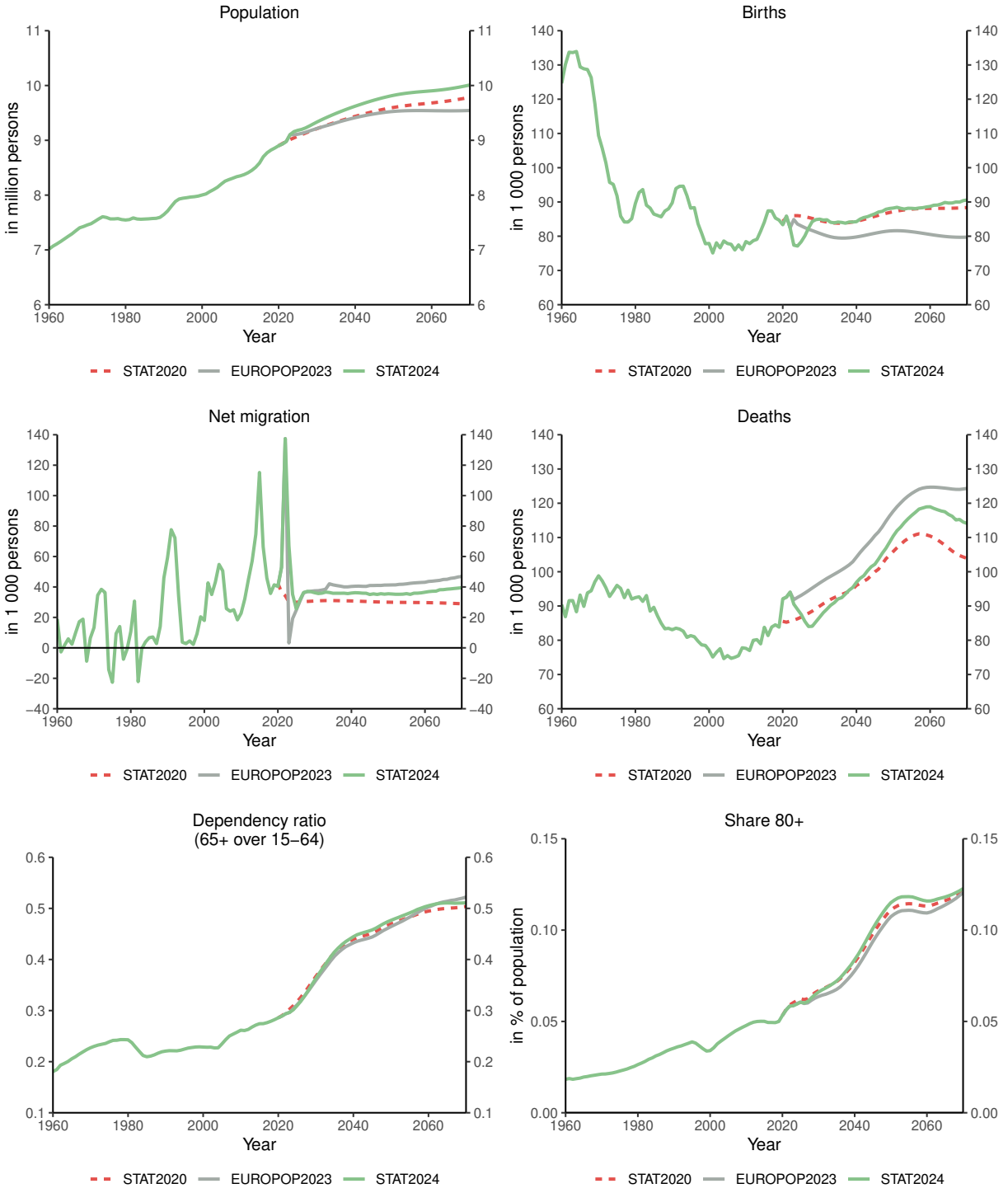
3.1.1. Demography and Educational Structure

Changes in the population's age structure are among the most critical factors affecting a country's fiscal position in the long term. This sustainability analysis is based on the latest population projection by Statistics Austria (2024), incorporated exogenously into the model. By 2070, a population increase of approximately 905 000 individuals is expected (upper-left panel of Figure 10). Of greater relevance to public finances is the dependency ratio, i.e., the ratio of individuals aged 65+ to those aged 15-64. According to Statistics Austria's most recent projection, this ratio rises from 30.0% in 2024 to 51.1% in 2070 (lower-left panel of Figure 10). The dependency ratio is purely demographic, approximating the ratio between the population's dependent and supporting segments.

Given the importance of population projections in fiscal sustainability analysis, their sensitivity, susceptibility to revision, and variability among forecasters are particularly relevant. Figure 10 illustrates signif-

[43] The key exception is an exogenous participation trend extending into the 2030s, accounting for the increase in the statutory retirement age for women.

Figure 10: Population Projections for Austria



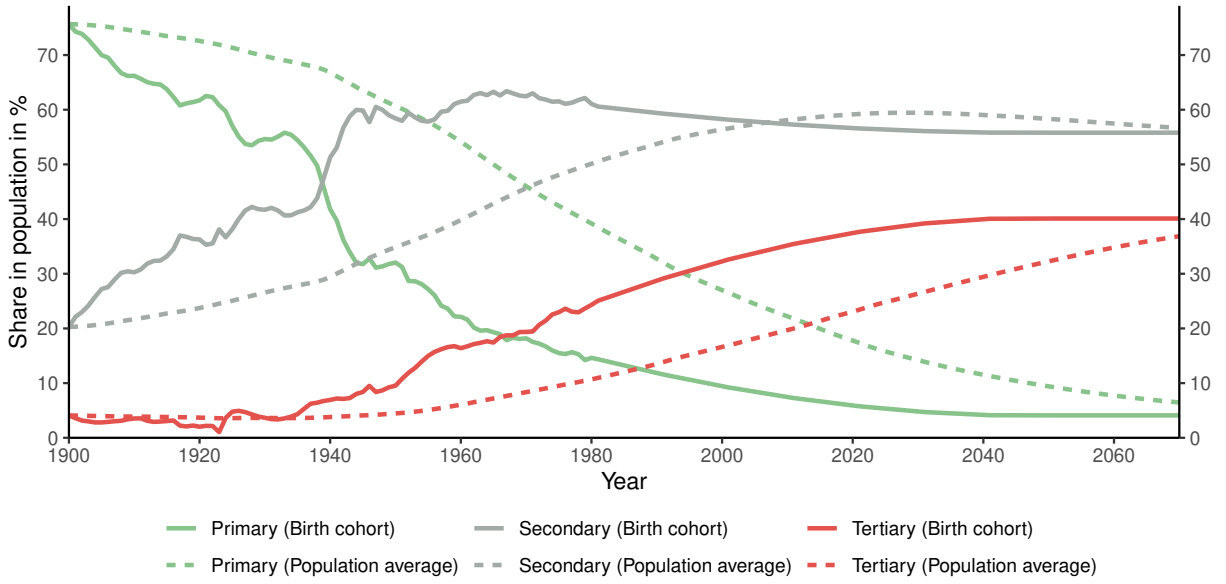
Note: Population measured at the beginning of a period.
Sources: Statistics Austria, Eurostat.

icant discrepancies in total population projections between Statistics Austria and Eurostat[44] and among different vintages. Migration forecasts typically represent the primary uncertainty factor and source of re-

[44] The Ageing Report 2024 is based on the EUROPOP2023 population projection by Eurostat.

visions. Dependency ratio forecasts appear more robust (right panel of Figure 10). Section 3.3 examines the impact of population projection variations on fiscal sustainability analyses in greater detail. In contrast to the population projection by Statistics Austria from 2020, which was used in the 2021 Fiscal Sustainability Report, total population is expected to expand more quickly due to higher net migration, while the dependency ratio and the share of 80+ are expected to develop slightly less favorably. In comparison, Eurostat's projection assumes even higher net migration but fewer births and more deaths, seemingly due to a permanent effect of the COVID-19 pandemic on mortality (center-right panel of Figure 10). Overall, Eurostat's projection of the total population size falls short of Statistics Austria's projection by close to 470 000 persons in 2070.

Figure 11: Evolution of the Educational Structure of the Austrian Population



Note: Individuals are assigned to an educational group based on the highest level of education attained during their lifetime.
Sources: for birth cohorts up to 1980, based on Wittgenstein Centre Human Capital Data Explorer; thereafter, Sánchez-Romero et al. (2024) and own calculations.

The adaptation of the OLG model to Austrian demographic data requires more than age- and year-specific population counts. Additional demographic movement data – deaths by age, births by mother's age, and net migration by age – are necessary for calculating fertility, mortality, and migration rates.[45] Missing historical movement data were derived from the population reconstruction approach employed by Sánchez-Romero et al. (2024). The population projection was extended to account for educational attainment. Unlike the OLG model, standard population projections typically do not differentiate by educational groups. However, there is a notable and increasing education-specific disparity in life expectancy (Klotz and Asamer, 2014)[46]. In the model, mortality rates were adjusted by educational group, ensuring that annual total deaths align with the population projection. The educational structure's evolution over

[45] The conditional survival probability by age is relevant, for example, for individual saving-consumption decisions. Fertility rates are needed to assign children to adults who receive the corresponding family benefits, etc.

[46] In 2010/2011, the difference in remaining life expectancy between a 35-year-old university graduate and a person of the same age with only compulsory schooling was 7 years for men and 3 years for women. The same spread is confirmed in size for the year 2022 by Statistics Austria's recent update of "Demographic Indicators." This is relevant, for example, because individuals with a university education, who receive higher pensions due to higher lifetime earnings, also draw these pensions for significantly longer. Ignoring education-specific mortality differences would, therefore, ceteris paribus, lead to an underestimation of pension expenditures.

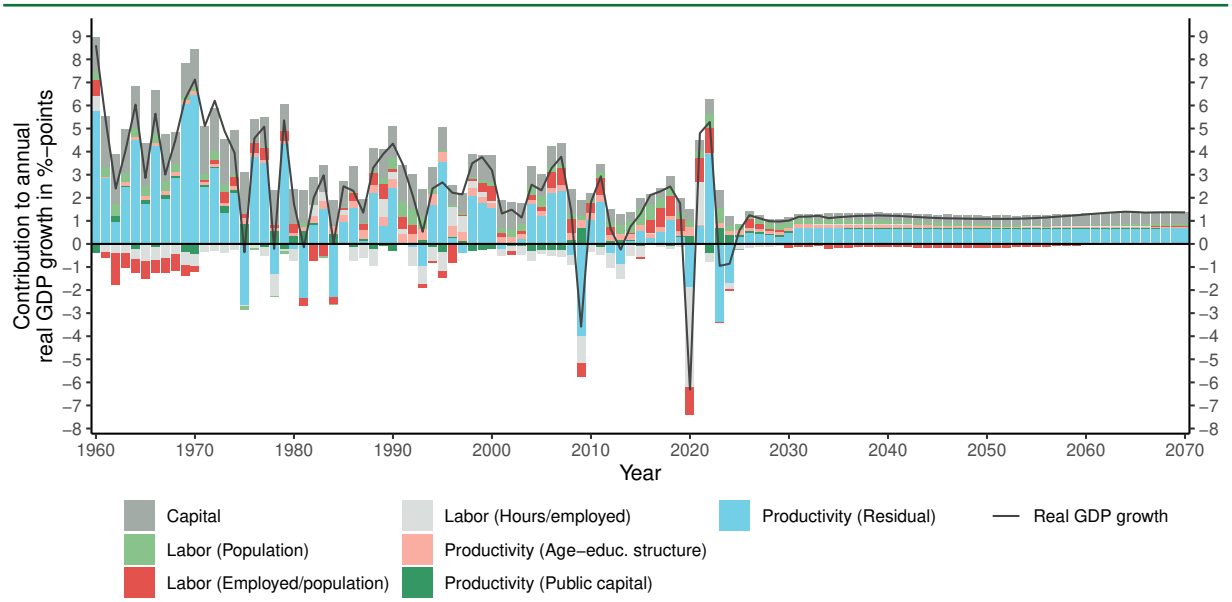
time was incorporated exogenously, using historical data from the Wittgenstein Centre (Lutz et al., 2018), while future developments follow Sánchez-Romero et al. (2024). Figure 11 shows that the shift toward tertiary education persists throughout the projection horizon and beyond, even with no further changes to the educational structure assumed for cohorts born after 2040. The proportion of tertiary-educated individuals in the total population increases from 6% in 1960 to 23% in 2020, 30% in 2040, and 37% in 2070. The analysis quantifies the productivity impact of educational structural changes, isolating it from the Solow residual (see Section 3.1.2).

The number of widows and widowers, primarily required for survivor pension projections, was forecasted using a simple Markov model with states "married," "never married," and "divorced." Marriage and divorce rates were calibrated to historical data and held constant within the projection horizon.

3.1.2. Technological Progress and Labor Market Trends

Fundamental technological progress is addressed within the framework of neoclassical growth theory, meaning it is treated as an exogenous input to the analysis. Technological progress is assumed to be labor-augmenting[47], implying that with positive technological progress, the effective volume of labor increases, even with a constant number of total hours worked. To restore the optimal capital-labor ratio, firms increase their capital stock through ongoing investments, *ceteris paribus*.

Figure 12: Decomposition of Real GDP Growth in Austria



Remark: Deviations of the sum of growth components and real GDP growth stem from the discrepancy between GDP and gross value added.
Source: FISK OLG Model.

Technological progress is measured residually, defined as the output changes not explained by variations

[47] There is a subtle difference between labor-augmenting productivity growth and the growth of labor productivity as measured as output per hour, which is best explained by assuming a simple Cobb-Douglas production function: $Y = K^{\alpha}(AH)^{1-\alpha}$. Dividing by the number of hours H and rearranging gives $\frac{Y}{H} = \left(\frac{K}{AH}\right)^{\alpha} \cdot A$. This reveals that the growth of output per hour coincides with the growth of labor-augmenting productivity (A), only if, in addition, the effective capital-labor ratio stays constant.

in the capital stock and observed working hours, commonly known as the "Solow residual." Due to the historical fit of the OLG model, the residual can be calculated directly. Furthermore, this allows the isolation[48] of two additional factors typically unexplained: (1) the macroeconomic productivity effect of the public capital stock, and (2) changes in the educational structure.[49] Between 1976 and 2023, the average growth in residual labor productivity, adjusted for these factors, was 1.0% per annum. Within the projection horizon, it is assumed to remain constant at this level starting in 2030. Until 2029, the FISK calculations rely on the updated medium-term forecast by WIFO from January 2025 (Baumgartner and Kaniovski, 2025). To ensure comparability with other analyses, residual labor productivity can be converted into total factor productivity (TFP) by re-integrating the two isolated factors. Between 2025 and 2070, the average annual TFP growth is projected to be 0.7%, while real GDP is expected to grow by 1.2% annually on average during the same period. Figure 12 illustrates the decomposition of annual GDP growth by contributing factors. Although improvements in educational structure significantly supported economic dynamics, particularly since the 1980s, their contribution is expected to weaken over the projection horizon. For deriving nominal values, an annual growth rate of 2% is assumed for the consumer price index and the GDP deflator starting in 2030 (after the WIFO medium-term forecast).[50] In comparison to FISK-FSR 2021, the level of real GDP is now assumed to be lower by close to 13% due to the recent years of recession and the downward revision of productivity growth, while the projected total number of hours worked has hardly changed. Figure 13 shows the projection of the level of real GDP compared to FISK-FSR 2021, as well as alternative productivity growth assumptions discussed in the sensitivity section.

Figure 14 shows the development of the labor market over time. The number of employed persons (both employees and self-employed) developed less dynamically, particularly in the 1980s and early 1990s, compared to the working-age population (ages 15-64). Since the turn of the millennium, however, the growth of employed persons has been significantly stronger than that of the working-age population. This trend is also expected to continue throughout the entire projection horizon. The same pattern is observed when considering the participation rate (for those aged 15-74) in Figure 15. Compared to the most recent available labor market participation forecast from Statistics Austria, the OLG model depicts a more positive development of participation rates, with a strong effect of the gradual increase in the statutory retirement age for women[51], that is more comparable to the projection used by the Austrian Pension Commission (ASK) based on the A-LMM model of WIFO and IHS (Kaniovski et al., 2024, see Figure 15). In absolute terms, an increase of around 212 000 employed persons is expected between 2023 and 2070, reaching 4.7 million. However, this represents a relative decrease, measured as a share of the total population, from 49.2% to 46.9% over the same period. In contrast to employment, hours per employed person have been characterized by a steady decline since 1960, which slowed and stagnated in the 2010s. Thereafter, hours per employed person dropped again due to the COVID-19 pandemic and have not recovered to pre-crisis levels since. In the WIFO medium-term forecast, hours per employed continue to decrease by 0.2% per year. Analogously to A-LMM, we assume that the decline will stop after the end of

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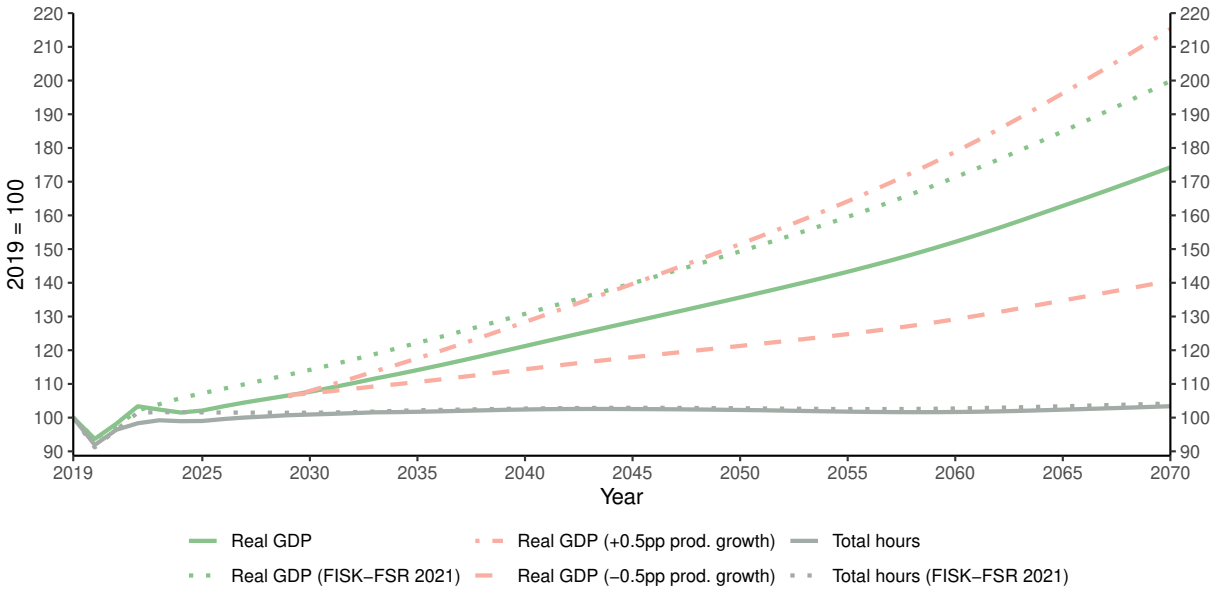
48 The production function used takes the following form: $Y_t = K^G(K_t^G) \cdot Y(K_t, A_t \cdot \vartheta_t \cdot H_t)$, where $K^G(\cdot)$ represents the contribution of the public capital stock (e.g., infrastructure), and $Y(\cdot)$ is a CES function with capital K_t and labor hours H_t as arguments. Additionally, an education structure weight ϑ_t can be quantified in advance, so that the residual labor productivity A_t must account for fewer unexplained factors compared to a typical production function of the form: $Y_t = Y(K_t, A_t \cdot H_t)$. Furthermore, it holds that each of these production functions can be transformed into a formulation with TFP_t (Total Factor Productivity): $Y_t = TFP_t \cdot Y(K_t, H_t)$.

49 Due to the insufficient data availability on the historical development of skill premiums (i.e., education-dependent differences in hourly wages), the work of the various education groups was weighted according to different productivity levels but treated as perfect substitutes.

50 For the implications of altering these assumptions, see the sensitivity check section.

51 In contrast to FISK-FSR 2021, this increase was translated into an increase in participation that is more focused on the affected age cohorts. This is also the reason why the increase in the effective retirement age was revised upward. The implicit assumption when modeling the harmonization of retirement ages is that women's labor market participation rates of the affected age groups converge to the corresponding rates for men.

Figure 13: Real GDP Projection Compared to FISK-FSR 2021 and Alternative Assumptions



Sources: Statistics Austria, WIFO, FISK OLG Model.

the 2020s (see the sensitivity section for an alternative assumptions).[52] The unemployment rate is described by age- and education-specific transition rates between employment and unemployment, which, by assumption, are kept constant after the end of WIFO's medium-term forecast. In the long term, due to the described structural shifts in age and education, a slight decrease in the unemployment rate[53] to 4.7% is projected for 2070, compared to the 2023 level of 5.7% (Figure 16). In comparison to FISK-FSR 2021, the working-age population and participation rates have been revised upward, while hours per employed and unemployment have been revised downward. In sum, the projection of total hours worked stays about the same as it was in FISK-FSR 2021.

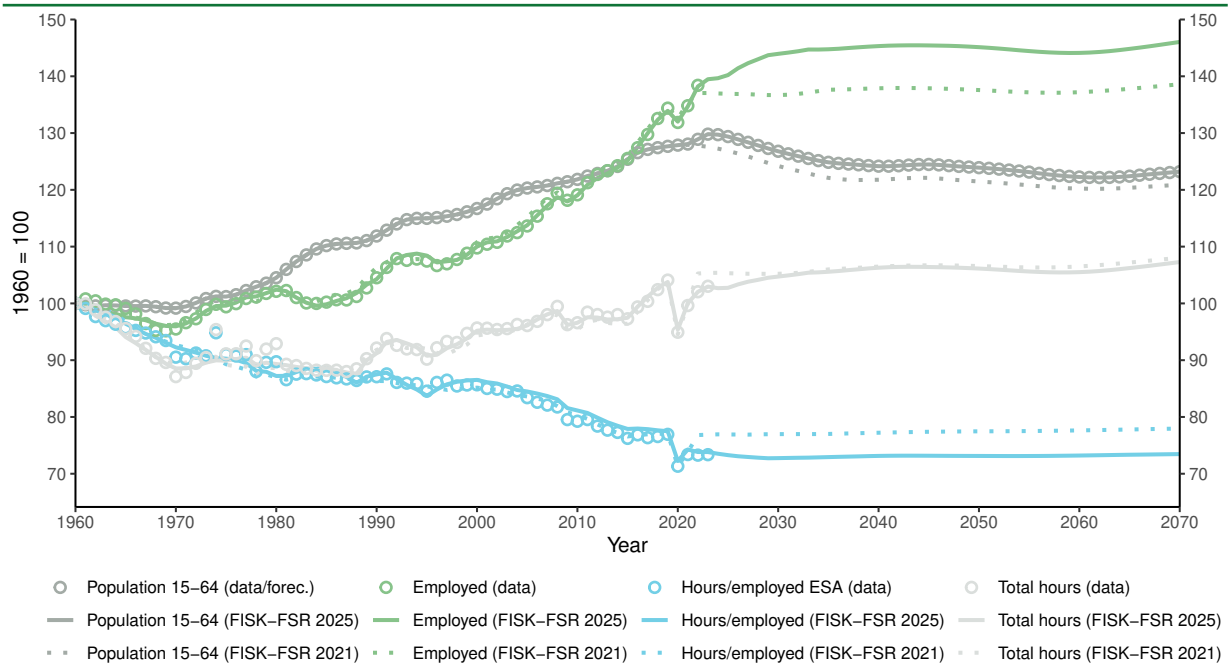
3.1.3. Political Measures

Political measures represent the third fundamental exogenous input to the analysis. These include both enacted measures with future budgetary implications (e.g., the gradual increase of the statutory retirement age for women starting in 2024) and historical measures relevant to explaining observed trends (e.g., wage freezes for public employees or the abolition of the care recourse system). The analysis incorporates measures based on the FISK office's measures database, consistent with the last available FISK medium-term forecast from December 2024. Specifically, upcoming consolidation measures discussed in the first quarter of 2025 could not be included in the baseline projection. Only the measures from the National Energy and Climate Plan (NECP) that have been enacted and are sufficiently detailed are included in the baseline projection. These include all WEM measures, as well as the national CO_2 tax and the subsequent establishment of ETS2.

52 While the OLG model can endogenously track the historical development of total hours worked, exogenous trends had to be included to replicate the divergence between the development of employment and hours per employed person.

53 The model does not differentiate between dependent and self-employed labor. Therefore, the unemployment rate is measured as the share of registered unemployed individuals in the labor force potential, including the self-employed. In contrast, the national unemployment rate according to the AMS measures registered unemployed individuals relative to the labor force potential excluding the self-employed, and is therefore higher.

Figure 14: Long-Term Labor Market Developments



Sources: Statistics Austria, WIFO, AMECO, FISK OLG Model.

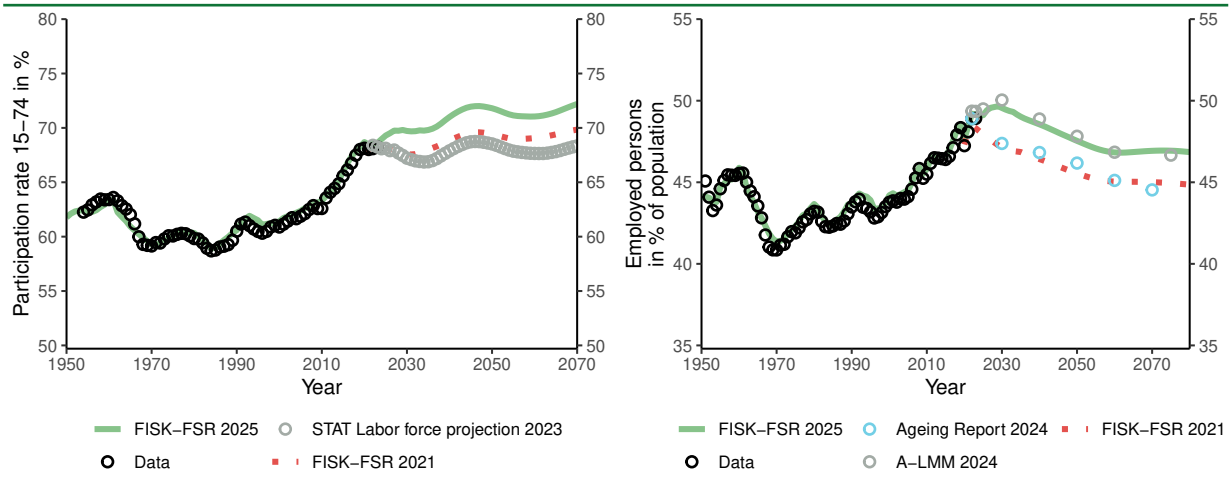
In principle, a no-policy-change assumption is applied, meaning that measures not yet enacted are excluded from the analysis. However, strict adherence to this assumption can sometimes contradict plausibility considerations in long-term projections. Thus, unlike the short-term FISK forecast, the analysis incorporates not only the legal framework at the time of projection but also the intent of the legislature at the time of enactment. For instance, government transfers that are nominally fixed and not subject to automatic valorization are often discretionarily adjusted to counteract real devaluation. In such cases, automatic valorization is assumed in the analysis, based on average historical adjustments. A similar approach applies to the adjustment of excise taxes (e.g., tobacco or mineral oil taxes). In 2023, as part of the inflation indexing of the Income Tax Act ("abolition of bracket creep"), all significant transfers that had not previously been automatically indexed, such as family allowance and student grants, were also switched to annual indexing.

Another point concerning the no-policy-change assumption is specific to models with feedback effects between fiscal and macroeconomic developments. In the long term, even small but persistent deviations from the debt-stabilizing primary balance can lead to an explosive or imploding debt-to-GDP ratio. Strict adherence to the no-policy-change assumption would mean allowing such outcomes, which would be anticipated by forward-looking agents. Instead, ongoing primary balance adjustments necessary to fulfill a presumed fiscal rule are assumed, effectively identifying the required adjustments ("fiscal gap"). Conceptually, this approach aligns closely with the methodology for calculating synthetic indicators S1 and S2.

3.2. Projection Results

This section presents the projection results of the baseline scenario. Based on the development of the primary balance (Section 3.2.1) and the interest-growth differential (Section 3.2.2), the "fiscal space" (Section 3.2.3) is subsequently derived. Table 8 summarizes all results at the end of this section.

Figure 15: Participation and Employment



Sources: Statistics Austria, WIFO, FISK OLG Model.

3.2.1. Primary Balance

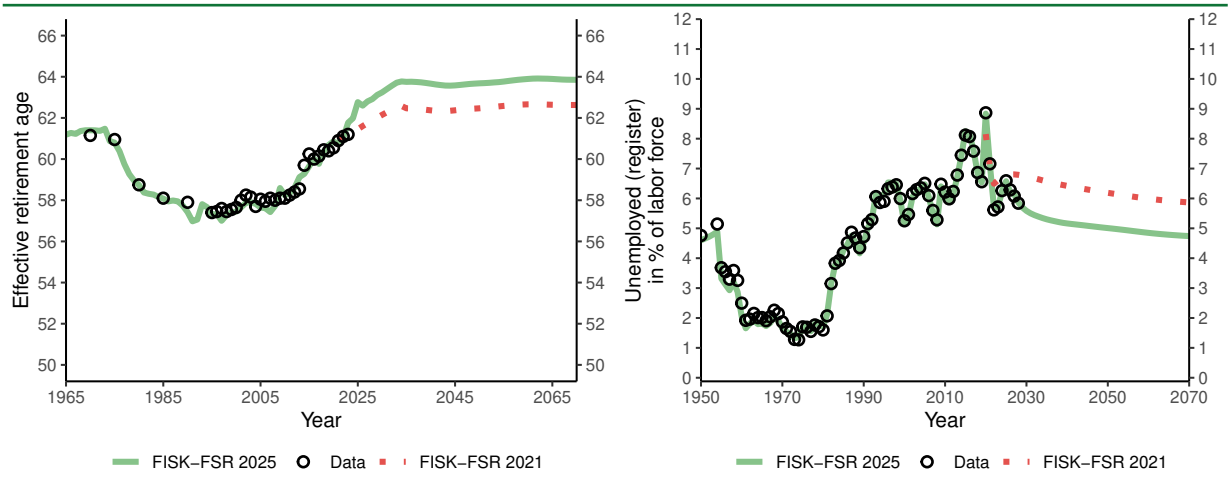
The long-term development of the primary balance, i.e., government revenues minus primary expenditures (government expenditures excluding interest payments), is primarily determined by demographic-dependent expenditures. They are presented first, before discussing long-run changes to climate-related budget items. This is followed by a description of the revenue projection.

Pension Expenditure

According to ESSPROS, total public pension expenditures amounted to 68.7 billion euros[54], or 14.5% of GDP, in 2023. Of this amount, 14.1 billion euros (3.0% of GDP) was allocated to civil servant pensions, and 7.0 billion euros (1.5% of GDP) to survivor pensions (widows, widowers, and orphans). The future development of pension expenditures depends on factors related to demographic change, the effect of past pension reforms ,and the role of indexation. The demographic factors increase spending pressure on pensions. The number of people over the age of 65 will rise from 1.8 million in 2023 to 2.9 million in 2070. This increase is substantial not only in absolute terms but also relative to the total population (2023: 19.6%, 2070: 29.1%). On the other hand, past pension reforms will increasingly take effect in the future, dampening the rise in expenditures. These reforms include the gradual increase in the statutory retirement age for women from 60 to 65 between 2024 and 2033, as well as the pension reforms of the 2000s (General Pension Act, APG), which introduced the most significant quantitative measure: the stepwise extension of the calculation of the pension assessment base to lifetime earnings. This reform replaced calculations based on the 15 best contribution years (ASVG) or the last contribution year (civil servants). The expenditure-reducing effect of the reform was reduced by two measures. First, a loss cap, which gradually weakens from 5% (2004) to 10% (2024). Second, and of far greater long-term significance, is the indexing of the assessment base. Under the old law (prior to the adoption of the APG in December 2014), both annual pension payments and the assessment base were indexed to inflation (at least from the mid-1970s onward). The APG continues to index current pensions to inflation but indexes contribution credits in the pension account at a higher rate, approximately equal to the growth of av-

[54] Pension expenditures were calculated as the sum of the following ESSPROS components: statutory pension insurance (ESSPROS 1), pensions of civil servants (ESSPROS 2), rehabilitation allowance (in ESSPROS 8: statutory health insurance), as well as disability and survivor pensions from accident insurance (in ESSPROS 6: occupational accident insurance) and for wartime victims (in ESSPROS 3). Administration costs and transfers to other social systems were excluded.

Figure 16: Effective Retirement Age and Unemployment



Note: Data on effective retirement age excluding civil servants.
Sources: Statistics Austria, WIFO, FISK OLG Model.

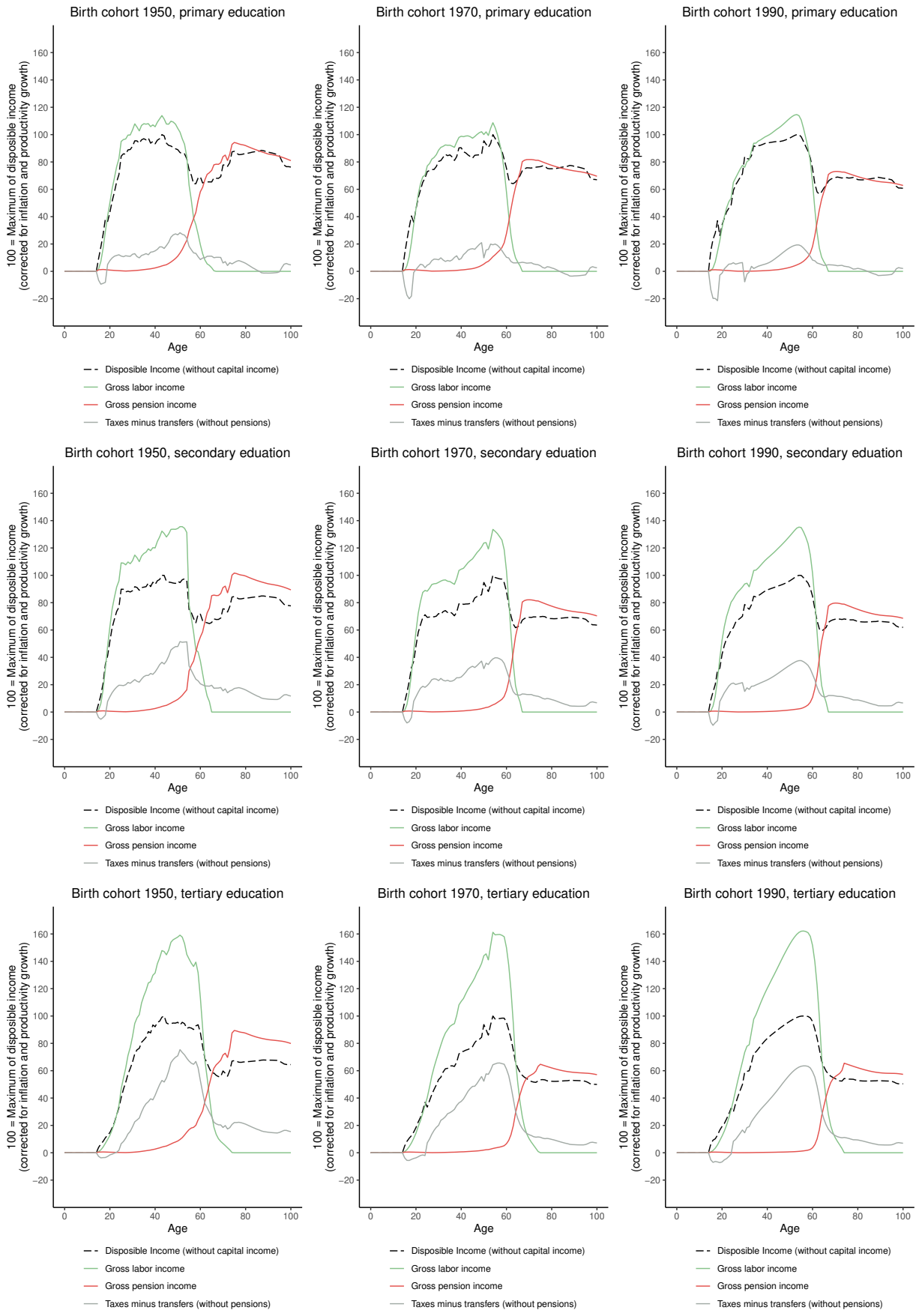
erage pension contributions (i.e., inflation plus labor productivity). Due to the large share of pensions governed by the old or "mixed" system within current pension expenditures, accurately modeling the systemic transition is critical for projections. Therefore, significant attention was paid to incorporating all important historical and parametric changes in the pension system. The most notable exception is the abolition of the parallel accounting system and the transition of all individuals born after 1955 who were not yet retired into the pension account system via an initial account credit as of January 1, 2014. Due to its complexity, this transition was not directly implemented in the OLG model. Instead, pension entitlements continued to be calculated based on the parallel accounting system ("pro rata temporis").[55] For the analysis, this approach has the advantage of making the transition between systems, which is also encoded in the initial account credit, more visible (see Figure 19).

The use of an Overlapping Generations (OLG) model allows pension entitlements to be calculated based on the endogenously determined employment and earnings trajectories[56] of representative cohort members, in accordance with the legal provisions in effect at each point in time. The use of model-generated employment and earnings trajectories is relevant not only for the projection horizon but also for the past, as comprehensive data on historical employment trajectories is not available. Figure 17 displays the generated life-cycle profiles for various cohorts and educational groups. Despite the assumption of representative cohorts, a certain degree of heterogeneity within a cohort can be accounted for (in addition to the explicit differentiation by educational groups). For example, pension entitlements are not calculated based on the average effective retirement age within a cohort but instead derived from a distribution of retirement ages based on the cohort-specific change in participation rates. This results in a distribution of pension entitlements, which is particularly relevant when retirement age-related deductions and bonuses are asymmetrical. The development of the average effective retirement age is shown in Figure 18. Due to the gradual increase in the statutory retirement age for women, a continued significant rise

55 This assumption was validated through an ex-post calculation with initial pension account credits, based on the employment histories calculated within the model. Deviations from the parallel calculation are minor but were nevertheless incorporated into the OLG model as constant age-, cohort-, and education-specific adjustments.

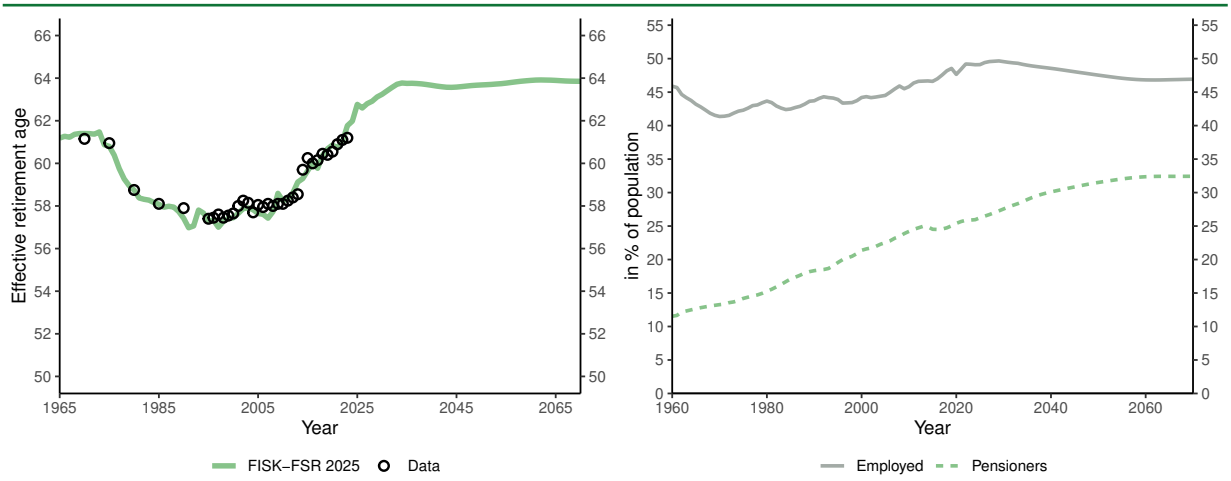
56 In addition to labor income (capped by the maximum contribution base, except under the legacy civil servant pension scheme), periods of unemployment and childcare are also considered in the calculation base. The equalizing allowance ("Ausgleichszulage") was included as a non-labor-income-dependent addition to the calculation base (assumed only for the education group with at most compulsory schooling), set in such a way as to replicate the aggregated expenditures.

Figure 17: Simulated Life-Cylce Profiles for Selected Birth Cohorts and Educational Groups



Source: FISK OLG Model.

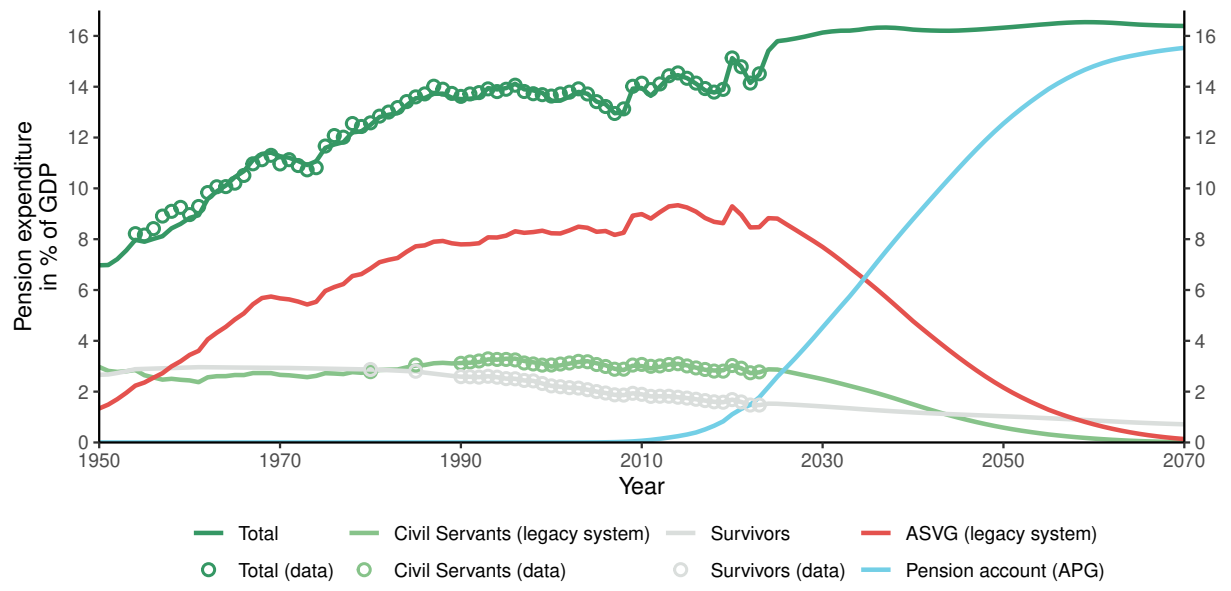
Figure 18: The Effective Retirement Age and the Number of Employed and Pensioners



Source: Statistics Austria, FISK OLG Model.

in the effective retirement age is projected until the mid-2030s, reaching 63.7 years in 2040. In the absence of further changes to the system, the effective retirement age is expected to remain at that level thereafter.

Figure 19: Decomposition of the Evolution of Pension Expenditure



Source: Statistics Austria, FISK OLG Model.

The number of pensioners (excluding recipients of survivor pensions only) is projected to increase by 0.89 million, from 2.37 million in 2023 to 3.25 million in 2070[57], while the number of employed persons grows

[57] Similar to challenges in other pension forecasting approaches based on the number of pensions (rather than pensioners), additional assumptions are required to derive the number of retired individuals. In the OLG model, this issue arises from the non-determined allocation of employment times within a year among cohort members. For instance, an average par-

by only about 210 000 over the same period. Compared to this demographic shift, the rise in public pension expenditures – by 1.9 percentage points from 14.5% of GDP in 2019 to 16.4% of GDP in 2070 – is low. A big part of the increase, namely 1.3 percentage points, already occurs in the years 2024 and 2025, due to indexing current pensions with the consumer price index lagged by 1.42 years (or 17 months), which implies a nominal valorization of individual pensions by 9.7% and 4.6%, respectively. Pension expenditure as a share of GDP first peaks at 16.3% in 2037 and then again in 2059 at 16.5% before starting to decline afterwards. The relatively small increase in pension expenditures, compared to the growth in the number of pensioners, is explained by the decline in average pensions due to pension reforms. The "Benefit Ratio," which measures the ratio of the average pension to the average wage, decreases from 54.3% to 48.1%.[58] This decline in pension income relative to employment income, as well as the later retirement age, is clearly illustrated in the life-cycle profiles (Figure 17). Figure 19 shows the transition of expenditures from the more generous legacy system (ASVG and civil servants) to the universal pension account system under the APG. The increase in pension expenditures is also mitigated by the development of expenditures for survivor pensions, which include widows, widowers, and orphan pensions. Due to the significant decline in the proportion of widows and widowers in the population, expenditures for survivor pensions are projected to decrease substantially, from 1.5% of GDP in 2023 to 0.7% of GDP in 2070.

Health Care

Health care expenditures for benefits in kind – excluding long-term care expenditures, which are treated separately – are measured according to the System of Health Accounts (SHA) and amounted to 7.4% of GDP in 2023. The per capita cost age profile was derived from the National Transfer Accounts (NTA) data (Hammer, 2015)[59] for the year 2010. Deviating from the general projection approach, the per capita cost age profile in health care (and long-term care) is additionally modeled as dependent on remaining life expectancy. According to the latest Health Survey 2019 (Statistics Austria, 2020), healthy life years have increased not only in absolute terms but also as a relative share of life expectancy since 1978 ("compression of morbidity"). This is accounted for in the analysis by shifting the age-dependent per capita costs so that the same remaining life expectancy corresponds to the same per capita costs over time.[60] An increase in life expectancy thus proportionally shifts the age expenditure profiles. The estimated drift for the projection horizon is 0.5% per annum, ignoring periods after 2019. This means that the additional health care expenditures caused by the COVID-19 pandemic, and their fade-out in the years thereafter, are included in the forecast but not in the estimation of the drift component. The drift component captures additional historical influencing factors, though a precise determination of their relative importance is not possible. In the health care sector, potential explanatory factors for the existence of a positive drift include a positive deviation from an income elasticity of 1, a generally cost-driving advancement in med-

ticipation rate of 80% for a representative household could mean that 80% of individuals participate 100% of the time, and 20% participate 0% of the time. Alternatively, it could mean that 100% of individuals participate 80% of the time. While this distinction has less impact on the average calculation base and average pension, it is significant for determining the number of beneficiaries. Specifically, due to factors such as the increased labor force participation of women, the trend is moving toward a more even distribution of employment times within a cohort. This must be taken into account when deriving the number of pensioners.

58 The "Benefit Ratio" was calculated without survivor pensions or individuals receiving only a survivor pension.

59 The per capita cost age profiles are based on the Austrian segment of the European Health Interview Survey (EHIS). While the survey includes educational information, group differences are so small, and variance so large, that Hammer (2015) decided against differentiating the per capita cost age profiles by education level.

60 It should be noted that if an improvement in health status is not explicitly taken into account, the corresponding effect would be included in the estimation of the drift component. Due to the largely linear increase in life expectancy, this would lead to very similar results.

Box 4: Projection of Age-Related Government Consumption and Transfers Other Than Pensions

The projections of expenditure for health, long-term care, education, family, and administration use the same methodological approach. The following relationship is generally assumed for each of the expenditure categories:

$$nominalexpenditure_t = \sum_{a,s} population_t^{a,s} \cdot unitcostprofile_t^{a,s} \cdot indexation_t, \quad (1)$$

where

$$indexation_t = laborproductivity_t \cdot pricelevel_t \cdot drift_t, \text{ with } drift_t = drift_0 \cdot (1 + g^{drift})^t. \quad (2)$$

The superscripts denote age in single years (a) and the education group (s). This means that expenditures can change due to a mechanical age-education composition effect if the cost profiles vary by age and/or education. For example, the unit costs of nursing care services increase significantly in old age, so a higher number of people in advanced age increases the average expenditure per capita. For most expenditure types, the cost-age profiles are held constant over time. Exceptions to this are nursing care and health care services, where the cost-age profiles change over time due to an improvement in the average health status at each age.

The indexation of costs is of central importance. In the analysis, this is decomposed into contributions from labor productivity[a], price level, and a residual drift. Except for the exceptions discussed below, all expenditure types are initially indexed by assumption using the growth of labor productivity and the consumer price index (CPI) lagged by one year. Indexing based on labor productivity is approximately derived from the assumption of an income elasticity of 1. This means that an increase in productivity (and consequently in general wage levels) leads to a higher demand for corresponding public services, which is assumed to be met. A contrasting assumption would be that productivity gains are used to provide the same public service with fewer resources (e.g., fewer public employees). The drift component is estimated as the average historical deviation from pure indexation with labor productivity and the price level and is kept constant over the projection horizon. It should thus capture all additional indexing factors, as well as deviations from the assumptions outlined above (e.g., from the assumption of an income elasticity of 1).[b] Since 2020 and 2023, respectively, long-term care benefits ("Pflegegeld") and family allowances ("Familienbeihlife") are explicitly indexed to the CPI lagged by 1.42 years (or 17 months; "Anpassungsfaktor"). For these transfers, only the statutory indexation factor was used in the projection (ignoring labor productivity and the historical drift).

Figure 27 in the appendix shows the cost developments of the individual expenditure categories, adjusted for demographic effects, productivity, inflation, and discretionary measures. The additional adjustment of historical expenditure data for discretionary measures is essential; otherwise, the effects of historical benefit expansions or restrictions would be indirectly projected into the future, violating the no-policy-change assumption. An example is the abolition of the long-term care recourse in 2018, which accounts for most of the increase in nursing care service costs in that year that cannot be explained by population, inflation, or productivity. The data must be adjusted for this discretionary measure; otherwise, the drift would be overestimated. A positive trend in Figure 27 indicates a structural, positive drift component.

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[a] Indexation is carried out using residual labor productivity, which in the baseline scenario grows at 1.2% per annum from 2025.

[b] Comparable long-term forecasts, such as the Ageing Report, refrain from empirical estimates of indexation and instead fix it by assumption (e.g., GDP per working hour or GDP per capita) while taking appropriate sensitivity analyses into account.

Box 4 (cont'd): Projection of Age-Related Government Consumption and Transfers Other Than Pensions

It should be noted that the trend estimation of the drift component is sensitive to the choice of the reference period. The principal advantage of a long reference period is offset by the problem of declining data quality. In particular, adjusting for structural breaks and discretionary measures in older data becomes increasingly difficult. For this reason, the reference period is limited to the last ten to twenty years, depending on the expenditure function.

This described approach is applied to health care services in kind, health care benefits, long-term care services in kind, long-term care benefits, educational services, family transfers, other transfers, and administrative services, with deviations from the general projection chosen for specific expenditure types as needed, as described in detail later. The distinction between benefits in kind and in cash is justified, on the one hand, by the fact that they sometimes exhibit significantly different dynamics. On the other hand, this distinction is useful for the macroeconomic part of the model, as benefits in kind are treated as public consumption, while transfers to households alter household budget constraints and thus directly influence consumption and labor supply decisions.

ical technology, the "Baumol's cost disease"[61], and institutional factors. By 2070, a significant increase in health care expenditures for benefits in kind from 7.4% (2023) to 9.8% is projected (Figure 21). The average nominal (real) growth between 2025 and 2070 is estimated at 3.8% (1.8%) per annum, with dynamics slowing after 2050 due to demographic factors (Figure 20).

In addition to health care benefits in kind, health-related transfer payments were projected. These include sickness and maternity benefits, which together accounted for 0.4% of GDP in 2023, according to the European System of Social Protection Statistics (ESSPROS), with sickness benefits making up the majority. Due to a lack of detailed data, these cash benefits are projected based on the demographic development of the 15- to 60-year-old population, while the historical drift was estimated at 1.0% per annum. This results in an increase in expenditures from 0.4% (2023) to 0.5% of GDP by 2070. In total, health care expenditures (benefits in kind and transfers) increase from 7.7% of GDP in 2023 to 10.3% of GDP in 2070.

Long-Term Care

In 2023, public expenditures for long-term care consisted of in-kind benefits amounting to 0.8% of GDP (Long-Term Care Service Statistics, measured net after deducting co-payments) and long-term care allowances totaling 0.5% of GDP (according to ESSPROS). The age-dependent cost profiles were taken from Grossmann and Schuster (2017). To account for the continuous increase in healthy life years, the cost age profiles were adjusted over time proportionally to the development of remaining life expectancy, similar to health care benefits. After adjusting for discretionary measures (primarily the abolition of the long-term care recourse and the expansion of subsidies for 24-hour care), the estimated drift results in an average extraordinary growth of 1.9% per annum for in-kind care benefits. In contrast, the historical drift of per capita long-term care allowance costs was significantly negative at -0.7% per annum, primarily due to historically irregular adjustments for inflation. Since 2020, long-term care allowances have been automatically indexed to inflation (lagged by 17 months), and for the projection horizon, it is assumed that the historical drift will no longer play a role. Indexation follows the statutory automatic adjustment

[61] Due to differing developments in sectoral productivity, general wages increase in sectors where productivity gains are more challenging due to the high level of personal services, resulting in a relative increase in per capita costs in this sector.

mechanism. By the end of the projection horizon, the dynamics of in-kind care benefits will be significantly stronger, rising from 0.8% to 2.6% of GDP, compared to expenditures for long-term care allowances, which are projected to decline slightly relative to GDP (2023: 0.5% of GDP, 2070: 0.4% of GDP). The annual average nominal growth (2025 to 2070) of in-kind care benefits, at 5.9% per annum, represents the highest growth rate among public consumption types. Overall, total long-term care expenditures (in-kind benefits and long-term care allowances) are projected to increase from 1.3% of GDP in 2023 to 3.1% of GDP in 2070.

Education

The data on public education expenditures used in this analysis are based on the corresponding classification according to COFOG within the national accounts categories of public consumption (P.3) and other current transfers (D.7; primarily government subsidies to private educational institutions). In 2023, public education expenditures amounted to 4.8% of GDP. The education-specific per capita cost profiles were derived from the NTA data (Hammer, 2015). The average historical drift was calculated at a growth rate of 0.1% per annum, which is negligible for the projection. The sociodemographic effect on education expenditures relative to GDP consists of two reinforcing factors. On the one hand, the share of the young population relative to the working-age population is increasing.[62] The ratio of individuals under 20 years old to those aged 20–64 rises from 31.7% in 2023 to 35.8% in 2070. Additionally, the educational structure is shifting toward higher education levels (Figure 11), resulting in longer education periods and thus higher per capita expenditures. Overall, a slight long-term increase in education expenditures is expected from 4.8% of GDP in 2023 to 5.1% of GDP in 2070.

Family Support

According to ESSPROS, family transfers amounted to 1.5% of GDP in 2023. These include family allowances ("Familienbeihilfe"), the child tax credit ("Kinderabsetzbetrag"), childcare benefits ("Kinderbetreuungsgeld"), child maintenance advances ("Unterhaltsvorschuss"), and various smaller transfers.[63] The volume effect is determined by the number of individuals up to 18 years old (up to 24 years old for the tertiary education group). In the model, transfers for children under 15 are paid to their parents, while those aged 15 and older receive them directly.[64] Since 2023, a majority of family transfers are now automatically indexed to inflation (lagged by 17 months). The estimate of the historical drift of -0.8% per annum is therefore ignored, as are changes in labor productivity. As a result, family transfers decrease from 1.5% of GDP in 2023 to 1.0% of GDP in 2070.

Administration

Administrative expenditures were defined more broadly than the COFOG function "General Administration" and were calculated residually, i.e., as government consumption excluding the functions of care, health, and education. This means that this category includes not only general administrative expenses but also expenditures for defense, public security, recreation, etc. Based on an analysis of historical cost trends, administrative expenditures – unlike other expenditure categories – were modeled without considering population development, i.e., independently of population size and structure. Economically, this

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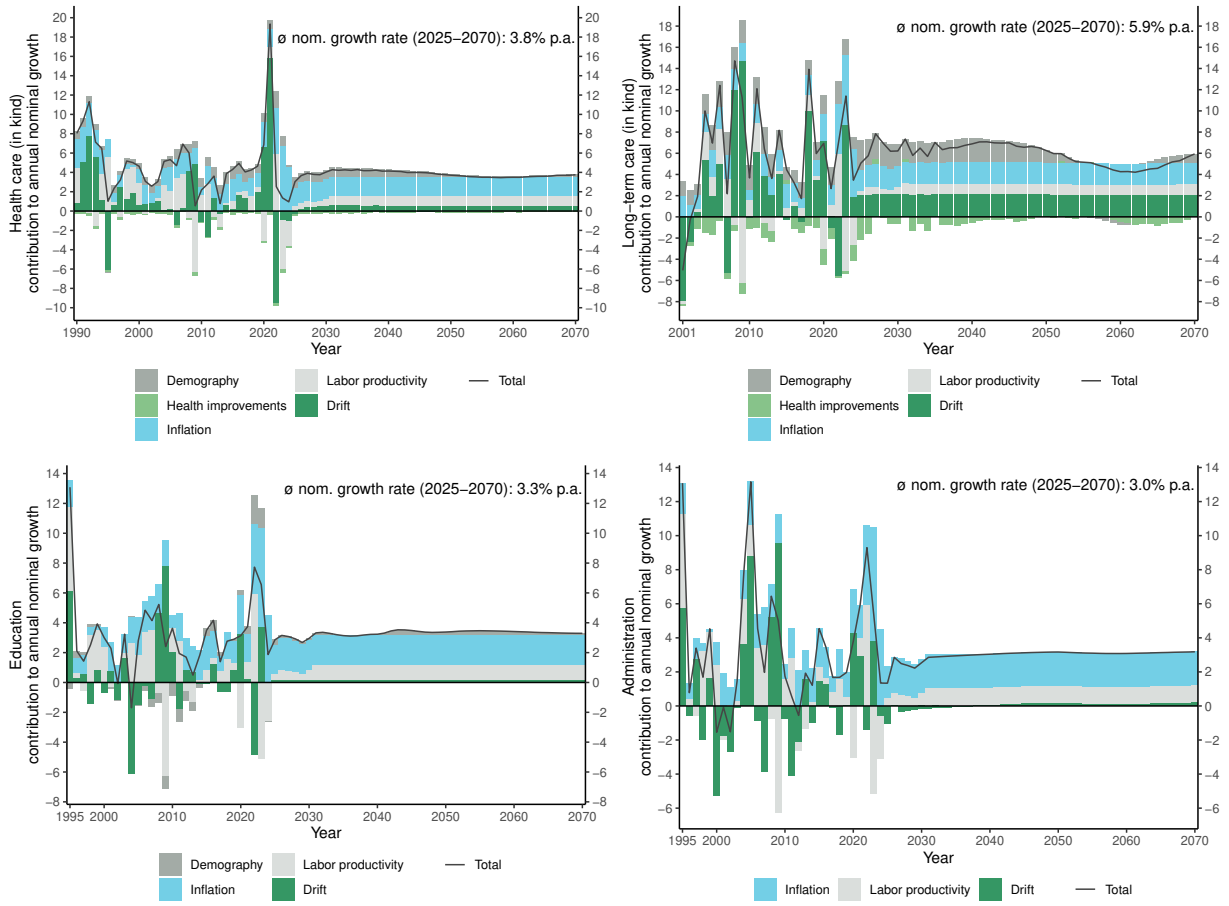
62 At the same time, the share of individuals under 15 and under 20 years old in the total population slightly decreases over the projection horizon.

63 The total amount of family transfers was calculated as the sum of the ESSPROS categories 18 ("Family Burden Equalization Fund"), 19 ("Child Tax Credits"), and 29 ("Scholarships and Student Grants").

64 In the OLG model, individuals aged 15 and older are considered economically independent, meaning they make their own economic decisions. Children under the age of 15 are assigned proportionally to the adult population based on their age and age-specific fertility rates by appropriately adjusting the household size weight.

Figure 20: Nominal Expenditure Growth of Public Consumption Components



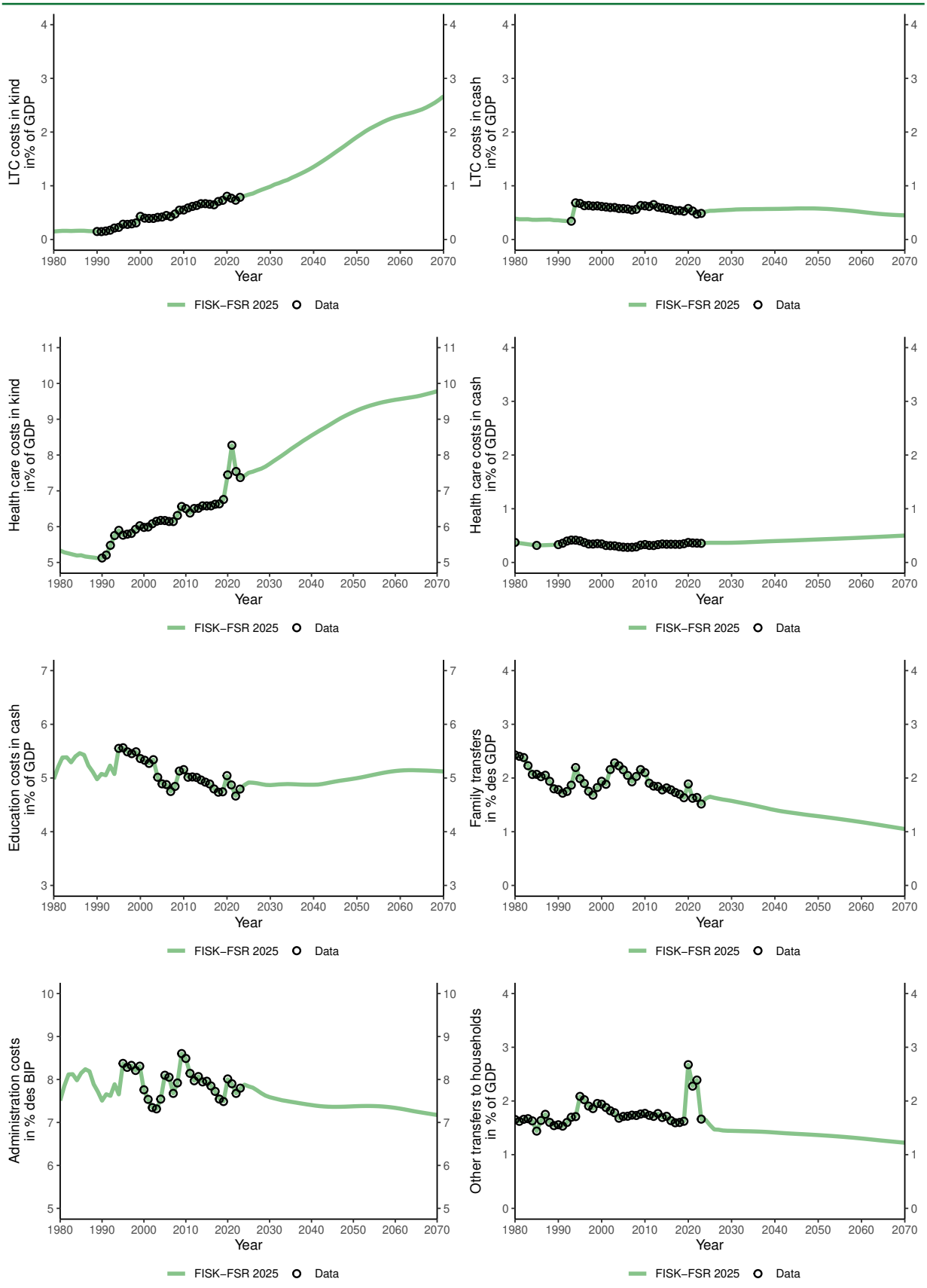
Note: In this figure, the effects of discretionary measures are included in the drift component.
Source: FISK OLG Model.

can be justified by the significant "public good" nature of the expenditures aggregated under administration. This means that the projection is based on CPI inflation (lagged by one year), labor productivity, and the drift component, which was estimated at -0.4% per annum. The estimation is based on a reference period starting in 2010. In contrast, the drift was significantly positive in the period from 1995 to 2009 before its trend reversed. Increased budgetary pressure due to the financial crisis may have led to a structural break in this regard, for example, through staff reductions via non-replacement of positions and systematic undershooting of federal staffing plans. However, in the projection, it is assumed that the potential for savings will be exhausted over time and will gradually decrease. Therefore, the assumed negative drift growth is gradually adjusted to 0 in a linear fashion over the projection horizon. Taken together, according to the described assumptions, a decline in administrative expenditures from 7.8% of GDP in 2023 to 7.2% of GDP in 2070 is calculated (Figure 21). For the period from 2025 to 2070, public administration is expected to show the lowest growth dynamics of all components of public consumption, with an average nominal growth rate of 3.0% (Figure 20).

Unemployment Benefits, Other Transfers, Subsidies and Investment

Transfers to unemployed include unemployment insurance benefits, unemployment assistance ("Notstandshilfe"), and other cash benefits related to unemployment insurance. In total, according to ESSPROS, they amounted to 0.9% of GDP in 2023. In the projection, the quantity effect results from the number of registered unemployed individuals, while the price effect is determined by wage developments. Due to

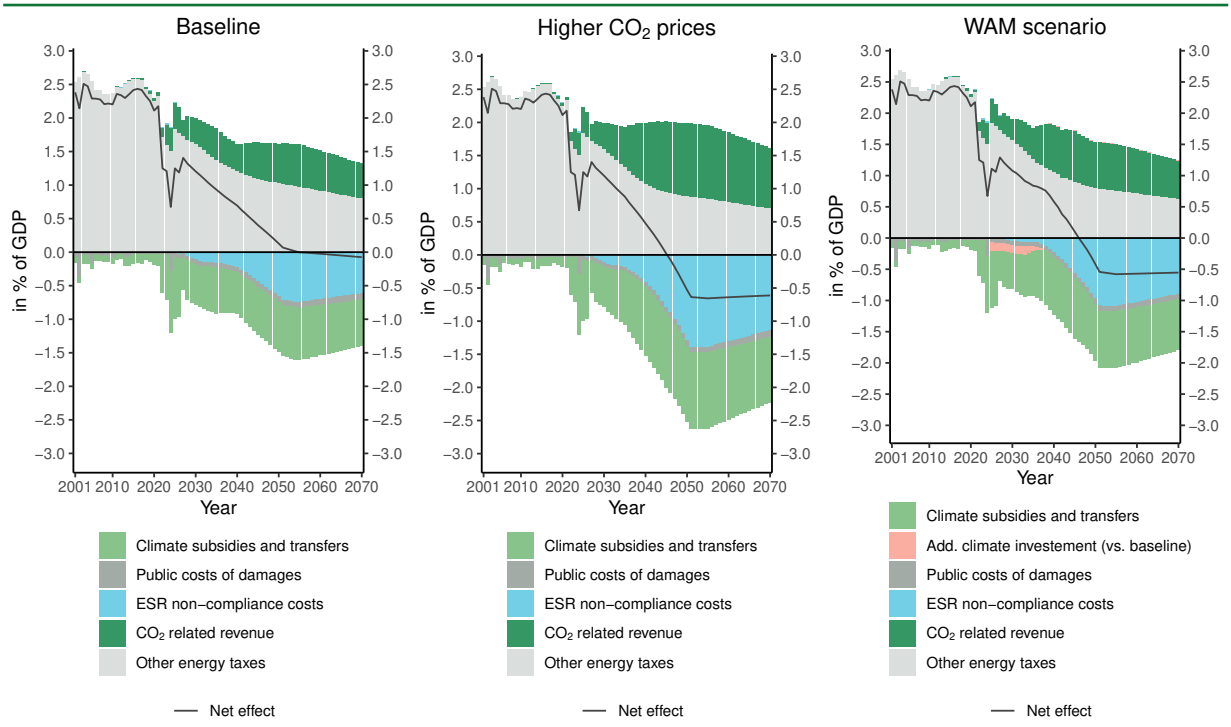
Figure 21: Demography-related Public Consumption and Transfers to Households



Note: The effects of discretionary measures are included in the drift component.
Source: Historic data, as described in Section 3.2.1, and the FISK OLG Model.

the quantity effect – based on the model-derived reduction in the unemployment rate – a slight decline from 0.9% (following the temporary increase to 1.1% in 2025) to 0.8% of GDP by 2070 is expected. Other transfers, excluding climate transfers, encompass a range of smaller monetary transfers (the largest item being social assistance; "Sozialhilfe") and amounted to 1.7% of GDP in 2023. In the absence of detailed data, they were projected on a per capita basis (i.e., assuming a constant cost-age profile), with an estimated historical drift of -0.4% per year. This results in a decline in expenditures for other transfers to 1.2% of GDP by 2070. Expenditures on subsidies and investments amounted to 2.3% and 3.7% of GDP, respectively, in 2023. Due to the highly discretionary nature of these expenditure items, it is assumed that they develop proportionally to GDP in the absence of discretionary interventions. In the long-term, public investments are assumed to remain at the forecasted value of 3.9% for 2028. According to the FISK medium-term forecast, subsidies are reduced from 2.3% of GDP in 2023 to 1.9% of GDP in 2028. The approach of keeping budget items as constant shares of GDP is also applied to other expenditures and revenues that are not explicitly modeled, including the EU membership fee.[65]

Figure 22: Evolution of Climate- and Energy-Related Budget Items



Notes: Positive (negative) values imply an improvement (deterioration) of the primary balance. In the baseline, climate investments are included in total investments and are not plotted here. The right panel, only shows the additional climate investments according to WAM. Higher CO_2 price assumptions according to WAM (see Table 2). Indirect effects through changes in economic activity, due to of changes to the CO_2 price or damages to the private capital stock are not included in this figure.
Source: FISK OLG Model.

Climate-Related Budget Items

The left panel of Figure 22 summarizes the contribution of different climate- and energy-related budget items to changes in the primary balance over time. It distinguishes climate subsidies and transfers, public costs of damages from natural disasters, ESR non-compliance costs, revenue from CO_2 taxes, and auction

[65] A potential increase, due to the repayment of the NextGenerationEU bonds, which is targeted for completion by 2058, could not be quantified and was not included in the baseline projection.

revenues, as well as energy taxes. Data on public investment could not be split up specifically for being climate-related or climate-unrelated and are therefore omitted from the figure.[66] Compared to 2023, the two biggest contributors to a deterioration of the primary balance are the reduction in energy taxes[67] and the costs of being non-compliant with the ESR emission targets. CO_2 related revenues compensate for a lion's share of the climate subsidies and transfers.[68] In total, the climate-related budget items contribute 1.3pp to the worsening of the primary balance. Figure 22 further shows that damage costs, defined in the narrow sense of direct public costs of natural disasters, have a comparably small contributing effect on the worsening of the primary balance.

Revenues

The development of the revenue-to-GDP ratio is significantly more stable than the expenditure-to-GDP ratio due to its close connection with economic development. For most revenue items, their ratios with respect to GDP at the end of the forecast horizon remain very close to the 2023 baseline values. However, there are some notable differences. The strong increase in the labor share in 2024 and 2025, compared to 2023, is expected to persist, leading to permanently higher revenues from taxes on labor. As discussed, revenues from taxes on energy are expected to decline throughout the projection horizon. Combining these two trends explains, why the revenue-to-GDP share is increasing in the short run and then steadily declining until it reaches a slightly lower level (-0.2pp) at the end of the projection horizon. Taxes on pensions also increase in the short run, because of the strong short-run rise in pension payments due to the indexation with lagged CPI. However, after this initial increase they are expected to decline over time. This decline is explained by a progression-related decrease in the implicit average tax rate (from 18% in 2024 to 16% in 2070) due to lower average pension payments.[69]

Primary Balance

Figure 23 visually presents the long-term development of various expenditure and revenue items compared to the base year 2023. The chart illustrates that the majority of the long-term primary balance adjustment[70] is driven by expenditure-side developments. According to projections, health care (2023 to 2070: +2.6 percentage points of GDP), long-term care, and pensions (+1.9 percentage points each) will see the largest expenditure increases. The negative development of the primary balance is reinforced by the contraction of taxes on energy (-0.6 percentage points) and the increase in other expenditures (+0.5 percentage points), which mainly stems from non-compliance costs to sufficiently reduce CO_2 emissions. The negative trend in the primary balance is partially offset over the same period by an increase in taxes on labor (+0.9 percentage points, mainly due to the increase in the labor share) and declines in administrative expenses, subsidies, and family support transfers (-0.6, -0.6, and -0.5 percentage points, respectively). Figure 23 summarizes the contributing factors to changes in the primary balances compared to the year 2023. The primary balance deteriorates in 2024 and 2025 combined by about 1.3% of

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66 We added the additional climate-related investment according to WAM in comparison to WEM in the right panel of Figure 22, which was directly extracted from the NECP. The potential indirect public costs of regulatory measures for private entities could not be quantified.

67 The biggest affected single tax is the mineral oil tax. The engine-specific insurance tax also contributes to the revenue decline, as its revenue is linked to the consumption of energy from oil in the projection. If the engine-specific insurance tax base were broadened to include all energy sources, the deterioration of the primary balance would be 0.4pp of GDP smaller in the long run.

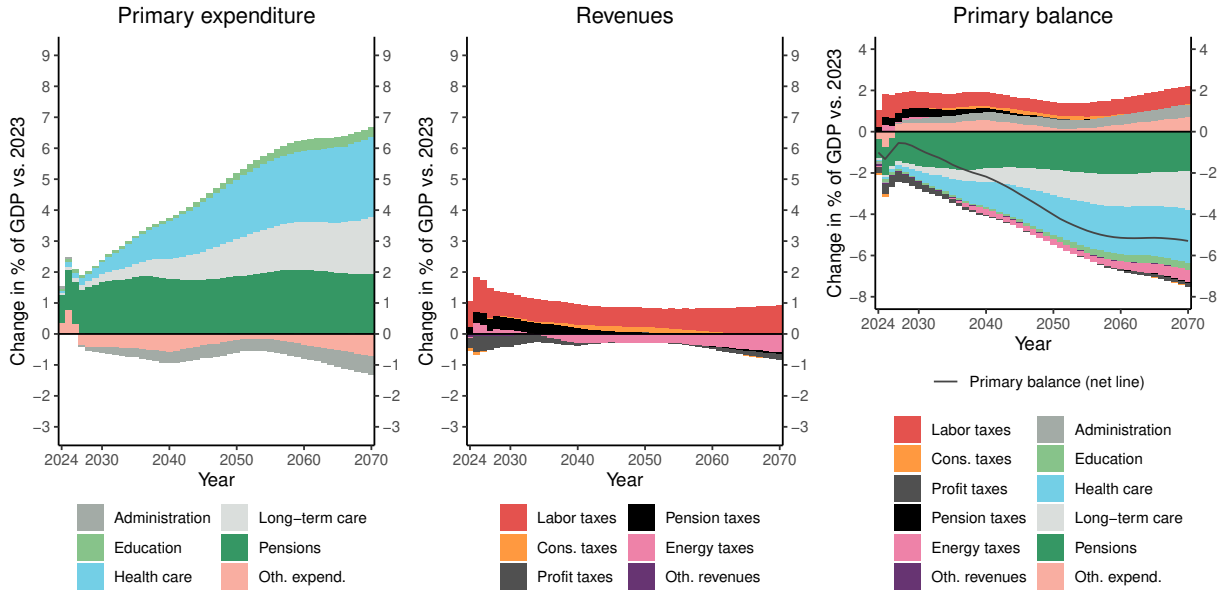
68 These two items are in parts directly linked, as ETS2 revenues are earmarked to be used to finance climate policies.

69 The progressivity of the wage tax on pensions is higher than that of the wage tax on labor income. In the FISK medium-term forecast, the change in the average pension has a weight 2.1 times higher than the change in the number of pensioners when estimating wage tax revenue. For the wage tax on labor income, this weight is 1.8.

70 The changes in the primary balance according to the no-policy-change assumption include all changes in revenues and expenditures except for the required adjustment of a virtual 0-multiplier instrument that implements the debt-to-GDP target.

GDP before slightly improving again until 2027. Afterwards, the primary balance is marked by a steady decrease until 2060, when it levels out at about 5% of GDP lower value compared to 2023. The left panel in Figure 25 shows the difference in the primary balance projection from FISK-FSR 2021. Similarly to the current projection, the last report predicted a deterioration of the primary balance of close to 5% of GDP in 2070 compared to the base year. The key difference is that now the starting position is much less favorable, with a primary deficit in 2023 of 1.4% of GDP compared to a primary surplus of 2.0% in 2019. The long-term deterioration of the primary balance to GDP ratio relative to 2023 does not, in itself, allow for definitive conclusions regarding the magnitude of any necessary fiscal adjustments. First, the fiscal starting position in 2023 is a relevant factor, and second, fiscal space is also determined by the difference between interest payments and the GDP denominator effect.

Figure 23: Change in Primary Expenditure, Revenue and Primary Balance to GDP Ratios versus 2023



Source: FISK OLG Model.

3.2.2. Interest-Growth Differential

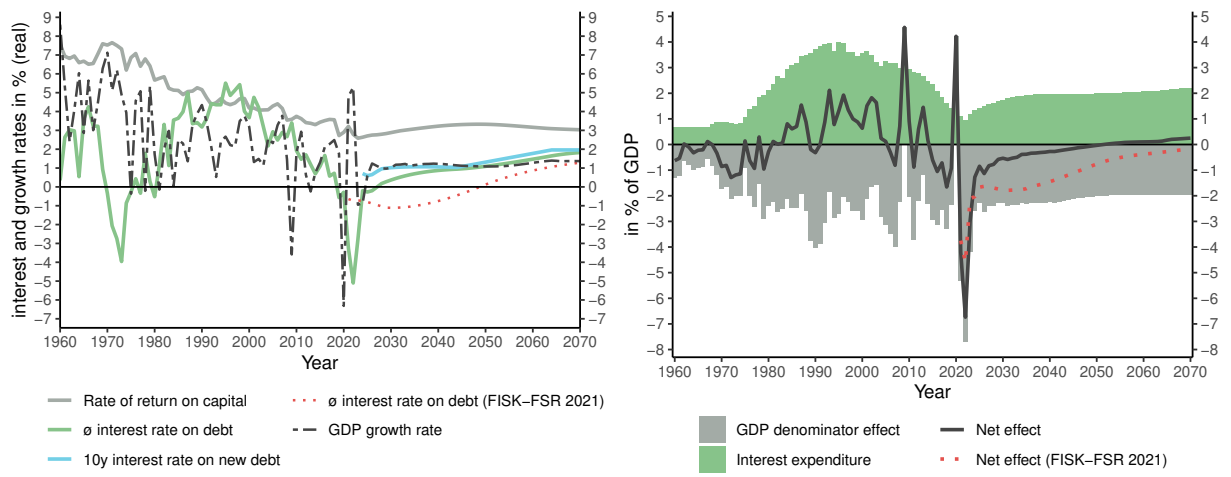
The second key factor influencing fiscal space, besides the primary balance, is the interest-growth differential, i.e., the difference between the nominal GDP growth rate and the nominal average interest rate on government debt. The effect of the interest-growth differential on fiscal space is proportional to the government debt-to-GDP ratio (Box 5). When addressing government debt in an integrated macroeconomic model, the distinction between interest rates, specifically the average interest rate on government debt and the general rate of return on capital[71], is important. Austria is currently in a situation where the average interest rate on government debt is lower than the GDP growth rate, meaning the interest-growth differential is negative. At the same time, the rate of return on capital, which is endogenously determined in the OLG model[72], is higher than the growth rate of real GDP (see Figure 24). Driven by the assumption of comparably steady productivity growth during the projection horizon, the rate of return on capital is also projected to remain relatively constant. Similarly to the Debt Sustainability Monitor 2023 (European Commission, 2024a), it is assumed that the nominal interest rate on newly issued government debt fol-

71 The general rate of return on capital is the marginal product of capital adjusted for depreciation and taxation.

72 The rate of return on capital is endogenous due to the assumption of a semi-open economy.

lows the 10-year forward rates for the next 20 years before linearly converging to 4% by 2050.[73] The left panel of Figure 27 illustrates the assumed interest path. Due to the long-term structure of Austrian government debt, these assumptions affect the average interest rate with a significant delay. In sum, it is projected that the negative interest-growth differential will persist until around 2050 before becoming positive.

Figure 24: Real Growth and Interest Rates and the Interest-Growth Differetial



Source: FISK OLG Model.

3.2.3. Fiscal Space

The concept of "fiscal space" or "fiscal gap"[74] is used to assess long-term fiscal policy and its sustainable design (see Box 5 for an explicit derivation). The fiscal gap measures the necessary fiscal effort to keep the debt-to-GDP ratio in line with the key requirements of the Stability and Growth Pact, in particular, with a debt-to-GDP trajectory converging to 60%. Since the new European fiscal framework is too complex to be fully represented in all its facets in a macroeconomic model like the present one, a simple debt rule has been implemented that captures the core of the framework, in particular, in the long run. The debt-to-GDP target trajectory is a linear reduction of the debt-to-GDP ratio by 0.5pp per year, starting in 2025 until reaching 60%, in line with the debt-safeguard requirement of the new fiscal rules framework.[75] Similar to other common sustainability indicators, such as S1 and S2 (Box 6), the "fiscal space" indicator separates the identification of an ex-ante fiscal adjustment requirement from the effect of actually adjusting the primary balance. This separation is conceptually useful, as the same fiscal gap can be addressed with different sets of consolidation measures, all entailing different feedback effects. Identifying the "fiscal space" or "fiscal gap" in the OLG model is technically implemented by using a dedicated 0-multiplier budget instrument[76] that automatically adjusts the primary balance, such that the debt-to-

73 The key difference from the Debt Sustainability Monitor 2023 is that forward rates are used only for the next 10 years.

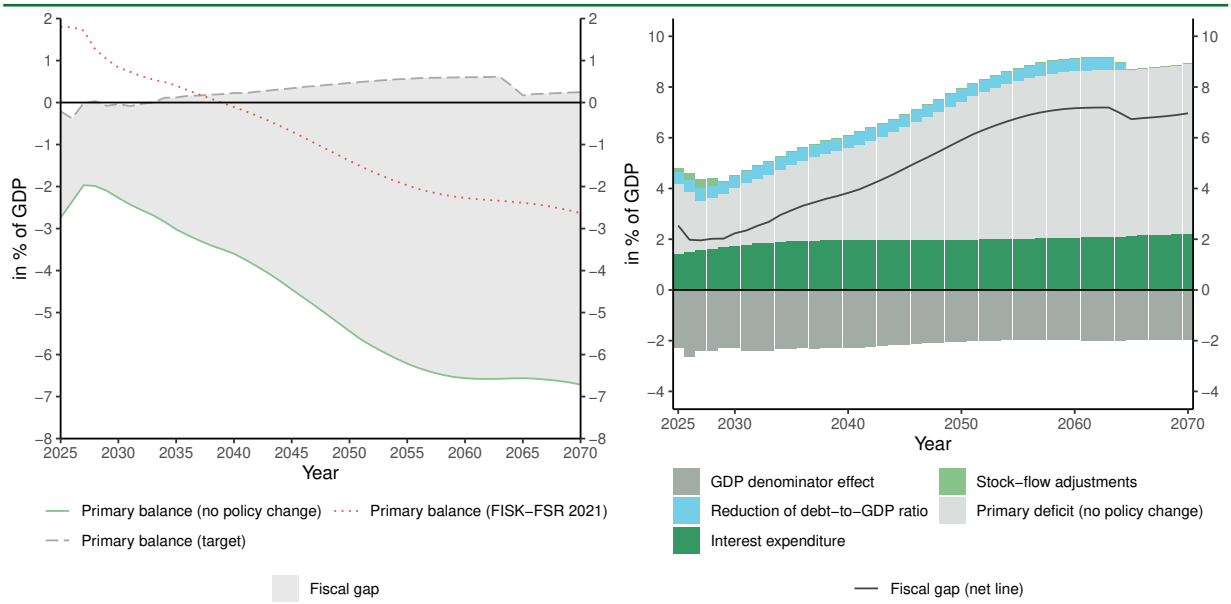
74 The terms "fiscal space" and "fiscal gap" refer to the same concept, just with opposite signs.

75 In the last report, debt reduction according to the then applicable 1/20-rule was assumed. Further, using a yearly reduction by 0.5pp is a good approximation of the intent of the new framework in the long run. In the short run, the target path can take different forms: first, as the reduction of 0.5pp has to be achieved when averaging over the fiscal adjustment period of four or seven years, not necessarily every single year; second, structural adjustments always have to be translated into a net expenditure path, which can deviate from the structural balance requirements ex-post; and third, in case of an Excessive Debt Procedure (EDP), the debt-safeguard is not applicable.

76 This is modeled as a net asset transfer to or from the government from or to abroad.

GDP target trajectory is replicated exactly. The simulated primary balance, excluding this instrument, is then referred to as the no-policy-change primary balance.

Figure 25: Evolution of the Fiscal Gap over the Projection Horizon



Source: FISK OLG Model.

The left panel of Figure 25 shows the "fiscal gap" as the difference between the no-policy-change primary balance and the target primary balance that implements the reduction in the debt-to-GDP ratio by 0.5pp per year. The right panel again shows the fiscal gap, but split by its contributing factors as described in Box 5. The fiscal gap increases in the primary deficit (no policy change), the interest payments, the positive stock-flow adjustments and the yearly debt-reduction requirement, while it decreases in the GDP-denominator effect. As the GDP-denominator effect still dominates the interest payments in the first years, the government could run a small primary deficit and still reduce the debt-to-GDP ratio by the required amount. As the interest-growth differential increases and eventually turns positive, the required primary balance position also increases. While the required target becomes more ambitious over time, the projected no-policy-change primary balance deteriorates further, increasing the fiscal gap. While the gap amounts to about 2% of GDP in the years until 2030, it subsequently widens to around 7% of GDP by 2060, before it slightly closes again once the 60% target level has been reached in 2064, and the primary balance target consequently becomes less ambitious. Figure 25 also reveals that the fiscal effort required to not let the debt-to-GDP ratio increase is considerably larger than the additional effort to then reduce debt by an annual 0.5% of GDP.

As an alternative measure, one can use the calculated paths of the no-policy-change primary balance and the interest-growth differential to compute the S1 and S2 indicators (Box 6). Based on the FISK-FSR projections, they amount to 5.0 (S1) and 6.5 (S2), respectively, and are therefore considerably higher than the corresponding values according to the European Commission's Debt Sustainability Monitor 2023, which reports 2.5 for S1 and 3.3 for S2. There are three key reasons for these deviations: First, the base year has considerably worsened since the DSM 2023 was published. Second, aging-related expenditures are projected to increase much weaker in the Ageing Report 2024, which is the source used in the DSM 2023. Third, the DSM 2023 does not include the negative effect of climate-related budget items on the primary balance. In order to facilitate the comparison with the long-term projection of the Ministry of

Box 5: Definition and Derivation of the Fiscal Gap

The derivation starts from the law of motion for public debt. The absolute nominal (gross) government debt (*debt*) at time t is the debt level from $t-1$ plus interest payments, minus the primary surplus from t.[a] Dividing by nominal GDP, along with rearranging the terms, results in the definition of the fiscal gap, which is to be interpreted as a GDP ratio:

$$debt_t = debt_{t-1} + i_t \cdot debt_{t-1} - prim.bal._t \quad \Leftrightarrow$$

$$\underbrace{\frac{prim.bal._t^{adjust}}{gdp_t}}_{\text{fiscal gap}} = \underbrace{\frac{i_t}{1+g_t}\frac{debt_{t-1}}{gdp_{t-1}}}_{\text{interest expend. to GDP}} - \underbrace{\frac{g_t}{1+g_t}\frac{debt_{t-1}}{gdp_{t-1}}}_{\text{GDP denom. effect}} - \underbrace{\frac{prim.bal._t^{nopolicychg}}{gdp_t}}_{\text{primary balance (no-policy-change)}} - \underbrace{\left[\frac{debt_t}{gdp_t} - \frac{debt_{t-1}}{gdp_{t-1}}\right]}_{\text{change in debt-to-GDP}},$$

where i_t denotes the nominal average interest rate of government debt and g_t the nominal GDP growth rate. The primary surplus can be decomposed into two parts: the part that arises under the no-policy-change assumption and the part that includes discretionary adjustments beyond that, i.e., $prim.bal._t = prim.bal._t^{nopolicychg} + prim.bal._t^{adjust}$. The fiscal gap indicator is the latter in terms of GDP[b], which we solve for on the left-hand side. The intuition of the fiscal gap is the "adjustment of the primary balance to GDP ratio that is required to implement a given trajectory of the debt-to-GDP ratio." It can be computed as the interest expenditure to GDP ratio minus the GDP denominator effect plus the primary deficit[c] in terms of GDP under the no-policy change assumption plus the reduction in the debt to GDP ratio compared to the previous period. The first two terms on the right side (interest-growth differential effect) can be combined as follows: $(i_t - g_t) \cdot \frac{1}{1+g_t}\frac{debt_{t-1}}{gdp_{t-1}}$, that is the interest-growth differential weighted by the debt to GDP ratio of the previous period (and divided by the GDP growth factor). When comparing the fiscal gap between situations with different initial values of the debt ratio, the following should be noted: In the case of a positive interest-growth differential ($i > g$), a higher debt level, ceteris paribus, increases the fiscal gap, meaning more effort is needed to keep the debt ratio constant. Conversely, in the case of a negative interest-growth differential ($i < g$), a higher debt level makes it increasingly easier to stabilize the debt ratio, meaning in this case, a higher debt ratio, ceteris paribus, increases fiscal leeway.[d] The last two determinants have an intuitive interpretation: the higher the no-policy-change primary deficit and the higher the targeted reduction in the debt-to-GDP ratio, the higher the required adjustment of the primary balance, and hence the fiscal gap of that year. The fiscal gap is related to the S1 and S2 indicators in the sense that all measure primary balance adjustment requirements. The S1 and S2 indicators condense the information into a single number, a constant permanent upfront adjustment such that the debt-to-GDP ratio is exactly 60% in 2070 (S1) or the debt-to-GDP ratio converges to a finite value when letting time go to infinity (S2). In contrast, the fiscal gap, as described above, gives more information about when in the future adjustment is required to comply with a debt-to-GDP trajectory. Throughout the FISK-FSR 2025, the targeted debt-to-GDP ratio is the path according to the debt safeguard of the new European Fiscal Framework.

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[a] The decomposition depends on the timing of debt issuance. For simplified illustration, it was assumed that the debt is issued at the end of the year, i.e., the intra-year primary balance is still irrelevant for interest payment in t. In the model and analysis, the debt issuance occurs at the start of the period. In addition, stock-flow adjustments are taken into account. See Schuster (2025).

[b] Note that the definition was changed in contrast to FSR 2021. In FSR 2021, the fiscal gap was defined as the primary balance adjustment that leaves the debt-to-GDP ratio constant, this means including the 'change in the debt-to-GDP' ratio term from the formula above. The new definition is more closely related to other existing indicators, such as the S1 and S2 indicators of the European Commission.

[c] Or minus the no-policy-change primary balance.

[d] The difference equation for the debt ratio has the eigenvalue $1 + i - g$. This means the system is asymptotically stable (eigenvalue less than 1) when $i < g$, and unstable (eigenvalue greater than 1) when $i > g$.

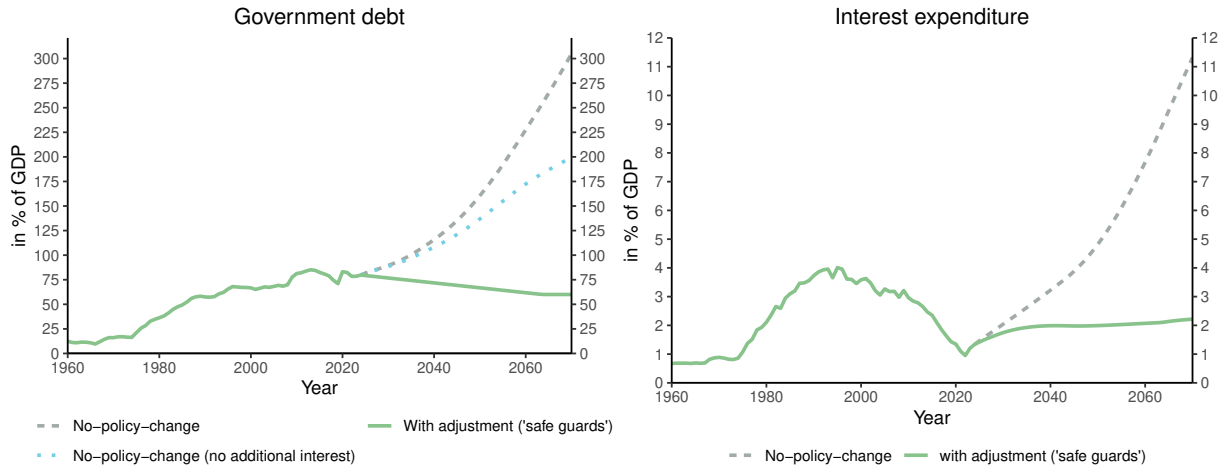
Box 6: The Sustainability Indicators S1 and S2 of the European Commission

The European Commission (EC) uses two key indicators to measure the fiscal sustainability of the EU member states. The S1 indicator measures the permanent fiscal effort (in terms of GDP) which, if implemented next year, will bring the debt-to-GDP ratio to 60% in the year 2070. The European Commission has been using this definition since its Debt Sustainability Monitor 2022. Before, the target year for S1 to reach 60% was $t + 15$. In addition, the old definition included a phase-in period for the permanent fiscal adjustment. The S1 indicator computed in FISK-FSR 2021 also followed the old definition, whereas S1 is computed according to the new definition in this report. In the case of gradually increasing aging costs, the S1 indicator is typically associated with an implicit debt trajectory that is U-shaped, meaning that the 60% target has to be overshot during the period before the target year, such that when reaching 60% in the target year, the debt-to-GDP ratio is on an upward sloping path.

In contrast, the S2 indicator does not postulate a target year or a debt-to-GDP target. It is defined as the permanent fiscal effort (in terms of GDP) required to stabilize the government debt-to-GDP ratio at an infinite horizon. As the debt-to-GDP dynamics are saddle-path stable (when $i > g$), there is a unique value that fulfills this requirement. To facilitate the computations, 2070 is defined as a cut-off year, assuming that aging costs, interest rates, and growth rates remain constant afterward. The S2 indicator is closely related to, and of similar size as, the fiscal gap at the end of the forecasting horizon.

Finance (MoF), Figure 26 reports no-policy-change debt-to-GDP and interest expenditure trajectories[77]. In the baseline, debt-to-GDP would increase up to 300% of GDP by 2070, of which about 100% of GDP arises from additional interest payments. These results always have to be interpreted with care, as by the nature of debt-to-GDP dynamics, even small deviations from the saddle-path (if $i > g$) will eventually lead to large deviations in the debt-to-GDP ratio if no corrections are allowed and the projection horizon is sufficiently long. In its last long-term forecast in 2022, the MoF projected a debt-to-GDP ratio of 120.8% by 2060, which is significantly lower than the 227.5% simulated in this report.

Figure 26: Development of the Debt-to-GDP Ratio and Interest Expenditure: Adjustment versus No Policy Change



Source: FISK OLG Model.

[77] The no-policy-change debt and interest payments have been computed, like the S1 and S2 indicators, mechanically from given primary balance projections, without macroeconomic feedback effects from the model agents.

Table 8: Results of the Baseline

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.6	1.0	1.2	1.2	1.1	1.3	1.4
Private consumption, nominal	3.3	9.7	2.3	3.2	3.2	3.3	3.0	3.0	3.4
Wage sum, nominal	3.7	8.2	1.9	3.0	3.1	3.2	3.1	3.3	3.4
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.9	3.1	3.2	3.3	3.2	3.0
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.3	0.3	0.4	0.5	0.5
Labor (in hours)	0.6	0.6	0.0	0.1	0.1	0.1	-0.0	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	0.0	-0.1	-0.2	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.2	0.0	0.0	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.8	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.7	0.6	0.6	0.6	0.7
Absolute									
Working hours (in millions)	7 325	7 268	7 252	7 393	7 452	7 502	7 492	7 447	7 573
Hours/employed (per year)	1 699	1 619	1 607	1 595	1 599	1 604	1 604	1 605	1 611
Labor share (in %)	54.2	55.4	57.5	57.3	57.1	57.0	56.8	57.1	57.4
GDP, nominal (2023 = 100)	83.6	100.0	106.5	124.4	145.5	170.5	232.8	317.5	442.3
GDP, real (2023 = 100)	97.7	100.0	99.7	105.1	111.5	118.4	132.5	148.6	170.2
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.3	69.7	69.8	71.0	71.8	71.0	72.2
Participation rate 20-74 (in %)	70.0	70.3	70.9	71.3	71.5	72.6	73.6	72.8	74.1
Participation rate 15-64 (in %)	77.6	78.5	79.9	82.5	83.8	84.5	84.3	84.5	84.9
Participation rate 25-54 (in %)	88.6	89.2	90.5	92.4	93.0	93.1	93.4	93.6	93.8
Participation rate 55-64 (in %)	57.4	61.2	63.7	68.8	72.7	75.0	75.2	75.1	76.6
Participation rate 60-64 (in %)	34.0	38.9	42.3	49.8	53.7	55.4	56.8	57.3	58.7
Effective retirement age (in years)	60.7	61.8	62.8	63.2	63.8	63.7	63.7	63.9	63.9
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.0	4.8	4.7
Employed (in 1 000)	4 311	4 490	4 513	4 634	4 660	4 678	4 672	4 639	4 701
Employed (in % of population)	48.5	49.2	49.1	49.6	49.0	48.6	47.5	46.8	46.9
Pensioners (in 1 000)	2 223	2 365	2 412	2 577	2 753	2 900	3 097	3 206	3 249
Pensioners (in % of population)	25.0	25.9	26.2	27.6	29.0	30.1	31.5	32.4	32.4
Pension benefit ratio (in %)	54.0	54.3	56.8	56.3	54.2	51.9	49.5	48.4	48.1

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 8 (cont'd): Results of the Baseline

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 358	1 342	1 350	1 393	1 393	1 392
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.2	60.6	60.6
CO_2e emissions (in Mt)	80.1	68.1	64.9	60.3	54.8	52.1	47.6	47.0	47.0
of which: ESR	50.2	43.7	41.7	36.5	30.8	27.8	22.8	22.1	22.1
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	54.0	53.1	53.7	54.1	55.9	56.8	56.7
Administration	7.5	7.8	7.8	7.6	7.5	7.4	7.4	7.3	7.2
Health care	7.1	7.7	7.9	8.1	8.5	8.9	9.6	10.0	10.3
in kind	6.8	7.4	7.5	7.8	8.2	8.5	9.2	9.5	9.8
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	1.9	2.5	2.8	3.1
in kind	0.7	0.8	0.8	1.0	1.2	1.4	1.9	2.3	2.7
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.4
Education	4.7	4.8	4.9	4.9	4.9	4.9	5.0	5.1	5.1
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.3	1.2	1.1
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.1	16.3	16.2	16.3	16.5	16.4
AVSG - legacy system	8.6	8.5	8.8	7.7	6.3	4.8	2.2	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.0	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.5	6.6	8.8	12.6	14.8	15.5
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.9	0.7
Other transfers	1.6	2.0	2.0	1.8	1.8	1.8	1.8	1.8	1.6
Investment	3.1	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Subsidies	1.6	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Other expenditures	4.1	5.0	5.6	4.9	5.0	5.0	5.5	5.5	5.4
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.7	0.7	0.6
Revenues	49.6	50.1	51.2	50.8	50.7	50.5	50.5	50.2	50.0
Taxes on consumption	8.9	9.2	9.1	9.2	9.2	9.3	9.4	9.2	9.2
Taxes on labor	24.8	24.3	25.5	25.1	25.1	25.0	25.0	25.1	25.2
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	3.5	3.7	3.8	3.9	3.8	3.7
Taxes on pensions	2.7	2.6	3.0	3.0	2.9	2.8	2.6	2.6	2.6
Taxes on energy	2.4	1.9	2.2	2.0	1.8	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.5
Other revenues	6.3	6.8	6.8	6.6	6.6	6.6	6.6	6.6	6.6
Primary balance (target path)	2.0	-1.4	-0.2	-0.0	0.1	0.2	0.5	0.6	0.2
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.6	-1.8	-1.8	-1.8	-1.5	-1.5	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.3	2.3	2.3	2.3	2.0	2.0	2.0
Fiscal space	**-0.0**	**0.0**	**-2.5**	**-2.2**	**-3.1**	**-3.8**	**-5.9**	**-7.2**	**-7.0**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.7*	*-2.3*	*-3.0*	*-3.6*	*-5.4*	*-6.6*	*-6.7*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.0*	*2.6*	*3.2*	*4.8*	*7.7*	*11.3*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.2*	*-4.3*	*-5.6*	*-6.8*	*-10.3*	*-14.2*	*-18.0*
Public debt (no policy change)	*71.0*	*78.6*	*81.8*	*89.5*	*100.5*	*115.8*	*160.5*	*227.5*	*304.9*
S1 indicator					*5.1*				
S2 indicator					*6.6*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

3.3. Sensitivity and Scenario Analyses

In this section, the robustness of the projection of the baseline scenario is examined by presenting sensitivity scenarios regarding key assumptions. This allows conclusions to be drawn about the relative importance of individual assumptions. In addition, counterfactual scenarios, as well as specific policy scenarios that diverge from the no-policy-change assumption, are analyzed. Table 9 compares the fiscal gap, the S1 and S2 indicators, the level of real GDP, and GHG emissions of the sensitivity scenarios. Detailed tables of each scenario can be found in the annex.

Population

Changes in the population structure are one of the main factors influencing fiscal sustainability. The development of **net migration** is particularly subject to projection uncertainty. Therefore, alternative scenarios were simulated, including the upper migration variant according to Statistics Austria (from 2025 to 2070, an average increase of 47 200 persons per year instead of 36 100) and the lower migration variant (an increase of 24 900 instead of 36 100 persons). It must be emphasized that the assumption is made that an immigrant (given their age) corresponds to an average resident in their socioeconomic characteristics. Significant discrepancies in socioeconomic characteristics could have quantitatively significant impacts on the long-term macroeconomic and fiscal projection and could potentially reverse the following conclusions (see, e.g., Holler and Schuster, 2020). In the upper migration variant, the age dependency ratio (65+/20-64) in 2070 is 53.1% instead of 55.8%. The number of employed persons in the same year amounts to 5.1 million instead of 4.7 million. Accordingly, there is a significant improvement in long-term fiscal indicators. The long-term fiscal gap in 2070 is reduced to 6.3% of GDP (instead of 7.0%). The positive effect on the sustainability of public finances is largely explained by a dampened increase in the pension expenditure ratio. Due to the migration-induced decline in the average age, further shifts occur in the expenditure structure: health care and long-term care expenditures decrease relative to GDP, while family transfers and education expenditures increase in comparison to GDP. The net effect of this shift slightly supports the reduction of the fiscal gap compared to the baseline scenario. The effects of the lower migration variant are correspondingly opposite. In this case, the fiscal gap in 2070 increases to 7.8% of GDP. The development of life expectancy is another important determinant of the long-term fiscal position. Statistics Austria provides a high **life expectancy** scenario (life expectancy at birth in 2070: women 93.7 instead of 91.3, men 91.3 instead of 88.5). According to the FISK analysis, in the high life expectancy scenario, the number of pensioners in 2070 is 283 000 persons higher. Pension, health care, and long-term care expenditures in 2070 are 0.8%, 0.2%, and 0.3% of GDP higher than in the baseline scenario, respectively, while education costs are reduced by 0.2% of GDP. Consequently, the fiscal gap increases to 7.7% of GDP at the end of the projection horizon in the high life expectancy scenario. To make the results more comparable with the findings of the Ageing Report, a scenario was implemented in which, instead of the population projections from Statistics Austria, those from **Eurostat (EUROPOP2023)** were used. As illustrated in Figure 10, Eurostat forecasts a significantly lower population than Statistics Austria (2070: 9.5 million instead of 10.0 million persons). Eurostat assumes, on average (measured for 2025 to 2070), higher net migration (40 900 instead of 36 100 p.a.), fewer births (80 600 instead of 86 600 p.a.), and more deaths (112 100 instead of 104 300 p.a.). Applying the Eurostat population projection would increase the fiscal gap in 2070 by 0.2% of GDP.

Productivity and Indexation

The future development of **technological progress** is one of the central assumptions that, although derived from the past, fundamentally enters the analysis as an exogenous factor. To examine the impact of this assumption, labor productivity growth was symmetrically increased by (growth scenario) or reduced by (stagnation scenario) 0.5% per annum. Converted into total factor productivity growth rates, this corresponds to a deviation of approximately +/-0.3% per annum. It was assumed that growth would

Table 9: Overview of the Results from the Sensitivity Scenarios

	Fiscal space						S1	S2
Scenarios	2023	2030	2040	2050	2060	2070		
Baseline	0.0	-2.2	-3.8	-5.9	-7.2	-7.0	5.1	6.6
Population STAT: higher migration	0.0	-2.0	-3.5	-5.4	-6.5	-6.3	4.6	6.1
Population STAT: lower migration	0.0	-2.4	-4.2	-6.5	-8.0	-7.8	5.5	7.2
Population STAT: higher life expectancy	0.0	-1.7	-3.4	-5.8	-7.7	-7.7	5.0	7.2
Eurostat (EUROPOP2023) population forecast	0.0	-2.6	-4.1	-5.8	-7.0	-7.2	5.1	6.7
Higher labor productivity growth (+0.5pp)	0.0	-1.9	-3.1	-4.9	-6.0	-5.7	4.3	5.7
Lower labor productivity growth (-0.5pp)	0.0	-2.5	-4.5	-6.9	-8.5	-8.4	5.8	7.4
CPI-deflator-ratio converges back to 2019 level	0.0	-2.3	-2.8	-4.8	-6.0	-5.9	4.3	5.6
Health sector cost-containment	0.0	-2.1	-3.5	-5.5	-6.6	-6.3	4.7	6.0
Labor share converges back to 2019 level	0.0	-2.7	-4.4	-6.5	-7.8	-7.5	5.6	7.1
Higher unemployment rate (+0.5pp)	0.0	-2.2	-3.9	-6.0	-7.3	-7.2	5.1	6.8
Trend of reduction in hours/employed until 2050	0.0	-2.4	-4.5	-7.1	-8.5	-8.3	5.9	7.8
Lower participation (-2pp)	0.0	-2.6	-4.5	-6.6	-7.9	-7.7	5.7	7.3
Lower participation 55-64 (-6pp)	0.0	-2.7	-4.4	-6.5	-7.7	-7.5	5.6	7.1
Statutory retirement age +1 year after 2035	0.0	-2.3	-3.4	-5.5	-6.7	-6.5	4.7	6.2
Lower interest (3% nominal rate in the long run)	0.0	-2.2	-3.8	-5.8	-6.9	-6.5	4.9	6.7
Higher interest (5% nominal rate in the long run)	0.0	-2.2	-3.9	-6.3	-7.6	-7.5	5.2	6.5
No ESR non-compliance costs after 2030	0.0	-2.2	-3.6	-5.3	-6.5	-6.4	4.6	6.0
Higher CO_2 prices (WAM assumptions)	0.0	-2.3	-4.3	-6.9	-8.1	-7.8	5.7	7.3
WAM scenario	0.0	-2.7	-4.0	-6.6	-7.9	-7.6	5.6	7.2
Constant revenue-to-GDP ratio	0.0	-2.0	-3.3	-5.4	-6.5	-6.2	4.6	5.9
Full consolidation	-	-	-	-	-	-	-	-

	real GDP (2023 = 100)				Emissions in $MtCO_2e$			
Scenarios	2023	2030	2050	2070	2023	2030	2050	2070
Baseline	100.0	105.1	132.5	170.2	68.1	60.3	47.6	47.0
Population STAT: higher migration	100.0	106.0	137.3	180.9	68.1	60.6	48.8	49.2
Population STAT: lower migration	100.0	104.3	127.7	159.2	68.1	60.0	46.3	44.7
Population STAT: higher life expectancy	100.0	107.3	137.8	177.2	68.1	61.5	50.3	49.9
Eurostat (EUROPOP2023) population forecast	100.0	102.2	127.8	162.4	68.1	58.5	45.1	44.5
Higher labor productivity growth (+0.5pp)	100.0	105.4	148.0	210.3	68.1	60.6	53.2	58.1
Lower labor productivity growth (-0.5pp)	100.0	104.7	118.4	137.3	68.1	59.9	42.5	37.9
CPI-deflator-ratio converges back to 2019 level	100.0	105.2	133.0	170.8	68.1	59.5	44.0	43.5
Health sector cost-containment	100.0	105.1	132.1	168.8	68.1	60.3	47.5	46.8
Labor share converges back to 2019 level	100.0	104.1	129.8	166.0	68.1	59.4	45.6	44.6
Higher unemployment rate (+0.5pp)	100.0	105.1	132.3	169.5	68.1	60.3	47.5	46.9
Trend of reduction in hours/employed until 2050	100.0	105.0	128.2	163.7	68.1	60.3	46.8	45.7
Lower participation (-2pp)	100.0	104.5	130.2	167.1	68.1	60.2	47.0	46.3
Lower participation 55-64 (-6pp)	100.0	104.5	130.5	167.8	68.1	60.2	47.2	46.6
Statutory retirement age +1 year after 2035	100.0	105.1	133.1	170.9	68.1	60.3	47.7	47.1
Lower interest (3% nominal rate in the long run)	100.0	105.2	132.5	170.3	68.1	60.3	47.6	47.0
Higher interest (5% nominal rate in the long run)	100.0	105.1	132.4	169.9	68.1	60.3	47.5	46.9
No ESR non-compliance costs after 2030	100.0	105.1	132.5	170.2	68.1	60.3	47.6	47.0
Higher CO_2 prices (WAM assumptions)	100.0	104.7	130.9	168.0	68.1	59.5	36.7	36.9
WAM scenario	100.0	105.1	131.5	168.7	68.1	52.4	24.0	23.9
Constant revenue-to-GDP ratio	100.0	105.1	132.3	169.5	68.1	60.3	47.5	46.8
Full consolidation	100.0	104.6	129.0	162.2	68.1	60.1	46.4	44.3

Source: own calculations.

converge to the new value between 2025 and 2030. Compared to the baseline scenario, the growth scenario results in significantly higher economic output. Real GDP is approximately 24% higher in 2070 than in the baseline scenario. Government revenues are largely proportional to GDP. By assumption, this is also the case for most expenditures (income elasticity of 1 for many transfers and public consumption). The effect on the primary balance ratio is therefore limited to those expenditures that do not grow with productivity. Specifically, these are explicitly inflation-indexed expenditures, such as long-term care al-

lowances and, above all, current pension payments.[78] In the growth scenario (stagnation scenario), the fiscal gap in 2070 amounts to 5.6% of GDP (8.4% of GDP) instead of 7.0% of GDP. Significantly stronger productivity growth can reduce the long-term fiscal gap but is unlikely to close it completely. The estimation of the effect of technological progress on fiscal sustainability indicators depends not only on the direct assumption of productivity growth but also on the extent to which automatic expenditure increases are linked to it.

The choice of **indexing** plays a crucial role in the development of individual expenditure categories. For many government transfers, such as pensions, long-term care benefits, or family allowances, valorization is automatically linked to the development of the consumer price index (CPI). When expressing budget items in percent of GDP, the underlying price component of domestic production of final goods and services, the GDP deflator, is also of relevance as it affects the denominator. The right panel of Figure 27 shows the historical development of the ratio of the two price indices. The CPI has been growing stronger on average since the beginning of the 1990s and markedly so during the energy crisis after 2022. Discrepancies between the CPI and the GDP deflator can be caused by import price shocks (e.g., more expensive energy imports). In the baseline, a standard assumption is applied, namely that the CPI and GDP deflator grow at the same rate (2% p.a. after 2029, see e.g., Kaniovski et al., 2024), meaning that the index ratio is held constant for the rest of the projection horizon. No additional import price shocks are assumed, and past shocks are treated as being permanent. In a sensitivity scenario, we look at the CPI-GDP deflator ratio returning to its 2019 value, i.e. all price shocks that have driven a wedge between the CPI and the GDP deflator since 2019 are assumed to fade out by 2040.[79] As the price component in the denominator grows faster than that in the numerator for many budget items, this leads to a reduction in the fiscal gap in 2070 by 1.1pp to 5.9% of GDP.

The drift component captures historical deviations in individual expenditure unit costs – conditional on age – from their growth with inflation and productivity. The estimated drift component is typically kept constant over the projection horizon. Standard practice has been to keep the estimated drift component constant over the projection horizon. Notably, the estimated drift growth in the health care sector is high (0.47% per year for in-kind benefits). A policy scenario was simulated to assess the effect of a **cost-containment measure in the health care sector**, set to take effect in 2025. The simulation assumed that drift growth would be halved. Consequently, the average nominal growth rate of in-kind health care benefits would be limited to 3.6% per year. As a result, expenditures on in-kind health care benefits would amount to 8.7% of GDP by 2070 instead of 9.8%. In the same year, the fiscal gap would decline to 6.3% of GDP.

Labor Market and Retirement

The recent years have seen a strong increase in the **labor share** (i.e., the total cost of labor, including self-employed, as a share of GDP) up to 58% in 2024. Based on WIFO's medium-term forecast, which does not predict a strong reversal by 2029, the baseline assumption also assumed a relatively constant share at the current value for the rest of the projection horizon. To test this assumption, we simulated an alternative scenario in which the labor share converges back to its pre-crisis level of slightly above 54%. Given the high effective taxation of labor, this leads to an increase in the fiscal gap by 0.5pp to 7.5% of GDP.[80] Next, we tested how a continued trend in the reduction of hours per employed affects the results.

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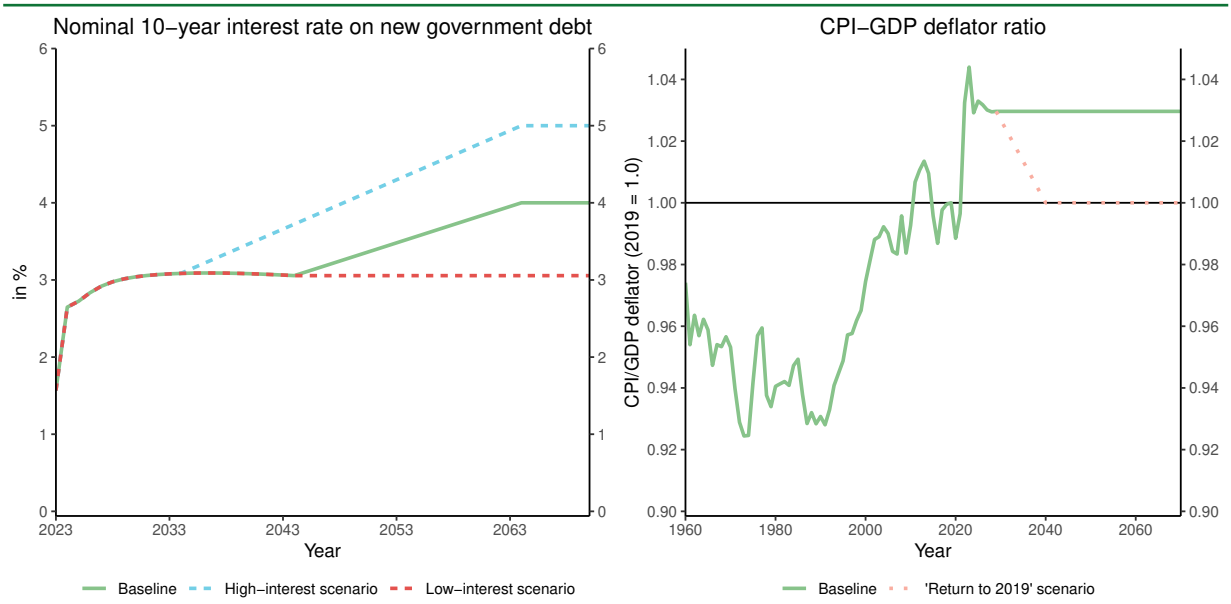
78 In contrast, the assessment base for calculating initial pensions is de facto indexed to inflation and labor productivity.

79 The effect is restricted to the indexation of budget items and GDP. Arguably, one would expect additional consequences, such as a reduction in the labor share. This was ignored for now and tested separately in the next sensitivity analysis.

80 A reasonable cause for a decrease in the labor share would be if the CPI to GDP deflator ratio returned to pre-crisis levels. This would cause a net decrease in the fiscal gap of -0.6pp in 2070 compared to the baseline.

Figure 27: Sensitivity Assumptions Concerning the Nominal Interest Rate and the CPI-Deflator Ratio



Source: Statistics Austria, own assumptions.

In the baseline, it is assumed that **hours per employed** stay relatively constant after 2029. Instead, it is now assumed that the trend of a yearly reduction of close to 0.2% continues for 20 more years. This shock is simulated in isolation, without potential changes in labor productivity. The further reduction in hours per employed would decrease the level of real GDP in 2070 by close to 4% and increase the fiscal gap by 1.3pp to 8.3% of GDP at the end of the projection horizon. As a further sensitivity check, a long-run increase in the **unemployment rate** of 0.5pp was assumed (2070: 5.2% instead of 4.7%). This decrease in long-run GDP by 0.4% and increases the fiscal gap by 0.2% of GDP. As the last labor market-related sensitivity simulation, the growth of **participation rates** over time was curbed (uniformly over age and educational groups) by 2pp in the long-run. This would result in a decrease in long-run employment by about 110 thousand persons and a reduction in long-run real GDP of 1.8% versus the baseline. The fiscal gap would grow by an additional 0.7% of GDP at the end of the projection horizon compared to the baseline.

In contrast to a uniform shock to participation, the next sensitivity check looks at **lower participation of the 55 to 64-year-old group**. In the long run, participation of that group is reduced by close to 6pp compared to the baseline, which implies a reduction of overall participation (15 to 64) by 1.5pp and a decrease in the effective retirement age by half a year, again measured against the baseline. At the end of the projection horizon, the number of pensioners is higher by close to 50 thousand persons. At the same time, average pensions are lower, leading to a drop in the pension benefit-ratio by 3%. The long-run fiscal gap would widen by an additional 0.5% of GDP in this scenario. In another, policy-related, sensitivity check, it is assumed that the statutory retirement age is increased by a year by shifting the pension corridor up by two half-year steps in 2034 and 2035. In the simulation,the effective retirement age increases by half a year as a result, while the benefit-ratio decreases by 0.3% and the number of pensioners is reduced at the end of the projection horizon by 60 thousand persons. The improvement of the fiscal gap is projected to amount to 0.4% of GDP in the long-run.

Interest Rates

In the baseline, the nominal interest rate on new debt is assumed to converge to 4% by 2050. As a sensitivity analysis, alternative **high-interest-rate** and **low-interest-rate** scenarios were considered. In the high-interest-rate scenario, the long-run rate was increased by 1 percentage point. Additionally, convergence to the long-term interest rate started 10 years earlier (2030 instead of 2040). In the low-interest-rate scenario, no convergence to an exogenous interest rate target was assumed. Instead, the nominal interest rate was assumed to stay at the last value of the used forward rates at around 3%. Figure 27 compares the different assumptions. The sensitivity scenarios reveal that a 1pp higher (lower) nominal interest rate in the long run increases (decreases) the fiscal gap by about 0.5% of GDP.

Different Climate Scenario

Table 9 contains three alternative climate-related scenarios. First, it was simulated that after the current ESR period, covering 2021 to 2030, no successor regulations will be put in place, which was assumed in the baseline. As the **non-compliance costs** are transferred abroad, paying more or less does not induce a direct macro-economic effect. The fiscal gap in 2070 would decrease by 0.6pp to 6.4% of GDP in this case. Second, we assumed higher **CO_2 price paths** for ETS1 and ETS2 according to the WAM scenario assumptions. As the ETS1 price is used as a proxy for the price of failing to meet the ESR targets, non-compliance costs per Mt were also increased. This decreases long-run emissions by around 10 Mt. At the same time, real GDP is reduced by 1.3%, and the fiscal gap widens by an additional 0.9% of GDP. Lower emissions are overcompensated by the higher price for non-compliance per Mt, such that overall non-compliance costs increase (see the middle panel in Figure 22). In total, the primary balance deteriorates in the long run by 1.7% of GDP due to changes in climate-related budget items, compared to only 0.8% of GDP in the baseline. As a third scenario, the **other WAM measures** were added to the simulation with the corresponding costs and additional emission reductions according to the NECP. The increase in the CO_2 price is less harmful to economic activity, compared to the previous scenario, as the additional measures help to increase the share of renewable energy and therefore reduce parts of the economy affected by a higher CO_2 price. In the medium term, the measures themselves also boost economic activity via additional public investment and triggered private investment such that the negative effect of the CO_2 price increase is offset. In the long run, the simulation result reports a low level of real GDP by 0.9%. The effect on the fiscal gap at the end of the projection horizon is 0.8pp.

Consolidation Effects

In the baseline, no policy reaction functions have been put in place. The fiscal gap was covered by a virtual 0-multiplier budget instrument, but the development of all other budget items was simulated assuming further policy intervention. In this section, we relax this assumption by simulating two scenarios. First, we look at the effect if the government automatically adjusted the tax system such that the **revenue-to-GDP** share stayed constant at the 2025 level during the projection horizon. In particular, sinking revenues from energy taxes are compensated by increases in taxes on consumption and labor.[81] The automatic stabilization of revenues reduced the long-run fiscal gap by 0.9pp to 6.1% of GDP. This comes at the cost of lower growth – compared to the baseline – by 0.5% of real GDP in 2070. The second sensitivity simulation is based on the assumption that the **full fiscal gap is consolidated**, meaning that instead of using a virtual 0-multiplier budget instrument, actual budget items are adjusted each year such that the target primary balance is implemented and no fiscal gap is left. The composition of budget instruments is of great importance for the results, as different instruments affect the economy differently. The consolidation was simulated using the technical assumption that the relative structure of expenditure and revenue items was approximately kept constant, meaning expenditure cuts and tax increases proportional to the

[81] A similar assumption was used in the baseline of Schiman-Vukan (2022).

relative shares of these items in the long-run budget.[82] This has sizable effects on long-run GDP, which is close to 5% lower than in the baseline in 2070. Relating this to the consolidation effort results in an ex-post[83] multiplier of about 0.7. The ex-ante consolidation effort required to effectively close the fiscal gap of 7.0% of GDP is estimated to be 9.1% of GDP in 2070. Assuming a different composition of consolidation instruments can consequently lead to a higher or lower drop in real GDP.

[82] Some budget items, such as the ESR non-compliance costs, were excluded from the consolidation efforts.

[83] The ex-post multiplier, relates the actual change in the primary balance, e.g., including indirect effects on the tax bases, to the change in real GDP, in contrast to the ex-ante multiplier (see Schuster, 2019).

4. COMPARISON OF EXISTING LONG-RUN PROJECTIONS FOR AUSTRIA

Several analyses assess the sustainability of public finances in Austria. Among these, at the national level, the long-term forecast by the Federal Ministry of Finance (MoF), the Austrian Institute of Economic Research (WIFO), the Environment Agency Austria (UBA), and the Austrian Fiscal Council (FISK) are particularly important due to their role in the national and international fiscal policy framework and their regular publications. The MoF combines the macroeconomic and budget forecasts from WIFO (Schiman-Vukan, 2022) and a climate module focusing on the macroeconomic and budgetary effects of climate change and climate policy by UBA (Gugele et al., 2022)[84] into its official long-term budget forecast (Federal Ministry of Finance, 2022). Besides these comprehensive approaches, which cover all parts of the government budget, the Austrian Pension Commission (ASK) produces additional in-depth long-term analyses of the Austrian pension system (Austrian Pension Commission, 2024a,b).

Table 10: Comparison of Main Results of Budget Projections

in % of GDP	2023	2023 to 2070	2023 to 2060	2023 to 2030	2030 to 2040	2040 to 2050	2050 to 2060	2060 to 2070
Primary government expenditure								
MoF	50.6	-	*0.6*	*-0.1*	*0.5*	*0.2*	*-0.1*	-
FISK	51.5	*5.2*	*5.3*	*1.6*	*1.0*	*1.8*	*0.9*	*-0.1*
Demography-related expenditure*								
MoF	27.6	-	*4.5*	*1.9*	*1.3*	*0.6*	*0.7*	-
AR	27.6	*2.7*	*2.3*	*1.5*	*0.3*	*0.1*	*0.4*	*0.3*
FISK	28.3	*6.7*	*6.3*	*2.4*	*1.3*	*1.5*	*1.1*	*0.4*
Government revenue								
MoF	48.9	-	*1.0*	*0.9*	*0.1*	*0.0*	*-0.0*	-
FISK	50.1	*-0.1*	*0.2*	*0.7*	*-0.3*	*-0.0*	*-0.2*	*-0.3*
Primary balance				2030	2040	2050	2060	2070
MoF	-1.7	-	*0.4*	*-0.7*	*-1.1*	*-1.4*	*-1.3*	-
AR/DSM**	-1.3	*-2.0*	*-1.6*	*-2.2*	*-2.4*	*-2.5*	*-3.0*	*-3.3*
FISK	-1.4	*-5.3*	*-5.1*	*-2.3*	*-3.6*	*-5.4*	*-6.6*	*-6.7*

*) Excluding familiy transfers; **) DSM (2023) until 2034, combination of DSM (2023) and AR (2024) for 2035 to 2070.
Source: AR (2024), DSM (2023), MoF (2022), WIFO (2022), own calculations.

At the European level, reports from the European Commission (EC) are particularly relevant due to their role in setting fiscal targets and evaluating compliance with European fiscal rules. The age-dependent expenditure categories are covered by the Ageing Report (AR, European Commission, 2024b) in a three-year interval. The AR results are incorporated into the annually published Debt Sustainability Monitor (DSM, European Commission, 2024a) to provide long-term primary balance and government debt ratio forecasts. Compared to the national long-term forecasting exercises, the EC reports show three limitations: First, long-term revenue developments are ignored in the Ageing Report and are only superficially covered in the DSM. Second, the long-term part of the DSM is a stochastic simulation exercise that limits its forecasting horizon to 30 years. Macroeconomic interactions and behavioral changes of economic agents are ignored. Third, the Ageing Report's assumptions and methodology prioritize cross-country homogeneity over detailed country specifics, resulting in significant time lags between the base year and publication date (AR 24 uses 2022 as the base year). This chapter focuses on the comparison of key findings of the MoF long-term forecast, the EC reports, and the FISK-FSR 2025. Due to its thorough approach in the case of pension forecasting the report of the ASK is also included in the comparison. As data definitions for different budget items vary by forecast, it is more instructive to compare the changes in the budget items over time rather than to projected absolute levels.

[84] As the climate-related effects are contained in the baseline and not reported separately, they could not be directly compared with FISK-FSR 2025.

All primary balance forecasts (MoF until 2060; AR/DSM and FISK until 2070) show a substantial increase in primary deficits over time (Table 10). The primary balance forecast until 2070 for the AR/DSM is performed by combining the aging costs of the most recent AR and the DSM simulation (AR, 2024, and DSM, 2023).

Table 11: Comparison of Demography-Related Budget Projections

in % of GDP	2023	2023 to 2070	2023 to 2060	2023 to 2030	2030 to 2040	2040 to 2050	2050 to 2060	2060 to 2070
Pension expenditure								
MoF	14.0	-	1.1	1.1	0.3	-0.3	0.0	-
ASK	13.7	2.3	2.5	2.1	0.1	-0.1	0.4	-0.2
AR	13.7	0.4	0.3	1.3	-0.4	-0.7	0.0	0.1
FISK	14.5	1.9	2.1	1.6	0.1	0.1	0.2	-0.1
Pension contributions								
MoF**	9.2	-	0.4	0.3	0.0	0.0	0.0	-
ASK	9.8	0.6	0.5	0.5	0.0	0.1	-0.1	0.1
AR	9.8	0.1	0.1	0.1	-0.1	0.0	0.0	0.0
FISK	9.2	0.3	0.3	0.3	-0.1	-0.0	0.0	0.0
Balance of the public pension system*								
MoF	-4.8	-	-0.8	-0.8	-0.3	0.3	0.0	-
ASK	-3.9	-1.7	-2.0	-1.6	-0.1	0.2	-0.5	0.3
AR	-3.9	-0.2	-0.2	-1.2	0.3	0.7	0.0	-0.0
FISK	-5.2	-1.6	-1.8	-1.3	-0.2	-0.1	-0.2	0.2
Health care expenditure								
MoF	7.1	-	1.3	0.2	0.6	0.4	0.1	-
AR	7.8	1.2	1.1	0.2	0.5	0.3	0.1	0.1
FISK	7.7	2.6	2.3	0.4	0.8	0.7	0.4	0.3
Long-term care expenditure								
MoF	1.6	-	1.5	0.2	0.4	0.5	0.5	-
AR	1.6	1.5	1.3	0.2	0.3	0.5	0.3	0.1
FISK	1.3	1.8	1.5	0.3	0.4	0.6	0.3	0.3
Family transfers								
MoF	1.6	-	-0.2	-0.0	-0.1	-0.0	-0.1	-
AR	-	-	-	-	-	-	-	-
FISK	1.5	-0.5	-0.3	0.1	-0.2	-0.1	-0.1	-0.1
Education expenditure								
MoF	4.9	-	0.5	0.3	-0.1	0.0	0.1	-
AR	4.5	-0.3	-0.4	-0.3	-0.1	-0.1	0.1	0.0
FISK	4.8	0.3	0.3	0.1	0.0	0.1	0.1	-0.0

*) FISK and MoF use a broader definition of pension expenditures (e.g., including equalizing allowance ("Ausgleichszulage")), and a narrower definition of pension contributions (excluding transfers from other social systems).
**) Computed from the MoF's projection of total social contributions using a constant share of 0.60.
Sources: ASK (2024), AR (2024), MoF (2022), WIFO (2022), own calculations.

The deterioration of the primary balance is least severe in the MoF forecast. This is mainly the case because the report uses macroeconomic and demographic assumptions, as well as a fiscal starting position from 2021 (before the energy crisis). Despite using 2023, a year with very high primary deficits as the starting period, the AR/DSM combination projects only slightly higher long-term primary deficits. This is mainly due to substantially lower long-term age-related expenditures compared to the MoF exercise, not taking climate-related changes to the budget into account, and more optimistic macroeconomic growth assumptions. The FISK forecast projects the highest increase in primary deficits. By 2070, the primary balance deteriorates by 5.4% of GDP compared to 2023, primarily driven by a substantial increase in age-dependent expenditure, which even exceeds the increase of the MoF projection. Additionally, government revenues are expected to grow at a slower pace in the FISK forecast compared to the other forecasts. The main reason is the considerable decline in revenues from taxation of energy, such as the

mineral oil tax, resulting from decarbonization efforts. While trends in energy consumption and taxation are not considered in the DSM, the MoF forecast applies a technical assumption, where taxation is automatically adjusted to compensate for the loss of energy tax revenue.

All forecasts attribute the long-term deterioration of public finances in Austria primarily to the increase in age-related expenditure. Nevertheless, the size of the identified age-related expenditures increases deviates substantially (Table 11). While all forecasts derive substantially increasing expenditures for health care and long-term care, the results for pension and education expenditures are mixed.

Table 12: Comparison of Assumptions of Different Long-Term Projections

	2023	2030	2040	2050	2060	2070
Population (absolute in 1 000)						
ASK	9 158	9 386	9 668	9 862	9 951	10 076
AR	9 087	9 226	9 421	9 530	9 540	9 545
MoF	9 075	9 347	9 642	9 904	10 078	-
FISK	9 132	9 350	9 634	9 827	9 906	10 018
Number 65+/number 15-64 (in %)						
ASK	30.2	37.3	44.7	47.7	50.4	50.8
AR	30.1	36.4	43.4	46.6	50.4	52.3
MoF	29.9	36.0	43.2	45.2	46.2	-
FISK	29.9	36.8	44.7	47.8	50.6	51.1
Share 65+/population						
ASK	19.8	23.3	26.7	27.9	28.8	29.0
AR	19.8	22.9	26.2	27.6	29.1	29.9
MoF	19.6	22.6	26.0	26.8	27.0	-
FISK	19.7	23.2	26.7	27.9	29.0	29.1
GDP, real (2023=100)						
ASK	100.0	107.8	122.2	137.0	151.7	173.0
AR	100.0	109.7	125.5	144.1	161.1	180.5
MoF	100.0	107.5	122.2	137.9	155.7	-
FISK	100.0	105.2	118.6	132.8	149.0	170.7
TFP						
ASK	-0.02	0.45	0.63	0.56	0.60	0.62
AR	0.36	0.63	1.00	0.89	0.85	0.80
MoF	-0.77	0.51	0.64	0.58	0.60	-
FISK	-1.90	0.68	0.83	0.75	0.73	0.72
Labor productivity						
ASK	-0.04	0.90	1.26	1.12	1.20	1.24
AR	0.61	1.02	1.51	1.37	1.30	1.23
MoF	-0.14	1.02	1.28	1.15	1.20	-
FISK	-1.85	0.81	1.11	1.16	1.24	1.16
Participation rate 15-64 (in %)						
ASK	77.7	81.2	83.1	82.8	82.8	82.9
AR	77.8	78.9	80.9	81.2	81.3	81.3
MoF	76.4	81.4	83.5	83.1	83.6	-
FISK	78.5	82.5	84.5	84.3	84.5	84.9
10-y nominal market interest rate						
AR/DSM	3.0	3.1	3.5	3.9	4.0	4.0
MoF	2.8	3.4	3.7	3.6	3.7	-
FISK	2.0	3.0	3.1	3.3	3.8	4.0

Sources: ASK (2024), AR (2024), MoF (2022), WIFO (2022), own calculations.

The AR identifies the lowest aging-related expenditure increases of all considered forecasts due to low expected increases in pension expenditures and an expected decrease in education expenditures. The FISK projections show the highest growth in aging-related expenditure due to strong increases in health care, long-term care, and pension expenditures. Because of the strong deviations of demographic and

macroeconomic variables in the last years from former predictions, the MoF results, which were already published in 2022, should be interpreted with caution. The MoF and the FISK model derive increasing long-term education expenditures, in contrast to the AR. Overall, the AR can be identified as an outlier of the considered forecasting, by predicting considerably lower aging-related expenditure dynamics.

The largest forecasting deviations among the considered forecasting exercises exist for pension expenditures. Despite using the lowest participation rates and highest long-term dependency ratios, the EC Ageing Report calculates a mere increase in annual pension expenditures of 0.4% of GDP by 2070, while the ASK expects an increase of 2.3% of GDP by 2070. The low increase in pension expenditure in the AR in % of GDP is mainly due to a denominator effect. The assumed high growth rates for real GDP (denominator), which are driven by high TFP, counteract the age-related increase in expenditure (numerator). Additionally, the short-run increase of only 0.8% of GDP between 2023 and 2025 seems implausibly small, suggesting that the strong effect of indexing to lagged CPI inflation may not have been fully accounted for. The FISK forecast for pension expenditures is close to the ASK forecast but slightly below. The increase in pension expenditure according to the MoF forecast is between the results of the AR and FISK, but still based on substantially more optimistic demographic projections (with a dependency ratio of 46.2% in 2060, compared to 50.4% to 50.6% in the other forecasts, see Table 12).

In the case of long-term care and health care expenditures the FISK forecasts substantially higher expenditures than the AR and the MoF, where the difference for health care expenditures is especially pronounced. The FISK forecasts an increase of health care expenditure by 2.6% of GDP until 2070. This replicates a result that has already been observed for the last vintage of forecasting exercises (AR 2021, FISK-FSR 2021, and MoF 2019). The higher health-care expenditures are due to the additional consideration of a historic trend component in the FISK model. This component covers a positive historic trend in health-care expenditures that cannot be explained by income elasticities, technological developments, or demographic changes. Similarly to the FISK analysis, the MoF 2022 forecast also incorporates an estimated drift component; however, to reflect some cost containment efforts in the health sector, it is assumed that the drift component shrinks within the projection horizon. In contrast, the AR implicitly assumes the drift component to be zero.

In the AR 2024, long-term projections calculate a decrease in education expenditures. This trend is primarily attributed to demographic changes, notably the decline in the school age population. The reduced demand for educational services leads to lower public spending on education over time. The FISK and MoF analyses also feature the decline in the school age population. Unlike the AR, the increasing share of secondary and tertiary education, which implies higher expenditure per person in the education system, counteracts the reduction in numbers. Both models forecast increasing education expenditure, while the increase is even stronger in the MoF projection.

Family transfers, despite being demography-related, are not covered in the AR. The MoF and the FISK projection forecast a significant decrease in family transfers, mainly due to strict inflation indexation. The reduction is especially pronounced in the very long run. The projected decrease in expenditure for family transfers by the FISK sums up to 0.5% of GDP until 2070. To enable a comparison with the AR, the aggregate figure for demography-related expenditure excludes family transfers.

LIST OF ABBREVIATIONS

A-LMM	Austrian Labor Market Model
AMS	Arbeitsmarktservice (Public Employment Service Austria)
APCC	Austrian Panel on Climate Change
APG	Allgemeines Pensionsgesetz (General Pensions Act)
ASK	Alterssicherungskommission (Pension Commission)
ASVG	Allgemeines Sozialversicherungsgesetz (General Social Insurance Act)
CB-IAM	Cost-Benefit Impact Assessment Model
CE-IAM	Cost-Effectiveness Impact Assessment Model
CES	Constant Elasticity of Substitution
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
COFOG	Classification of the Functions of Government
CPI	Consumer Price Index
EC	European Commission
ESA	European System of National Accounts
ESR	Effort Sharing Regulation
ESSPROS	European System of Social Protection Statistics
ETS	(European) Emissions Trading System
FISK	Austrian Fiscal Advisory Council
FSR	Fiscal Sustainability Report
GDP	Gross Domestic Product
GHG	Greenhouse Gases
GJ	Gigajoule (10^9 Joule)
IAM	Impact Assessment Model
IHS	Institute for Advanced Studies (Vienna)
IPCC	Intergovernmental Panel on Climate Change
LULUCF	Land Use, Land-Use Change, and Forestry
MoF	Austrian Federal Ministry of Finance
Mt	Megatonne (10^6 Tonnes)
NDF	Natural Disaster Fund
NECP	National Energy and Climate Plan
NTA	National Transfer Accounts
OLG	Overlapping Generations
PJ	Petajoule (10^{15} Joule)
pp	Percentage Points
SCC	Social Cost of Carbon
SHA	System of Health Accounts
SNA	System of National Accounts
SSP	Shared Socioeconomic Pathway
t	Metric Tonne
TFP	Total Factor Productivity
TJ	Terajoule (10^{12} Joule)
WAM	With Additional Measures Scenario (from the NECP)
WEM	With Existing Measures Scenario (from the NECP)
WIFO	Austrian Institute of Economic Research

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APPENDIX - ADDITIONAL TABLES AND FIGURES

Table 13: Scenario Results: Higher Migration (STAT2024)

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 199	9 434	9 673	9 886	10 239	10 479	10 750
Share 65+	18.9	19.7	20.5	23.0	25.1	26.1	27.1	27.9	28.0
Share 80+	5.2	5.9	6.0	6.6	7.2	8.3	11.1	11.1	11.7
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	39.5	44.7	47.1	50.0	52.5	53.1
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.5	33.4	33.4	34.7	35.8	36.1
Share widows and widowers	6.2	6.0	6.0	5.9	5.8	5.6	5.3	4.8	4.1
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.7	11.4	9.3	7.6	6.4
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.4	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	28.0	29.6	32.4	34.9	37.0
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.6	1.2	1.3	1.4	1.2	1.4	1.5
Private consumption, nominal	3.3	9.7	2.4	3.3	3.4	3.4	3.1	3.1	3.6
Wage sum, nominal	3.7	8.2	1.9	3.1	3.3	3.3	3.2	3.5	3.5
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.9	3.2	3.3	3.5	3.4	3.3
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.3	0.4	0.4	0.6	0.5
Labor (in hours)	0.6	0.6	0.1	0.3	0.2	0.2	0.1	0.1	0.2
of which: population	0.3	0.6	0.3	0.4	0.3	0.3	0.2	0.1	0.2
of which: employed/population	0.5	-0.0	0.0	-0.1	-0.2	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.3	0.0	0.0	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.7	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.7	0.6	0.6	0.6	0.6
Absolute									
Working hours (in millions)	7 325	7 268	7 280	7 482	7 617	7 736	7 860	7 952	8 197
Hours/employed (per year)	1 699	1 619	1 609	1 595	1 598	1 602	1 600	1 601	1 605
Labor share (in %)	54.2	55.4	57.5	57.3	57.1	57.0	56.7	57.0	57.2
GDP, nominal (2023 = 100)	83.6	100.0	106.7	125.3	147.6	174.0	240.9	333.3	469.8
GDP, real (2023 = 100)	97.7	100.0	100.0	106.0	113.1	121.0	137.3	156.1	180.9
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.4	69.9	70.1	71.3	72.2	71.5	72.5
Participation rate 20-74 (in %)	70.0	70.3	71.0	71.5	71.8	73.0	74.1	73.3	74.5
Participation rate 15-64 (in %)	77.6	78.5	80.0	82.5	83.9	84.6	84.3	84.5	84.9
Participation rate 25-54 (in %)	88.6	89.2	90.6	92.4	92.9	93.1	93.3	93.5	93.7
Participation rate 55-64 (in %)	57.4	61.2	63.7	68.7	72.7	75.0	75.2	75.0	76.4
Participation rate 60-64 (in %)	34.0	38.9	42.2	49.8	53.6	55.4	56.7	57.2	58.5
Effective retirement age (in years)	60.7	61.8	62.7	63.2	63.7	63.6	63.6	63.8	63.8
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.0	4.8	4.7
Employed (in 1 000)	4 311	4 490	4 524	4 691	4 767	4 830	4 912	4 968	5 106
Employed (in % of population)	48.5	49.2	49.2	49.7	49.3	48.9	48.0	47.4	47.5
Pensioners (in 1 000)	2 223	2 365	2 412	2 580	2 760	2 914	3 129	3 271	3 362
Pensioners (in % of population)	25.0	25.9	26.2	27.3	28.5	29.5	30.6	31.2	31.3
Pension benefit ratio (in %)	54.0	54.3	56.8	56.6	54.7	52.5	50.1	49.0	48.7

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 13 (cont'd): Scenario Results: Higher Migration (STAT)

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 324	1 364	1 352	1 366	1 423	1 436	1 449
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.1	60.6	60.6
CO_2e emissions (in Mt)	80.1	68.1	65.0	60.6	55.3	52.9	48.8	48.8	49.2
of which: ESR	50.2	43.7	41.7	36.6	31.1	28.3	23.4	22.9	23.1
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	53.9	53.0	53.5	53.8	55.4	56.2	56.1
Administration	7.5	7.8	7.8	7.5	7.4	7.3	7.3	7.2	7.1
Health care	7.1	7.7	7.8	8.1	8.5	8.9	9.6	9.9	10.3
in kind	6.8	7.4	7.5	7.7	8.1	8.5	9.1	9.5	9.7
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.6
Long-term care	1.3	1.3	1.4	1.5	1.7	1.9	2.4	2.7	3.0
in kind	0.7	0.8	0.8	1.0	1.1	1.3	1.9	2.2	2.6
cash benefits	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.4
Education	4.7	4.8	4.9	4.9	4.9	4.9	5.1	5.3	5.3
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.3	1.2	1.1
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.0	16.1	16.0	15.9	15.9	15.8
AVSG - legacy system	8.6	8.5	8.8	7.6	6.2	4.7	2.1	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.0	1.5	0.6	0.1	0.0
APG pension account	0.8	1.8	2.6	4.5	6.6	8.6	12.2	14.3	14.9
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.8	0.7
Other transfers	1.6	2.0	2.0	1.8	1.8	1.8	1.8	1.8	1.6
Investment	3.1	3.7	3.9	3.9	3.9	3.9	3.9	3.9	4.0
Subsidies	1.6	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Other expenditures	4.1	5.0	5.6	4.9	5.0	5.0	5.5	5.5	5.5
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.6	0.7	0.6
Revenues	49.6	50.1	51.2	50.8	50.7	50.5	50.4	50.2	50.0
Taxes on consumption	8.9	9.2	9.0	9.2	9.2	9.2	9.3	9.2	9.1
Taxes on labor	24.8	24.3	25.5	25.1	25.0	25.0	24.9	25.0	25.2
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.4	3.5	3.7	3.9	4.0	3.9	3.8
Taxes on pensions	2.7	2.6	3.0	3.0	2.9	2.8	2.6	2.5	2.5
Taxes on energy	2.4	1.9	2.2	2.0	1.8	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.6
Other revenues	6.3	6.8	6.8	6.6	6.7	6.7	6.7	6.7	6.7
Primary balance (target path)	2.0	-1.4	-0.2	-0.1	0.0	0.1	0.4	0.5	0.2
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.6	-1.9	-1.9	-1.9	-1.6	-1.6	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.3	2.4	2.4	2.4	2.1	2.1	2.0
Fiscal space	**-0.0**	**0.0**	**-2.5**	**-2.0**	**-2.8**	**-3.5**	**-5.4**	**-6.5**	**-6.3**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.7*	*-2.2*	*-2.8*	*-3.3*	*-5.0*	*-6.0*	*-6.1*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.0*	*2.6*	*3.1*	*4.5*	*7.1*	*10.3*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.2*	*-4.2*	*-5.4*	*-6.4*	*-9.5*	*-13.1*	*-16.4*
Public debt (no policy change)	*71.0*	*78.6*	*81.6*	*88.5*	*98.1*	*111.4*	*150.9*	*209.7*	*277.4*
S1 indicator					*4.6*				
S2 indicator					*6.1*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 14: Scenario Results: Lower Migration (STAT2024)

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 182	9 264	9 335	9 384	9 413	9 334	9 287
Share 65+	18.9	19.7	20.5	23.3	25.9	27.3	28.9	30.2	30.4
Share 80+	5.2	5.9	6.0	6.7	7.4	8.7	12.0	12.2	13.1
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.4	46.6	49.8	54.3	58.3	59.2
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.3	32.9	33.6	34.9	35.4
Share widows and widowers	6.2	6.0	6.0	6.0	6.0	5.9	5.7	5.2	4.5
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.6	9.5	7.8	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.1	58.4	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.3	27.8	29.3	32.1	34.7	36.8
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.6	0.9	1.0	1.1	0.9	1.1	1.2
Private consumption, nominal	3.3	9.7	2.3	3.0	3.1	3.2	2.8	2.8	3.3
Wage sum, nominal	3.7	8.2	1.9	2.8	3.0	3.1	3.0	3.2	3.3
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.8	3.0	3.1	3.2	3.0	2.8
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.3	0.3	0.3	0.5	0.5
Labor (in hours)	0.6	0.6	0.0	-0.0	-0.1	-0.0	-0.2	-0.1	0.0
of which: population	0.3	0.6	0.2	0.1	0.1	0.1	-0.0	-0.1	-0.0
of which: employed/population	0.5	-0.0	0.0	-0.2	-0.2	-0.1	-0.2	-0.1	0.0
of which: hours/employed	-0.1	-0.0	-0.2	0.0	0.0	0.0	0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.8	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.7	0.6	0.6	0.6	0.7
Absolute									
Working hours (in millions)	7 325	7 268	7 226	7 304	7 288	7 270	7 124	6 941	6 945
Hours/employed (per year)	1 699	1 619	1 605	1 596	1 601	1 606	1 608	1 611	1 617
Labor share (in %)	54.2	55.4	57.5	57.4	57.2	57.1	57.0	57.3	57.6
GDP, nominal (2023 = 100)	83.6	100.0	106.3	123.5	143.5	166.9	224.5	301.5	414.1
GDP, real (2023 = 100)	97.7	100.0	99.5	104.3	109.8	115.8	127.7	140.9	159.2
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.2	69.6	69.5	70.6	71.4	70.5	71.8
Participation rate 20-74 (in %)	70.0	70.3	70.9	71.2	71.2	72.3	73.1	72.2	73.7
Participation rate 15-64 (in %)	77.6	78.5	79.8	82.4	83.7	84.4	84.2	84.5	84.9
Participation rate 25-54 (in %)	88.6	89.2	90.4	92.4	93.0	93.2	93.4	93.7	93.9
Participation rate 55-64 (in %)	57.4	61.2	63.7	68.8	72.7	75.1	75.3	75.1	76.8
Participation rate 60-64 (in %)	34.0	38.9	42.3	49.8	53.7	55.5	56.8	57.3	58.8
Effective retirement age (in years)	60.7	61.8	62.8	63.3	63.8	63.7	63.8	64.0	63.9
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.0	4.9	4.7
Employed (in 1 000)	4 311	4 490	4 503	4 577	4 552	4 526	4 431	4 309	4 295
Employed (in % of population)	48.5	49.2	49.0	49.4	48.8	48.2	47.1	46.2	46.2
Pensioners (in 1 000)	2 223	2 365	2 411	2 572	2 744	2 886	3 066	3 144	3 138
Pensioners (in % of population)	25.0	25.9	26.3	27.8	29.4	30.8	32.6	33.7	33.8
Pension benefit ratio (in %)	54.0	54.3	56.8	56.0	53.7	51.3	48.8	47.7	47.5

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 14 (cont'd): Scenario Results: Lower Migration (STAT)

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 322	1 353	1 331	1 333	1 362	1 348	1 334
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.3	60.2	60.6	60.7
CO_2e emissions (in Mt)	80.1	68.1	64.9	60.0	54.2	51.3	46.3	45.3	44.7
of which: ESR	50.2	43.7	41.6	36.3	30.5	27.4	22.2	21.3	21.0
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	54.0	53.2	53.9	54.4	56.4	57.5	57.4
Administration	7.5	7.8	7.9	7.6	7.6	7.5	7.5	7.4	7.3
Health care	7.1	7.7	7.9	8.1	8.6	9.0	9.7	10.1	10.4
in kind	6.8	7.4	7.5	7.8	8.2	8.6	9.3	9.7	9.9
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	2.0	2.6	2.9	3.2
in kind	0.7	0.8	0.8	1.0	1.2	1.4	2.0	2.4	2.8
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5
Education	4.7	4.8	4.9	4.9	4.8	4.8	4.9	5.0	5.0
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.2	1.1	1.0
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.2	16.5	16.5	16.8	17.2	17.1
AVSG - legacy system	8.6	8.5	8.8	7.7	6.4	4.9	2.2	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.1	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.6	6.7	8.9	12.9	15.4	16.2
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.1	0.9	0.7
Other transfers	1.6	2.0	2.0	1.8	1.8	1.8	1.8	1.8	1.6
Investment	3.1	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Subsidies	1.6	2.3	1.9	1.8	1.7	1.7	1.7	1.7	1.7
Other expenditures	4.1	5.0	5.6	4.9	5.0	5.0	5.4	5.5	5.4
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.7	0.7	0.6
Revenues	49.6	50.1	51.2	50.8	50.7	50.5	50.5	50.3	50.0
Taxes on consumption	8.9	9.2	9.1	9.2	9.3	9.4	9.4	9.3	9.3
Taxes on labor	24.8	24.3	25.5	25.1	25.1	25.1	25.0	25.2	25.3
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	3.5	3.6	3.7	3.8	3.6	3.5
Taxes on pensions	2.7	2.6	3.0	3.0	2.9	2.8	2.7	2.7	2.7
Taxes on energy	2.4	1.9	2.2	2.0	1.9	1.6	1.6	1.5	1.4
Other taxes	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.5
Other revenues	6.3	6.8	6.8	6.6	6.6	6.6	6.6	6.6	6.6
Primary balance (target path)	2.0	-1.4	-0.2	0.1	0.2	0.3	0.6	0.7	0.3
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.6	-1.7	-1.7	-1.7	-1.4	-1.4	-1.9
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.3	2.2	2.2	2.2	1.9	1.9	1.9
Fiscal space	**-0.0**	**0.0**	**-2.6**	**-2.4**	**-3.4**	**-4.2**	**-6.5**	**-8.0**	**-7.8**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.8*	*-2.4*	*-3.2*	*-3.9*	*-5.9*	*-7.3*	*-7.4*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.1*	*2.7*	*3.3*	*5.1*	*8.3*	*12.5*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.2*	*-4.4*	*-5.9*	*-7.2*	*-11.0*	*-15.6*	*-20.0*
Public debt (no policy change)	*71.0*	*78.6*	*82.0*	*90.4*	*102.8*	*120.0*	*170.7*	*247.3*	*337.1*
S1 indicator					*5.5*				
S2 indicator					*7.2*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 15: Scenario Results: Higher Life Expectancy (STAT2024)

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 193	9 378	9 566	9 733	10 006	10 149	10 293
Share 65+	18.9	19.7	20.5	23.3	25.9	27.3	29.1	30.5	30.9
Share 80+	5.2	5.9	6.0	6.8	7.6	9.0	12.6	13.0	14.0
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.4	46.6	50.0	55.0	59.3	60.5
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.5	33.3	33.1	34.1	35.3	35.7
Share widows and widowers	6.2	6.0	6.0	5.9	5.7	5.5	5.2	4.6	3.8
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.9	11.7	9.6	7.9	6.6
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.1	58.4	57.6	56.8
Share highest attained education: tertiary	22.7	24.2	24.8	26.3	27.8	29.3	32.0	34.5	36.6
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.8	1.2	1.3	1.3	1.1	1.3	1.4
Private consumption, nominal	3.3	9.7	2.5	3.4	3.4	3.5	3.1	3.0	3.5
Wage sum, nominal	3.7	8.2	2.1	3.2	3.3	3.3	3.2	3.3	3.4
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.8	2.9	3.0	3.1	2.9	2.8
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	0.1	0.3	0.4	0.4	0.4	0.5	0.5
Labor (in hours)	0.6	0.6	0.1	0.2	0.1	0.1	-0.0	0.0	0.1
of which: population	0.3	0.6	0.3	0.3	0.2	0.2	0.1	0.1	0.1
of which: employed/population	0.5	-0.0	-0.0	-0.2	-0.2	-0.2	-0.2	-0.1	-0.0
of which: hours/employed	-0.1	-0.0	-0.1	0.0	0.1	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.8	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.7	0.7	0.6	0.7	0.7
Absolute									
Working hours (in millions)	7 325	7 268	7 348	7 530	7 606	7 669	7 676	7 632	7 762
Hours/employed (per year)	1 699	1 619	1 624	1 616	1 621	1 627	1 629	1 631	1 637
Labor share (in %)	54.2	55.4	57.6	57.5	57.4	57.3	57.2	57.4	57.7
GDP, nominal (2023 = 100)	83.6	100.0	107.3	126.6	149.3	175.9	241.9	330.5	460.8
GDP, real (2023 = 100)	97.7	100.0	100.7	107.3	114.6	122.4	137.8	154.6	177.2
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.4	70.0	70.0	71.2	72.0	71.2	72.3
Participation rate 20-74 (in %)	70.0	70.3	71.1	71.6	71.7	72.9	73.8	72.9	74.2
Participation rate 15-64 (in %)	77.6	78.5	80.2	82.9	84.2	85.0	84.8	85.0	85.4
Participation rate 25-54 (in %)	88.6	89.2	90.9	92.9	93.5	93.7	94.0	94.2	94.4
Participation rate 55-64 (in %)	57.4	61.2	63.9	69.1	73.1	75.5	75.7	75.5	77.1
Participation rate 60-64 (in %)	34.0	38.9	42.2	49.9	53.9	55.6	57.0	57.5	59.0
Effective retirement age (in years)	60.7	61.8	63.0	63.2	63.7	63.7	63.7	63.9	63.9
Unemployment rate (in %)	6.5	5.7	6.5	5.5	5.2	5.1	5.0	4.8	4.7
Employed (in 1 000)	4 311	4 490	4 525	4 660	4 691	4 713	4 712	4 678	4 741
Employed (in % of population)	48.5	49.2	49.2	49.7	49.0	48.4	47.1	46.1	46.1
Pensioners (in 1 000)	2 223	2 365	2 422	2 604	2 811	2 995	3 275	3 454	3 533
Pensioners (in % of population)	25.0	25.9	26.3	27.8	29.4	30.8	32.7	34.0	34.3
Pension benefit ratio (in %)	54.0	54.3	56.5	55.4	53.0	50.6	48.1	47.4	47.3

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 15 (cont'd): Scenario Results: Higher Life Expectancy

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 328	1 392	1 397	1 422	1 488	1 489	1 491
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.3	60.2	60.7	60.7
CO_2e emissions (in Mt)	80.1	68.1	65.1	61.5	56.6	54.4	50.3	49.8	49.9
of which: ESR	50.2	43.7	41.8	37.2	31.9	29.1	24.1	23.5	23.5
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	53.6	52.4	53.0	53.4	55.6	57.2	57.4
Administration	7.5	7.8	7.8	7.5	7.3	7.2	7.2	7.2	7.0
Health care	7.1	7.7	7.8	8.0	8.4	8.8	9.6	10.1	10.5
in kind	6.8	7.4	7.5	7.7	8.1	8.5	9.2	9.7	10.0
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	2.0	2.6	3.0	3.4
in kind	0.7	0.8	0.8	1.0	1.2	1.4	2.0	2.5	2.9
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5
Education	4.7	4.8	4.9	4.8	4.8	4.7	4.8	4.9	4.9
Family support	1.6	1.5	1.6	1.5	1.5	1.4	1.2	1.1	1.0
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.0	16.2	16.2	16.6	17.2	17.2
AVSG - legacy system	8.6	8.5	8.8	7.7	6.3	4.9	2.3	0.8	0.2
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.1	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.5	6.5	8.7	12.8	15.5	16.5
Survivors	1.6	1.5	1.5	1.4	1.2	1.1	0.9	0.7	0.5
Other transfers	1.6	2.0	2.0	1.7	1.8	1.7	1.8	1.8	1.6
Investment	3.1	3.7	3.9	3.8	3.8	3.8	3.8	3.8	3.9
Subsidies	1.6	2.3	1.9	1.8	1.7	1.7	1.7	1.7	1.7
Other expenditures	4.1	5.0	5.5	4.9	4.9	4.9	5.4	5.4	5.4
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.7	0.7	0.6
Revenues	49.6	50.1	51.0	50.5	50.4	50.1	50.2	50.1	49.9
Taxes on consumption	8.9	9.2	8.8	9.0	9.0	9.1	9.3	9.2	9.2
Taxes on labor	24.8	24.3	25.5	25.2	25.2	25.2	25.1	25.2	25.4
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.4	3.5	3.6	3.6	3.7	3.6	3.5
Taxes on pensions	2.7	2.6	3.0	3.0	2.9	2.7	2.6	2.7	2.7
Taxes on energy	2.4	1.9	2.2	2.0	1.9	1.6	1.7	1.6	1.4
Other taxes	0.5	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.6
Other revenues	6.3	6.8	6.8	6.5	6.5	6.5	6.5	6.5	6.5
Primary balance (target path)	2.0	-1.4	-0.4	-0.2	0.0	0.2	0.4	0.6	0.2
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.8	-1.9	-1.9	-1.8	-1.6	-1.5	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.4	2.4	2.4	2.3	2.1	2.0	2.0
Fiscal space	**-0.0**	**0.0**	**-2.3**	**-1.7**	**-2.6**	**-3.4**	**-5.8**	**-7.7**	**-7.7**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.6*	*-1.9*	*-2.6*	*-3.2*	*-5.4*	*-7.0*	*-7.5*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.0*	*2.5*	*3.0*	*4.5*	*7.4*	*11.2*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.1*	*-3.9*	*-5.1*	*-6.2*	*-9.9*	*-14.4*	*-18.7*
Public debt (no policy change)	*71.0*	*78.6*	*81.1*	*86.4*	*94.8*	*107.6*	*149.3*	*218.4*	*302.2*
S1 indicator					*5.0*				
S2 indicator					*7.2*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 16: Scenario Results: Eurostat (EUROPOP2023) Population Forecast

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 119	9 225	9 330	9 421	9 530	9 540	9 545
Share 65+	18.9	19.7	20.5	22.9	25.1	26.2	27.6	29.1	29.9
Share 80+	5.2	5.9	6.0	6.4	6.8	7.9	10.8	11.0	12.1
Number 65+/number 20-64 (in %)	30.7	32.3	34.1	39.5	44.7	47.2	50.6	54.8	57.0
Number 0-19/number 20-64 (in %)	31.4	31.7	32.5	33.1	33.4	32.9	32.7	33.8	33.9
Share widows and widowers	6.2	6.0	6.1	6.0	5.9	5.9	5.8	5.4	4.9
Share highest attained education: primary	18.2	16.5	15.8	14.1	12.7	11.4	9.3	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.4	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.5	28.0	29.6	32.4	34.8	36.8
Change in % vs. previous year									
GDP, real	1.8	-1.0	-0.1	0.8	1.1	1.2	1.1	1.2	1.2
Private consumption, nominal	3.3	9.7	1.6	2.7	3.0	3.1	2.9	3.0	3.3
Wage sum, nominal	3.7	8.2	1.3	2.8	3.0	3.1	3.1	3.3	3.3
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.9	3.2	3.4	3.5	3.3	3.1
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.2	0.1	0.2	0.3	0.4	0.5	0.5
Labor (in hours)	0.6	0.6	-0.5	0.1	0.1	0.1	-0.1	-0.0	0.0
of which: population	0.3	0.6	-0.0	0.2	0.2	0.1	0.0	-0.0	0.0
of which: employed/population	0.5	-0.0	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.0
of which: hours/employed	-0.1	-0.0	-0.2	0.0	0.0	0.0	0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.8	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.6	0.6	0.6	0.6	0.6
Absolute									
Working hours (in millions)	7 325	7 268	7 100	7 209	7 264	7 313	7 300	7 201	7 205
Hours/employed (per year)	1 699	1 619	1 597	1 581	1 584	1 589	1 594	1 600	1 609
Labor share (in %)	54.2	55.4	57.4	57.2	56.9	56.8	56.6	57.0	57.3
GDP, nominal (2023 = 100)	83.6	100.0	105.0	121.2	140.9	164.5	224.5	306.0	422.5
GDP, real (2023 = 100)	97.7	100.0	98.1	102.2	107.8	114.2	127.8	143.2	162.4
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.1	69.5	69.6	70.6	71.5	70.6	71.5
Participation rate 20-74 (in %)	70.0	70.3	70.8	71.1	71.3	72.3	73.2	72.3	73.3
Participation rate 15-64 (in %)	77.6	78.5	79.6	82.1	83.5	84.0	84.1	84.4	84.7
Participation rate 25-54 (in %)	88.6	89.2	90.3	92.1	92.6	92.8	93.1	93.4	93.7
Participation rate 55-64 (in %)	57.4	61.2	63.6	68.5	72.4	74.8	74.9	75.0	76.3
Participation rate 60-64 (in %)	34.0	38.9	42.3	49.7	53.5	55.3	56.6	57.1	58.5
Effective retirement age (in years)	60.7	61.8	62.9	63.3	63.9	63.8	63.8	64.0	64.0
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.0	4.9	4.8
Employed (in 1 000)	4 311	4 490	4 447	4 559	4 586	4 602	4 580	4 501	4 477
Employed (in % of population)	48.5	49.2	48.8	49.4	49.2	48.9	48.1	47.2	46.9
Pensioners (in 1 000)	2 223	2 365	2 390	2 512	2 655	2 788	2 969	3 096	3 173
Pensioners (in % of population)	25.0	25.9	26.2	27.2	28.5	29.6	31.2	32.5	33.2
Pension benefit ratio (in %)	54.0	54.3	56.7	57.0	55.3	53.2	50.2	48.5	47.9

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 16 (cont'd): Scenario Results: Eurostat (EUROPOP2023) Population Forecast

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 311	1 315	1 279	1 276	1 315	1 320	1 315
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.1	60.6	60.6
CO_2e emissions (in Mt)	80.1	68.1	64.3	58.5	52.5	49.6	45.1	44.7	44.5
of which: ESR	50.2	43.7	41.3	35.4	29.6	26.5	21.6	21.0	20.9
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	54.3	53.6	54.2	54.6	55.9	56.7	57.0
Administration	7.5	7.8	7.9	7.8	7.7	7.6	7.5	7.5	7.3
Health care	7.1	7.7	7.9	8.2	8.6	9.0	9.6	10.0	10.4
in kind	6.8	7.4	7.6	7.8	8.2	8.6	9.2	9.5	9.8
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	1.9	2.4	2.7	3.1
in kind	0.7	0.8	0.8	1.0	1.1	1.3	1.8	2.2	2.6
cash benefits	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.4
Education	4.7	4.8	5.0	5.0	5.0	5.0	4.9	5.0	4.9
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.3	1.1	1.0
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.9	16.2	16.3	16.3	16.3	16.6	16.9
AVSG - legacy system	8.6	8.5	8.8	7.7	6.2	4.6	2.1	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.0	1.5	0.5	0.1	0.0
APG pension account	0.8	1.8	2.6	4.6	6.7	8.9	12.5	14.8	15.8
Survivors	1.6	1.5	1.5	1.5	1.4	1.3	1.2	1.1	1.0
Other transfers	1.6	2.0	2.0	1.8	1.8	1.8	1.8	1.8	1.6
Investment	3.1	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Subsidies	1.6	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Other expenditures	4.1	5.0	5.6	5.0	5.0	5.1	5.5	5.5	5.4
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.1	0.2	0.6	0.7	0.6
Revenues	49.6	50.1	51.4	51.1	51.0	50.8	50.6	50.3	50.1
Taxes on consumption	8.9	9.2	9.3	9.4	9.4	9.4	9.4	9.3	9.3
Taxes on labor	24.8	24.3	25.4	25.0	25.0	24.9	24.9	25.0	25.2
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	3.5	3.8	3.9	4.0	3.9	3.7
Taxes on pensions	2.7	2.6	3.0	3.1	3.0	2.9	2.7	2.6	2.6
Taxes on energy	2.4	1.9	2.2	2.0	1.8	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.5
Other revenues	6.3	6.8	6.8	6.7	6.7	6.7	6.7	6.6	6.6
Primary balance (target path)	2.0	-1.4	0.3	0.1	0.2	0.3	0.5	0.6	0.3
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.1	-1.6	-1.7	-1.7	-1.5	-1.5	-1.9
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	1.8	2.1	2.2	2.2	2.0	2.0	1.9
Fiscal space	**-0.0**	**0.0**	**-3.1**	**-2.6**	**-3.4**	**-4.1**	**-5.8**	**-7.0**	**-7.2**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.9*	*-2.5*	*-3.3*	*-3.8*	*-5.3*	*-6.4*	*-6.9*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.1*	*2.8*	*3.4*	*5.0*	*7.8*	*11.6*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.3*	*-4.7*	*-6.0*	*-7.2*	*-10.3*	*-14.2*	*-18.5*
Public debt (no policy change)	*71.0*	*78.6*	*82.9*	*92.8*	*105.5*	*122.3*	*167.1*	*232.2*	*312.1*
S1 indicator					*5.1*				
S2 indicator					*6.7*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 17: Scenario Results: Higher Labor Productivity Growth (+0.5pp)

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	-0.3	1.6	1.7	1.8	1.6	1.8	1.9
Private consumption, nominal	3.3	9.7	5.1	3.3	3.4	3.5	3.2	3.3	3.8
Wage sum, nominal	3.7	8.2	1.2	3.5	3.7	3.8	3.7	3.9	3.9
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.9	3.1	3.2	3.3	3.2	3.0
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.4	0.5	0.5	0.6	0.7	0.7
Labor (in hours)	0.6	0.6	-0.9	0.2	0.1	0.1	-0.0	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	-0.3	-0.1	-0.2	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.8	0.1	0.1	0.1	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	1.0	1.1	1.1	1.1	1.0	1.0
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.8	1.0	1.0	1.0	1.0	1.0
Absolute									
Working hours (in millions)	7 325	7 268	7 154	7 303	7 396	7 473	7 500	7 473	7 605
Hours/employed (per year)	1 699	1 619	1 593	1 584	1 591	1 600	1 605	1 610	1 616
Labor share (in %)	54.2	55.4	57.4	57.2	57.0	57.0	57.0	57.4	57.7
GDP, nominal (2023 = 100)	83.6	100.0	105.9	125.0	150.1	180.4	259.2	371.6	543.5
GDP, real (2023 = 100)	97.7	100.0	98.9	105.4	114.8	125.4	148.0	174.7	210.3
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.0	69.4	69.7	70.9	71.8	71.1	72.3
Participation rate 20-74 (in %)	70.0	70.3	70.6	71.1	71.4	72.6	73.7	73.0	74.3
Participation rate 15-64 (in %)	77.6	78.5	79.5	82.1	83.5	84.3	84.2	84.5	84.9
Participation rate 25-54 (in %)	88.6	89.2	90.1	92.0	92.7	93.0	93.3	93.5	93.7
Participation rate 55-64 (in %)	57.4	61.2	63.5	68.7	72.8	75.3	75.7	75.7	77.3
Participation rate 60-64 (in %)	34.0	38.9	42.1	49.7	53.8	55.7	57.2	57.8	59.3
Effective retirement age (in years)	60.7	61.8	62.6	63.2	63.8	63.7	63.7	63.9	63.9
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.0	4.9	4.8
Employed (in 1 000)	4 311	4 490	4 491	4 611	4 648	4 671	4 672	4 642	4 706
Employed (in % of population)	48.5	49.2	48.9	49.3	48.9	48.5	47.5	46.9	47.0
Pensioners (in 1 000)	2 223	2 365	2 413	2 577	2 747	2 893	3 089	3 197	3 239
Pensioners (in % of population)	25.0	25.9	26.3	27.6	28.9	30.0	31.4	32.3	32.3
Pension benefit ratio (in %)	54.0	54.3	56.9	55.9	52.5	49.1	44.8	42.5	41.5

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 17 (cont'd): Scenario Results: Higher Labor Productivity Growth (+0.5pp)

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 362	1 384	1 431	1 557	1 639	1 723
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.2	60.6	60.6
CO_2e emissions (in Mt)	80.1	68.1	64.9	60.6	56.6	55.3	53.2	55.4	58.1
of which: ESR	50.2	43.7	41.7	36.6	31.9	29.6	25.5	26.1	27.3
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	54.2	53.4	53.6	53.5	54.6	55.1	54.7
Administration	7.5	7.8	7.9	7.7	7.5	7.5	7.4	7.4	7.2
Health care	7.1	7.7	7.9	8.2	8.6	9.0	9.7	10.1	10.4
in kind	6.8	7.4	7.5	7.8	8.2	8.6	9.3	9.6	9.8
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.6	1.7	1.9	2.5	2.8	3.1
in kind	0.7	0.8	0.8	1.0	1.2	1.4	1.9	2.3	2.7
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5
Education	4.7	4.8	4.9	4.9	4.9	4.9	5.0	5.2	5.2
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.3	1.2	1.1
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.9	16.1	15.8	15.4	14.8	14.6	14.2
AVSG - legacy system	8.6	8.5	8.9	7.7	6.1	4.5	1.9	0.6	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.0	1.4	0.5	0.1	0.0
APG pension account	0.8	1.8	2.6	4.5	6.4	8.3	11.4	13.0	13.4
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.8	0.6
Other transfers	1.6	2.0	2.0	1.8	1.8	1.8	1.8	1.8	1.6
Investment	3.1	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Subsidies	1.6	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Other expenditures	4.1	5.0	5.6	5.0	5.0	5.1	5.5	5.5	5.5
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.7	0.7	0.6
Revenues	49.6	50.1	51.5	51.0	50.7	50.2	49.9	49.4	49.0
Taxes on consumption	8.9	9.2	9.3	9.4	9.3	9.3	9.1	8.8	8.7
Taxes on labor	24.8	24.3	25.4	25.1	25.0	25.0	25.0	25.2	25.4
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	3.5	3.7	3.8	3.9	3.8	3.7
Taxes on pensions	2.7	2.6	3.0	3.0	2.8	2.5	2.2	2.0	1.9
Taxes on energy	2.4	1.9	2.2	2.0	1.8	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5
Other revenues	6.3	6.8	6.8	6.7	6.7	6.7	6.7	6.7	6.7
Primary balance (target path)	2.0	-1.4	0.2	-0.4	-0.2	-0.1	0.1	0.3	-0.0
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.2	-2.2	-2.2	-2.1	-1.9	-1.8	-2.2
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	1.8	2.7	2.7	2.6	2.4	2.3	2.2
Fiscal space	**-0.0**	**0.0**	**-3.0**	**-1.9**	**-2.6**	**-3.1**	**-4.9**	**-6.0**	**-5.7**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.8*	*-2.4*	*-2.9*	*-3.3*	*-4.8*	*-5.6*	*-5.7*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.0*	*2.6*	*3.1*	*4.3*	*6.5*	*9.2*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.3*	*-4.4*	*-5.5*	*-6.3*	*-9.1*	*-12.2*	*-14.9*
Public debt (no policy change)	*71.0*	*78.6*	*82.3*	*89.8*	*98.2*	*109.6*	*143.1*	*193.1*	*248.2*
S1 indicator					*4.3*				
S2 indicator					*5.7*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 18: Scenario Results: Lower Labor Productivity Growth (-0.5pp)

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	1.3	0.5	0.6	0.7	0.6	0.8	0.9
Private consumption, nominal	3.3	9.7	0.2	3.0	3.0	3.1	2.7	2.7	3.1
Wage sum, nominal	3.7	8.2	2.5	2.4	2.6	2.6	2.6	2.8	2.9
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.9	3.1	3.2	3.3	3.2	3.0
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.0	0.1	0.1	0.2	0.3	0.3
Labor (in hours)	0.6	0.6	0.8	0.1	0.0	0.0	-0.1	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	0.3	-0.2	-0.2	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	0.3	-0.0	0.0	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.5	0.4	0.5	0.5	0.4	0.4	0.4
of which: age-education structure	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.1	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.1	0.3	0.3	0.3	0.3	0.3
Absolute									
Working hours (in millions)	7 325	7 268	7 341	7 469	7 499	7 524	7 475	7 411	7 526
Hours/employed (per year)	1 699	1 619	1 619	1 605	1 605	1 606	1 601	1 600	1 605
Labor share (in %)	54.2	55.4	57.6	57.4	57.2	57.0	56.7	56.9	57.1
GDP, nominal (2023 = 100)	83.6	100.0	107.0	123.6	140.9	160.9	208.8	271.0	359.4
GDP, real (2023 = 100)	97.7	100.0	100.5	104.7	108.0	111.7	118.4	126.2	137.3
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.6	70.0	70.0	71.1	71.8	70.9	72.0
Participation rate 20-74 (in %)	70.0	70.3	71.2	71.6	71.6	72.7	73.5	72.7	73.8
Participation rate 15-64 (in %)	77.6	78.5	80.2	82.8	84.0	84.7	84.3	84.4	84.9
Participation rate 25-54 (in %)	88.6	89.2	90.9	92.7	93.2	93.3	93.4	93.6	93.7
Participation rate 55-64 (in %)	57.4	61.2	63.8	68.8	72.6	74.8	74.7	74.4	75.8
Participation rate 60-64 (in %)	34.0	38.9	42.3	49.8	53.5	55.2	56.3	56.7	58.0
Effective retirement age (in years)	60.7	61.8	62.9	63.2	63.7	63.6	63.6	63.9	63.8
Unemployment rate (in %)	6.5	5.7	6.6	5.5	5.3	5.1	5.0	4.8	4.7
Employed (in 1 000)	4 311	4 490	4 533	4 653	4 673	4 685	4 670	4 633	4 689
Employed (in % of population)	48.5	49.2	49.3	49.8	49.2	48.6	47.5	46.8	46.8
Pensioners (in 1 000)	2 223	2 365	2 411	2 577	2 755	2 904	3 104	3 216	3 265
Pensioners (in % of population)	25.0	25.9	26.2	27.6	29.0	30.1	31.6	32.5	32.6
Pension benefit ratio (in %)	54.0	54.3	56.7	56.7	56.0	55.0	54.7	55.2	56.1

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 18 (cont'd): Scenario Results: Lower Labor Productivity Growth (-0.5pp)

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 352	1 299	1 272	1 244	1 181	1 122
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.2	60.6	60.6
CO_2e emissions (in Mt)	80.1	68.1	64.9	59.9	53.0	49.0	42.5	39.9	37.9
of which: ESR	50.2	43.7	41.7	36.2	29.8	26.2	20.4	18.8	17.8
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	53.7	52.9	54.0	54.8	57.4	58.9	59.1
Administration	7.5	7.8	7.8	7.5	7.4	7.4	7.3	7.3	7.1
Health care	7.1	7.7	7.8	8.0	8.5	8.9	9.6	10.0	10.3
in kind	6.8	7.4	7.5	7.7	8.1	8.5	9.2	9.5	9.7
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	1.9	2.5	2.8	3.1
in kind	0.7	0.8	0.8	1.0	1.1	1.3	1.9	2.3	2.7
cash benefits	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.4
Education	4.7	4.8	4.9	4.8	4.8	4.8	5.0	5.1	5.1
Family support	1.6	1.5	1.6	1.6	1.5	1.4	1.3	1.2	1.0
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.7	16.2	16.8	17.2	18.0	18.8	19.1
AVSG - legacy system	8.6	8.5	8.8	7.7	6.5	5.1	2.4	0.8	0.2
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.1	1.6	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.6	6.9	9.3	13.9	16.9	18.1
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.1	0.9	0.8
Other transfers	1.6	2.0	2.0	1.7	1.8	1.7	1.8	1.8	1.6
Investment	3.1	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Subsidies	1.6	2.3	1.9	1.8	1.7	1.7	1.7	1.7	1.7
Other expenditures	4.1	5.0	5.5	4.9	4.9	5.0	5.4	5.5	5.4
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.6	0.7	0.6
Revenues	49.6	50.1	51.0	50.7	50.8	50.8	51.2	51.3	51.3
Taxes on consumption	8.9	9.2	8.9	9.0	9.2	9.4	9.7	9.7	9.8
Taxes on labor	24.8	24.3	25.5	25.2	25.1	25.0	24.9	25.0	25.1
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.4	3.5	3.7	3.8	3.8	3.7	3.6
Taxes on pensions	2.7	2.6	3.0	3.1	3.1	3.1	3.2	3.4	3.5
Taxes on energy	2.4	1.9	2.2	2.0	1.8	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.6
Other revenues	6.3	6.8	6.8	6.6	6.6	6.6	6.6	6.6	6.6
Primary balance (target path)	2.0	-1.4	-0.6	0.4	0.5	0.6	0.8	0.9	0.5
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-2.0	-1.4	-1.4	-1.4	-1.2	-1.2	-1.7
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.7	1.9	1.9	1.9	1.7	1.7	1.7
Fiscal space	**-0.0**	**0.0**	**-2.1**	**-2.5**	**-3.6**	**-4.5**	**-6.9**	**-8.5**	**-8.4**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.7*	*-2.2*	*-3.1*	*-3.9*	*-6.1*	*-7.6*	*-7.9*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.0*	*2.7*	*3.4*	*5.4*	*9.0*	*13.9*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.1*	*-4.2*	*-5.8*	*-7.3*	*-11.5*	*-16.6*	*-21.7*
Public debt (no policy change)	*71.0*	*78.6*	*81.4*	*89.3*	*102.9*	*122.1*	*179.6*	*266.9*	*373.1*
S1 indicator					*5.8*				
S2 indicator					*7.4*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 19: Scenario Results: CPI-Deflator-Ratio Converges Back to 2019 Level

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.6	1.1	1.2	1.2	1.1	1.3	1.4
Private consumption, nominal	3.3	9.7	2.2	3.4	3.5	3.5	3.0	3.0	3.4
Wage sum, nominal	3.7	8.2	1.9	3.3	3.4	3.5	3.1	3.3	3.4
GDP deflator	1.5	6.6	1.9	2.3	2.3	2.3	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.9	3.0	3.2	3.3	3.1	3.0
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.3	0.3	0.4	0.5	0.5
Labor (in hours)	0.6	0.6	0.1	0.1	0.1	0.1	-0.0	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	0.0	-0.1	-0.2	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.2	0.0	0.0	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.8	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.7	0.6	0.6	0.6	0.7
Absolute									
Working hours (in millions)	7 326	7 268	7 255	7 389	7 454	7 512	7 504	7 458	7 583
Hours/employed (per year)	1 700	1 619	1 608	1 595	1 600	1 605	1 606	1 607	1 612
Labor share (in %)	54.2	55.4	57.5	57.4	57.2	57.1	57.0	57.3	57.6
GDP, nominal (2023 = 100)	83.6	100.0	106.6	124.8	148.0	175.9	240.1	327.5	456.1
GDP, real (2023 = 100)	97.7	100.0	99.8	105.2	111.7	118.8	133.0	149.2	170.8
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.3	69.7	69.8	71.0	71.8	71.1	72.2
Participation rate 20-74 (in %)	70.0	70.3	70.9	71.3	71.5	72.7	73.7	72.9	74.1
Participation rate 15-64 (in %)	77.6	78.5	79.9	82.4	83.8	84.5	84.3	84.5	84.9
Participation rate 25-54 (in %)	88.6	89.2	90.5	92.4	93.0	93.1	93.4	93.6	93.8
Participation rate 55-64 (in %)	57.4	61.2	63.7	68.8	72.7	75.1	75.3	75.1	76.6
Participation rate 60-64 (in %)	34.0	38.9	42.2	49.8	53.7	55.5	56.8	57.3	58.7
Effective retirement age (in years)	60.7	61.8	62.8	63.2	63.8	63.7	63.7	63.9	63.9
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.0	4.8	4.7
Employed (in 1 000)	4 311	4 489	4 512	4 632	4 659	4 679	4 674	4 641	4 703
Employed (in % of population)	48.5	49.2	49.1	49.5	49.0	48.6	47.6	46.9	46.9
Pensioners (in 1 000)	2 223	2 365	2 413	2 577	2 753	2 899	3 096	3 205	3 249
Pensioners (in % of population)	25.0	25.9	26.3	27.6	29.0	30.1	31.5	32.4	32.4
Pension benefit ratio (in %)	54.0	54.3	56.7	56.1	53.7	51.0	48.3	47.4	47.4

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 19 (cont'd): Scenario Results: CPI-Deflator-Ratio Converges Back to 2019 Level

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 336	1 295	1 279	1 269	1 271	1 271
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.4	55.3	60.3	60.8	60.8
CO_2e emissions (in Mt)	80.1	68.1	64.9	59.5	53.2	49.8	44.0	43.5	43.5
of which: ESR	50.2	43.7	41.7	37.2	31.1	27.8	22.1	21.5	21.5
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	54.0	53.2	53.3	53.1	54.6	55.5	55.5
Administration	7.5	7.8	7.8	7.6	7.4	7.2	7.2	7.1	7.0
Health care	7.1	7.7	7.9	8.1	8.4	8.7	9.3	9.7	10.0
in kind	6.8	7.4	7.5	7.7	8.0	8.3	8.9	9.2	9.5
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	1.8	2.4	2.7	3.0
in kind	0.7	0.8	0.8	1.0	1.1	1.3	1.8	2.2	2.6
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.4
Education	4.7	4.8	4.9	4.9	4.8	4.7	4.8	5.0	5.0
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.2	1.1	1.0
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.1	16.2	16.0	16.0	16.2	16.2
AVSG - legacy system	8.6	8.5	8.8	7.7	6.3	4.8	2.2	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.0	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.5	6.5	8.5	12.2	14.5	15.3
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.9	0.7
Other transfers	1.6	2.0	2.0	1.8	1.8	1.7	1.8	1.7	1.6
Investment	3.1	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Subsidies	1.6	2.3	2.0	1.9	1.8	1.7	1.6	1.6	1.6
Other expenditures	4.0	5.0	5.6	5.0	5.0	5.1	5.5	5.6	5.5
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.6	0.7	0.6
Revenues	49.6	50.1	51.2	50.8	50.6	50.3	50.2	50.1	49.9
Taxes on consumption	8.9	9.2	9.1	9.2	9.2	9.2	9.3	9.1	9.1
Taxes on labor	24.8	24.3	25.4	25.1	25.1	25.1	25.0	25.2	25.3
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.1	3.8	3.4	3.5	3.7	3.8	3.9	3.8	3.7
Taxes on pensions	2.7	2.6	2.9	2.9	2.8	2.7	2.5	2.5	2.5
Taxes on energy	2.4	1.9	2.2	2.0	1.8	1.5	1.5	1.4	1.2
Other taxes	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5
Other revenues	6.3	6.8	6.8	6.7	6.7	6.7	6.7	6.7	6.7
Primary balance (target path)	2.0	-1.4	-0.3	-0.1	0.1	0.0	0.5	0.6	0.2
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.7	-2.0	-2.0	-2.0	-1.5	-1.5	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.9	2.1	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.4	2.5	2.5	2.5	2.0	2.0	2.0
Fiscal space	**0.0**	**0.0**	**-2.5**	**-2.3**	**-2.8**	**-2.8**	**-4.8**	**-6.0**	**-5.9**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.7*	*-2.4*	*-2.7*	*-2.8*	*-4.4*	*-5.4*	*-5.6*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.3*	*2.9*	*3.1*	*4.4*	*6.8*	*9.9*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.2*	*-4.7*	*-5.6*	*-5.9*	*-8.8*	*-12.3*	*-15.5*
Public debt (no policy change)	*71.0*	*78.6*	*81.8*	*90.4*	*100.6*	*112.2*	*146.9*	*202.1*	*267.1*
S1 indicator					*4.3*				
S2 indicator					*5.6*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 20: Scenario Results: Health Sector Cost-Containment

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.6	1.0	1.2	1.2	1.1	1.3	1.3
Private consumption, nominal	3.3	9.7	2.3	3.1	3.2	3.3	3.0	3.0	3.4
Wage sum, nominal	3.7	8.2	1.9	3.0	3.1	3.2	3.1	3.3	3.4
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.9	3.1	3.2	3.3	3.1	3.0
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.3	0.3	0.4	0.5	0.5
Labor (in hours)	0.6	0.6	0.0	0.1	0.1	0.1	-0.0	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	0.0	-0.1	-0.2	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.2	0.0	0.0	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.7	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	-0.0	-0.0
of which: residual	0.3	-3.4	0.3	0.5	0.7	0.6	0.6	0.6	0.7
Absolute									
Working hours (in millions)	7 325	7 268	7 253	7 393	7 453	7 503	7 492	7 446	7 570
Hours/employed (per year)	1 699	1 619	1 607	1 596	1 599	1 604	1 604	1 605	1 611
Labor share (in %)	54.2	55.4	57.5	57.3	57.1	57.0	56.9	57.1	57.4
GDP, nominal (2023 = 100)	83.6	100.0	106.5	124.3	145.4	170.2	232.0	315.7	438.6
GDP, real (2023 = 100)	97.7	100.0	99.7	105.1	111.4	118.3	132.1	147.8	168.8
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.3	69.7	69.8	71.0	71.8	71.0	72.2
Participation rate 20-74 (in %)	70.0	70.3	70.9	71.3	71.5	72.6	73.6	72.8	74.1
Participation rate 15-64 (in %)	77.6	78.5	79.9	82.5	83.8	84.5	84.3	84.5	84.9
Participation rate 25-54 (in %)	88.6	89.2	90.5	92.4	93.0	93.1	93.4	93.6	93.8
Participation rate 55-64 (in %)	57.4	61.2	63.7	68.8	72.7	75.0	75.2	75.1	76.5
Participation rate 60-64 (in %)	34.0	38.9	42.3	49.8	53.7	55.4	56.7	57.3	58.7
Effective retirement age (in years)	60.7	61.8	62.8	63.2	63.8	63.7	63.7	63.9	63.9
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.0	4.8	4.7
Employed (in 1 000)	4 311	4 490	4 513	4 634	4 660	4 678	4 671	4 639	4 700
Employed (in % of population)	48.5	49.2	49.1	49.6	49.0	48.6	47.5	46.8	46.9
Pensioners (in 1 000)	2 223	2 365	2 412	2 577	2 753	2 900	3 097	3 206	3 250
Pensioners (in % of population)	25.0	25.9	26.2	27.6	29.0	30.1	31.5	32.4	32.4
Pension benefit ratio (in %)	54.0	54.3	56.8	56.3	54.2	52.0	49.6	48.6	48.4

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 20 (cont'd): Scenario Results: Health Sector Cost-Containment

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 358	1 342	1 349	1 391	1 389	1 386
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.2	60.6	60.6
CO_2e emissions (in Mt)	80.1	68.1	64.9	60.3	54.8	52.1	47.5	46.9	46.8
of which: ESR	50.2	43.7	41.7	36.5	30.8	27.8	22.8	22.1	22.0
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	53.9	52.9	53.5	53.8	55.5	56.2	56.0
Administration	7.5	7.8	7.8	7.6	7.5	7.4	7.4	7.4	7.2
Health care	7.1	7.7	7.8	8.0	8.3	8.6	9.1	9.3	9.4
in kind	6.8	7.4	7.4	7.6	7.9	8.2	8.6	8.8	8.8
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	1.9	2.5	2.8	3.1
in kind	0.7	0.8	0.8	1.0	1.2	1.4	1.9	2.3	2.7
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5
Education	4.7	4.8	4.9	4.9	4.9	4.9	5.0	5.2	5.2
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.3	1.2	1.1
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.1	16.3	16.3	16.4	16.6	16.5
AVSG - legacy system	8.6	8.5	8.8	7.7	6.3	4.8	2.2	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.0	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.5	6.6	8.8	12.6	14.9	15.6
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.9	0.7
Other transfers	1.6	2.0	2.0	1.8	1.8	1.8	1.8	1.8	1.6
Investment	3.1	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Subsidies	1.6	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Other expenditures	4.1	5.0	5.6	4.9	5.0	5.0	5.5	5.5	5.5
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.7	0.7	0.6
Revenues	49.6	50.1	51.2	50.8	50.7	50.5	50.5	50.3	50.0
Taxes on consumption	8.9	9.2	9.1	9.2	9.2	9.3	9.3	9.2	9.1
Taxes on labor	24.8	24.3	25.5	25.1	25.1	25.0	25.0	25.1	25.2
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	3.5	3.7	3.8	3.9	3.8	3.7
Taxes on pensions	2.7	2.6	3.0	3.0	2.9	2.8	2.7	2.6	2.6
Taxes on energy	2.4	1.9	2.2	2.0	1.8	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.5
Other revenues	6.3	6.8	6.8	6.6	6.6	6.6	6.7	6.7	6.7
Primary balance (target path)	2.0	-1.4	-0.2	-0.0	0.1	0.2	0.5	0.6	0.3
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.6	-1.8	-1.8	-1.7	-1.5	-1.5	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.3	2.3	2.3	2.2	2.0	2.0	2.0
Fiscal space	**-0.0**	**0.0**	**-2.5**	**-2.1**	**-2.9**	**-3.5**	**-5.5**	**-6.6**	**-6.3**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.7*	*-2.1*	*-2.8*	*-3.3*	*-5.0*	*-6.0*	*-6.0*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.0*	*2.6*	*3.2*	*4.6*	*7.3*	*10.7*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.2*	*-4.2*	*-5.4*	*-6.5*	*-9.6*	*-13.3*	*-16.7*
Public debt (no policy change)	*71.0*	*78.6*	*81.8*	*88.9*	*99.1*	*113.1*	*154.4*	*216.4*	*287.4*
S1 indicator					*4.7*				
S2 indicator					*6.0*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 21: Scenario Results: Labor Share Converges Back to 2019 Level

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.5	0.9	1.1	1.2	1.0	1.3	1.4
Private consumption, nominal	3.3	9.7	5.1	2.8	3.2	3.2	2.9	2.9	3.4
Wage sum, nominal	3.7	8.2	1.9	2.0	3.0	3.1	3.0	3.3	3.4
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	3.0	3.3	3.5	3.7	3.6	3.4
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.1	0.2	0.3	0.3	0.5	0.5
Labor (in hours)	0.6	0.6	0.1	0.1	0.1	0.1	-0.0	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	0.1	-0.1	-0.2	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.2	0.0	0.1	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.5	0.7	0.8	0.8	0.7	0.7	0.7
of which: age-education structure	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.6	0.6	0.6	0.6	0.6
Absolute									
Working hours (in millions)	7 325	7 268	7 261	7 371	7 445	7 502	7 496	7 453	7 581
Hours/employed (per year)	1 699	1 619	1 607	1 591	1 596	1 602	1 602	1 604	1 610
Labor share (in %)	54.2	55.4	57.4	54.8	54.6	54.4	54.1	54.3	54.6
GDP, nominal (2023 = 100)	83.6	100.0	106.6	123.3	143.9	168.2	228.4	310.3	431.9
GDP, real (2023 = 100)	97.7	100.0	99.7	104.1	110.1	116.6	129.8	145.1	166.0
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.4	69.7	69.9	71.1	71.9	71.2	72.3
Participation rate 20-74 (in %)	70.0	70.3	71.0	71.3	71.5	72.7	73.7	72.9	74.2
Participation rate 15-64 (in %)	77.6	78.5	79.9	82.4	83.9	84.6	84.4	84.6	85.0
Participation rate 25-54 (in %)	88.6	89.2	90.6	92.4	93.0	93.2	93.5	93.7	93.9
Participation rate 55-64 (in %)	57.4	61.2	63.3	68.3	72.3	74.7	74.9	74.8	76.3
Participation rate 60-64 (in %)	34.0	38.9	42.0	49.5	53.4	55.2	56.5	57.1	58.5
Effective retirement age (in years)	60.7	61.8	62.6	63.2	63.7	63.6	63.7	63.9	63.8
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.1	5.0	4.8	4.7
Employed (in 1 000)	4 311	4 490	4 519	4 634	4 664	4 684	4 679	4 647	4 709
Employed (in % of population)	48.5	49.2	49.2	49.6	49.1	48.6	47.6	46.9	47.0
Pensioners (in 1 000)	2 223	2 365	2 414	2 580	2 755	2 902	3 099	3 208	3 251
Pensioners (in % of population)	25.0	25.9	26.3	27.6	29.0	30.1	31.5	32.4	32.5
Pension benefit ratio (in %)	54.0	54.3	56.8	59.3	57.2	54.9	52.0	50.4	49.8

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 21 (cont'd): Scenario Results: Labor Share Converges Back to 2019 Level

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 333	1 304	1 300	1 321	1 307	1 304
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.1	60.5	60.5
CO_2e emissions (in Mt)	80.1	68.1	64.9	59.4	53.5	50.6	45.6	44.8	44.6
of which: ESR	50.2	43.7	41.7	35.9	30.1	27.0	21.9	21.1	21.0
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	53.9	53.4	54.2	54.6	56.5	57.4	57.2
Administration	7.5	7.8	7.8	7.7	7.6	7.5	7.5	7.5	7.3
Health care	7.1	7.7	7.8	8.2	8.6	9.1	9.8	10.3	10.6
in kind	6.8	7.4	7.5	7.8	8.2	8.7	9.4	9.8	10.0
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.6
Long-term care	1.3	1.3	1.4	1.6	1.7	1.9	2.5	2.9	3.2
in kind	0.7	0.8	0.8	1.0	1.2	1.4	1.9	2.4	2.7
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5
Education	4.7	4.8	4.9	4.9	4.9	4.9	5.1	5.3	5.2
Family support	1.6	1.5	1.6	1.6	1.5	1.4	1.3	1.2	1.1
Unemployment	1.1	0.9	1.1	0.9	0.8	0.8	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.2	16.4	16.3	16.3	16.4	16.1
AVSG - legacy system	8.6	8.5	8.8	7.8	6.4	4.8	2.2	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.1	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.6	6.7	8.8	12.5	14.7	15.3
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.9	0.7
Other transfers	1.6	2.0	2.0	1.8	1.8	1.8	1.8	1.8	1.6
Investment	3.1	3.7	3.9	3.9	3.9	4.0	4.0	4.0	4.0
Subsidies	1.6	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Other expenditures	4.1	5.0	5.6	4.9	5.0	5.1	5.5	5.6	5.5
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.1	0.2	0.6	0.7	0.6
Revenues	49.6	50.1	51.3	50.8	50.7	50.5	50.5	50.3	50.0
Taxes on consumption	8.9	9.2	9.2	9.4	9.4	9.5	9.5	9.4	9.3
Taxes on labor	24.8	24.3	25.4	24.0	23.9	23.9	23.8	23.9	24.0
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	4.2	4.4	4.5	4.7	4.6	4.6
Taxes on pensions	2.7	2.6	3.0	3.2	3.1	3.0	2.8	2.7	2.6
Taxes on energy	2.4	1.9	2.2	2.0	1.8	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Other revenues	6.3	6.8	6.8	6.7	6.7	6.7	6.8	6.8	6.8
Primary balance (target path)	2.0	-1.4	-0.3	0.0	0.2	0.3	0.5	0.6	0.3
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.8	-1.7	-1.8	-1.7	-1.5	-1.5	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.4	2.2	2.3	2.2	2.0	2.0	2.0
Fiscal space	**-0.0**	**0.0**	**-2.2**	**-2.7**	**-3.6**	**-4.4**	**-6.5**	**-7.8**	**-7.5**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.5*	*-2.7*	*-3.5*	*-4.1*	*-6.0*	*-7.2*	*-7.3*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.1*	*2.7*	*3.4*	*5.2*	*8.4*	*12.3*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.0*	*-4.7*	*-6.2*	*-7.5*	*-11.2*	*-15.5*	*-19.6*
Public debt (no policy change)	*71.0*	*78.6*	*81.5*	*90.9*	*104.3*	*122.3*	*173.3*	*247.8*	*332.4*
S1 indicator					*5.6*				
S2 indicator					*7.1*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 22: Scenario Results: Higher Unemployment Rate (+0.5pp)

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.6	1.0	1.2	1.2	1.1	1.3	1.4
Private consumption, nominal	3.3	9.7	2.3	3.2	3.2	3.3	3.0	3.0	3.4
Wage sum, nominal	3.7	8.2	1.9	3.0	3.1	3.2	3.1	3.3	3.4
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.9	3.1	3.2	3.3	3.2	3.0
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.3	0.3	0.4	0.5	0.5
Labor (in hours)	0.6	0.6	0.0	0.1	0.1	0.1	-0.1	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	0.0	-0.1	-0.2	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.2	0.0	0.0	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.8	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.7	0.6	0.6	0.6	0.7
Absolute									
Working hours (in millions)	7 325	7 268	7 252	7 392	7 450	7 497	7 479	7 424	7 538
Hours/employed (per year)	1 699	1 619	1 607	1 595	1 599	1 604	1 604	1 606	1 612
Labor share (in %)	54.2	55.4	57.5	57.3	57.1	57.0	56.8	57.1	57.4
GDP, nominal (2023 = 100)	83.6	100.0	106.5	124.4	145.5	170.4	232.4	316.8	440.7
GDP, real (2023 = 100)	97.7	100.0	99.7	105.1	111.4	118.3	132.3	148.2	169.5
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.3	69.7	69.8	71.0	71.8	71.0	72.2
Participation rate 20-74 (in %)	70.0	70.3	70.9	71.3	71.5	72.6	73.6	72.8	74.1
Participation rate 15-64 (in %)	77.6	78.5	79.9	82.5	83.8	84.5	84.3	84.5	84.9
Participation rate 25-54 (in %)	88.6	89.2	90.5	92.4	93.0	93.1	93.4	93.6	93.8
Participation rate 55-64 (in %)	57.4	61.2	63.7	68.8	72.7	75.0	75.2	75.1	76.6
Participation rate 60-64 (in %)	34.0	38.9	42.3	49.8	53.7	55.4	56.7	57.3	58.7
Effective retirement age (in years)	60.7	61.8	62.8	63.2	63.8	63.7	63.7	63.9	63.9
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.2	5.2	5.2
Employed (in 1 000)	4 311	4 490	4 513	4 633	4 658	4 674	4 662	4 623	4 678
Employed (in % of population)	48.5	49.2	49.1	49.6	49.0	48.5	47.4	46.7	46.7
Pensioners (in 1 000)	2 223	2 365	2 412	2 577	2 753	2 900	3 097	3 206	3 249
Pensioners (in % of population)	25.0	25.9	26.2	27.6	29.0	30.1	31.5	32.4	32.4
Pension benefit ratio (in %)	54.0	54.3	56.8	56.3	54.2	51.9	49.4	48.3	48.1

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 22 (cont'd): Scenario Results: Higher Unemployment Rate (+0.5pp)

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 358	1 341	1 349	1 391	1 390	1 388
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.2	60.6	60.6
CO_2e emissions (in Mt)	80.1	68.1	64.9	60.3	54.8	52.0	47.5	47.0	46.9
of which: ESR	50.2	43.7	41.7	36.5	30.8	27.8	22.8	22.1	22.0
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	54.0	53.1	53.8	54.1	56.0	57.0	57.0
Administration	7.5	7.8	7.8	7.6	7.5	7.4	7.4	7.4	7.2
Health care	7.1	7.7	7.9	8.1	8.5	8.9	9.7	10.1	10.4
in kind	6.8	7.4	7.5	7.8	8.2	8.5	9.2	9.6	9.8
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	1.9	2.5	2.8	3.1
in kind	0.7	0.8	0.8	1.0	1.2	1.4	1.9	2.3	2.7
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5
Education	4.7	4.8	4.9	4.9	4.9	4.9	5.0	5.2	5.1
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.3	1.2	1.1
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.9	0.9	0.9
Pensions	13.9	14.5	15.8	16.1	16.3	16.3	16.3	16.6	16.5
AVSG - legacy system	8.6	8.5	8.8	7.7	6.3	4.8	2.2	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.0	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.5	6.6	8.8	12.6	14.8	15.6
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.9	0.7
Other transfers	1.6	2.0	2.0	1.8	1.8	1.8	1.8	1.8	1.6
Investment	3.1	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Subsidies	1.6	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Other expenditures	4.1	5.0	5.6	4.9	5.0	5.0	5.5	5.5	5.4
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.7	0.7	0.6
Revenues	49.6	50.1	51.2	50.8	50.7	50.5	50.5	50.3	50.0
Taxes on consumption	8.9	9.2	9.1	9.2	9.2	9.3	9.4	9.3	9.2
Taxes on labor	24.8	24.3	25.5	25.1	25.1	25.0	25.0	25.1	25.2
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	3.5	3.7	3.8	3.9	3.8	3.7
Taxes on pensions	2.7	2.6	3.0	3.0	2.9	2.8	2.7	2.6	2.6
Taxes on energy	2.4	1.9	2.2	2.0	1.8	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.5
Other revenues	6.3	6.8	6.8	6.6	6.6	6.6	6.6	6.7	6.7
Primary balance (target path)	2.0	-1.4	-0.2	-0.0	0.1	0.2	0.5	0.6	0.3
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.6	-1.8	-1.8	-1.8	-1.5	-1.5	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.3	2.3	2.3	2.3	2.0	2.0	2.0
Fiscal space	**-0.0**	**0.0**	**-2.5**	**-2.2**	**-3.2**	**-3.9**	**-6.0**	**-7.3**	**-7.2**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.7*	*-2.3*	*-3.0*	*-3.6*	*-5.5*	*-6.7*	*-6.9*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.0*	*2.6*	*3.2*	*4.8*	*7.8*	*11.5*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.2*	*-4.3*	*-5.7*	*-6.9*	*-10.4*	*-14.5*	*-18.5*
Public debt (no policy change)	*71.0*	*78.6*	*81.8*	*89.5*	*100.6*	*116.0*	*161.5*	*229.9*	*309.8*
S1 indicator					*5.1*				
S2 indicator					*6.8*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 23: Scenario Results: Trend of Reduction in Hours/Employed Until 2050

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.6	0.9	1.0	1.1	1.0	1.2	1.4
Private consumption, nominal	3.3	9.7	2.4	3.1	3.2	3.2	2.9	2.9	3.4
Wage sum, nominal	3.7	8.2	1.9	2.8	3.0	3.0	3.0	3.3	3.4
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.9	3.0	3.1	3.2	3.1	3.0
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.3	0.3	0.3	0.5	0.5
Labor (in hours)	0.6	0.6	0.1	-0.0	-0.1	-0.1	-0.0	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	0.0	-0.1	-0.2	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.2	-0.1	-0.1	-0.1	0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.8	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.6	0.6	0.6	0.6	0.7
Absolute									
Working hours (in millions)	7 325	7 268	7 257	7 383	7 367	7 341	7 197	7 157	7 278
Hours/employed (per year)	1 699	1 619	1 607	1 593	1 581	1 570	1 542	1 544	1 549
Labor share (in %)	54.2	55.4	57.5	57.3	57.2	57.1	56.9	57.1	57.4
GDP, nominal (2023 = 100)	83.6	100.0	106.5	124.2	144.4	167.9	225.6	306.5	426.0
GDP, real (2023 = 100)	97.7	100.0	99.8	105.0	110.5	116.5	128.2	143.2	163.7
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.3	69.7	69.8	71.0	71.8	71.0	72.2
Participation rate 20-74 (in %)	70.0	70.3	71.0	71.4	71.5	72.6	73.6	72.8	74.1
Participation rate 15-64 (in %)	77.6	78.5	79.9	82.5	83.8	84.5	84.2	84.4	84.9
Participation rate 25-54 (in %)	88.6	89.2	90.5	92.4	93.0	93.1	93.3	93.5	93.7
Participation rate 55-64 (in %)	57.4	61.2	63.7	68.8	72.7	75.0	75.2	75.0	76.5
Participation rate 60-64 (in %)	34.0	38.9	42.2	49.8	53.7	55.4	56.7	57.2	58.7
Effective retirement age (in years)	60.7	61.8	62.8	63.2	63.8	63.7	63.7	63.9	63.9
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.0	4.9	4.7
Employed (in 1 000)	4 311	4 490	4 514	4 635	4 659	4 676	4 668	4 636	4 699
Employed (in % of population)	48.5	49.2	49.1	49.6	49.0	48.5	47.5	46.8	46.9
Pensioners (in 1 000)	2 223	2 365	2 412	2 577	2 753	2 900	3 098	3 207	3 250
Pensioners (in % of population)	25.0	25.9	26.2	27.6	29.0	30.1	31.5	32.4	32.4
Pension benefit ratio (in %)	54.0	54.3	56.8	56.3	54.5	52.6	50.6	49.3	48.8

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 23 (cont'd): Scenario Results: Trend of Reduction in Hours/Employed Until 2050

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 358	1 339	1 342	1 367	1 351	1 343
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.1	60.6	60.6
CO_2e emissions (in Mt)	80.1	68.1	64.9	60.3	54.7	51.8	46.8	45.9	45.7
of which: ESR	50.2	43.7	41.7	36.4	30.8	27.7	22.5	21.6	21.5
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	53.9	53.1	54.1	54.9	57.5	58.5	58.4
Administration	7.5	7.8	7.8	7.6	7.5	7.5	7.6	7.6	7.4
Health care	7.1	7.7	7.9	8.1	8.6	9.1	9.9	10.4	10.7
in kind	6.8	7.4	7.5	7.8	8.2	8.7	9.5	9.9	10.2
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6
Long-term care	1.3	1.3	1.4	1.5	1.7	2.0	2.6	2.9	3.2
in kind	0.7	0.8	0.8	1.0	1.2	1.4	2.0	2.4	2.8
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5
Education	4.7	4.8	4.9	4.9	4.9	4.9	5.2	5.3	5.3
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.3	1.2	1.1
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.1	16.4	16.5	16.7	16.9	16.6
AVSG - legacy system	8.6	8.5	8.8	7.7	6.4	4.8	2.2	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.1	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.5	6.7	8.9	12.8	15.1	15.7
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.9	0.7
Other transfers	1.6	2.0	2.0	1.8	1.8	1.8	1.9	1.8	1.7
Investment	3.1	3.7	3.9	3.9	3.9	4.0	4.0	4.0	4.1
Subsidies	1.6	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Other expenditures	4.1	5.0	5.6	4.9	5.0	5.1	5.6	5.7	5.6
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.7	0.7	0.6
Revenues	49.6	50.1	51.2	50.8	50.8	50.7	50.9	50.6	50.4
Taxes on consumption	8.9	9.2	9.1	9.2	9.3	9.4	9.5	9.4	9.3
Taxes on labor	24.8	24.3	25.4	25.1	25.1	25.0	25.0	25.1	25.2
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	3.5	3.6	3.7	3.8	3.7	3.6
Taxes on pensions	2.7	2.6	3.0	3.0	3.0	2.9	2.8	2.7	2.6
Taxes on energy	2.4	1.9	2.2	2.0	1.9	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.6
Other revenues	6.3	6.8	6.8	6.6	6.7	6.7	6.8	6.9	6.9
Primary balance (target path)	2.0	-1.4	-0.2	0.1	0.2	0.3	0.5	0.6	0.3
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.7	-1.7	-1.7	-1.6	-1.5	-1.5	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.3	2.2	2.2	2.1	2.0	2.0	2.0
Fiscal space	**-0.0**	**0.0**	**-2.5**	**-2.4**	**-3.5**	**-4.5**	**-7.1**	**-8.5**	**-8.3**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.7*	*-2.3*	*-3.3*	*-4.2*	*-6.6*	*-7.9*	*-8.0*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.0*	*2.7*	*3.4*	*5.3*	*8.7*	*13.0*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.2*	*-4.3*	*-6.0*	*-7.5*	*-11.9*	*-16.6*	*-21.0*
Public debt (no policy change)	*71.0*	*78.6*	*81.8*	*89.5*	*102.0*	*120.4*	*176.8*	*258.0*	*350.8*
S1 indicator					*5.9*				
S2 indicator					*7.8*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 24: Scenario Results: Lower Participation (-2pp)

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.6	0.9	1.0	1.2	1.1	1.3	1.4
Private consumption, nominal	3.3	9.7	2.5	3.1	3.2	3.2	2.9	3.0	3.4
Wage sum, nominal	3.7	8.2	1.9	2.8	3.0	3.2	3.1	3.3	3.4
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.8	3.0	3.2	3.3	3.2	3.0
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.3	0.3	0.4	0.5	0.5
Labor (in hours)	0.6	0.6	0.1	-0.0	-0.1	0.1	-0.0	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	0.0	-0.3	-0.3	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.2	0.0	0.1	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.8	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.7	0.6	0.6	0.6	0.7
Absolute									
Working hours (in millions)	7 325	7 268	7 255	7 323	7 305	7 355	7 348	7 306	7 431
Hours/employed (per year)	1 699	1 619	1 607	1 599	1 606	1 610	1 610	1 612	1 618
Labor share (in %)	54.2	55.4	57.5	57.4	57.2	57.0	56.8	57.1	57.4
GDP, nominal (2023 = 100)	83.6	100.0	106.5	123.6	143.6	168.0	228.9	312.1	434.5
GDP, real (2023 = 100)	97.7	100.0	99.7	104.5	109.9	116.6	130.2	145.9	167.1
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.3	68.9	68.1	69.3	70.1	69.4	70.5
Participation rate 20-74 (in %)	70.0	70.3	70.9	70.5	69.9	71.0	72.0	71.2	72.5
Participation rate 15-64 (in %)	77.6	78.5	79.9	81.5	81.8	82.5	82.3	82.5	82.9
Participation rate 25-54 (in %)	88.6	89.2	90.5	91.4	90.8	91.0	91.2	91.5	91.7
Participation rate 55-64 (in %)	57.4	61.2	63.7	68.0	71.2	73.5	73.7	73.6	75.1
Participation rate 60-64 (in %)	34.0	38.9	42.2	49.3	52.7	54.4	55.8	56.3	57.7
Effective retirement age (in years)	60.7	61.8	62.8	63.2	63.7	63.6	63.6	63.8	63.8
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.1	5.0	4.8	4.7
Employed (in 1 000)	4 311	4 490	4 514	4 579	4 550	4 568	4 563	4 532	4 593
Employed (in % of population)	48.5	49.2	49.1	49.0	47.9	47.4	46.4	45.7	45.8
Pensioners (in 1 000)	2 223	2 365	2 412	2 584	2 763	2 911	3 108	3 217	3 260
Pensioners (in % of population)	25.0	25.9	26.2	27.6	29.1	30.2	31.6	32.5	32.5
Pension benefit ratio (in %)	54.0	54.3	56.8	55.9	53.5	51.4	49.0	47.8	47.3

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 24 (cont'd): Scenario Results: Lower Participation (-2pp)

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 357	1 336	1 338	1 373	1 369	1 367
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.1	60.6	60.6
CO_2e emissions (in Mt)	80.1	68.1	64.9	60.2	54.6	51.7	47.0	46.4	46.3
of which: ESR	50.2	43.7	41.7	36.4	30.7	27.6	22.5	21.8	21.8
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	53.9	53.4	54.5	54.9	56.8	57.7	57.5
Administration	7.5	7.8	7.8	7.6	7.6	7.5	7.5	7.5	7.3
Health care	7.1	7.7	7.9	8.2	8.6	9.1	9.8	10.2	10.5
in kind	6.8	7.4	7.5	7.8	8.3	8.7	9.4	9.7	10.0
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	2.0	2.5	2.9	3.2
in kind	0.7	0.8	0.8	1.0	1.2	1.4	1.9	2.3	2.7
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5
Education	4.7	4.8	4.9	4.9	4.9	4.9	5.1	5.2	5.2
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.3	1.2	1.1
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.3	16.6	16.5	16.6	16.8	16.5
AVSG - legacy system	8.6	8.5	8.8	7.7	6.4	4.8	2.2	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.1	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.6	6.8	9.0	12.8	15.0	15.7
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.9	0.7
Other transfers	1.6	2.0	2.0	1.8	1.9	1.8	1.9	1.8	1.7
Investment	3.1	3.7	3.9	3.9	3.9	4.0	4.0	4.0	4.0
Subsidies	1.6	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Other expenditures	4.1	5.0	5.6	4.9	5.0	5.1	5.5	5.6	5.5
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.7	0.7	0.6
Revenues	49.6	50.1	51.2	50.9	50.9	50.6	50.6	50.4	50.1
Taxes on consumption	8.9	9.2	9.1	9.3	9.3	9.4	9.4	9.3	9.2
Taxes on labor	24.8	24.3	25.4	25.1	25.1	25.0	24.9	25.1	25.2
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	3.5	3.6	3.7	3.8	3.8	3.7
Taxes on pensions	2.7	2.6	3.0	3.0	2.9	2.8	2.7	2.6	2.6
Taxes on energy	2.4	1.9	2.2	2.0	1.9	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.6
Other revenues	6.3	6.8	6.8	6.7	6.7	6.7	6.7	6.8	6.8
Primary balance (target path)	2.0	-1.4	-0.2	0.1	0.2	0.2	0.5	0.6	0.2
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.6	-1.7	-1.7	-1.7	-1.5	-1.5	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.3	2.2	2.2	2.2	2.0	2.0	2.0
Fiscal space	**-0.0**	**0.0**	**-2.5**	**-2.6**	**-3.8**	**-4.5**	**-6.6**	**-7.9**	**-7.7**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.7*	*-2.5*	*-3.6*	*-4.3*	*-6.2*	*-7.3*	*-7.4*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.1*	*2.7*	*3.4*	*5.3*	*8.5*	*12.5*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.2*	*-4.6*	*-6.3*	*-7.7*	*-11.4*	*-15.7*	*-19.9*
Public debt (no policy change)	*71.0*	*78.6*	*81.8*	*90.7*	*104.7*	*123.3*	*175.4*	*250.4*	*336.2*
S1 indicator					*5.7*				
S2 indicator					*7.3*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 25: Scenario Results: Lower Participation 55-64 (-6pp)

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.7	0.9	1.0	1.2	1.1	1.3	1.4
Private consumption, nominal	3.3	9.7	2.5	3.1	3.2	3.2	2.9	3.0	3.4
Wage sum, nominal	3.7	8.2	2.0	2.9	3.0	3.2	3.1	3.4	3.4
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.8	3.0	3.2	3.3	3.1	3.0
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.3	0.3	0.4	0.5	0.5
Labor (in hours)	0.6	0.6	0.1	0.0	-0.1	0.1	-0.0	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	0.0	-0.3	-0.3	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.2	0.0	0.0	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.8	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.7	0.6	0.6	0.6	0.7
Absolute									
Working hours (in millions)	7 325	7 268	7 261	7 327	7 333	7 381	7 364	7 328	7 456
Hours/employed (per year)	1 699	1 619	1 608	1 600	1 605	1 609	1 609	1 610	1 616
Labor share (in %)	54.2	55.4	57.5	57.4	57.2	57.0	56.9	57.2	57.4
GDP, nominal (2023 = 100)	83.6	100.0	106.5	123.7	143.9	168.4	229.5	313.0	436.3
GDP, real (2023 = 100)	97.7	100.0	99.8	104.5	110.1	116.9	130.5	146.4	167.8
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.3	68.9	68.4	69.6	70.3	69.7	70.9
Participation rate 20-74 (in %)	70.0	70.3	71.0	70.5	70.0	71.1	72.0	71.3	72.7
Participation rate 15-64 (in %)	77.6	78.5	79.9	81.5	82.2	82.9	82.6	83.0	83.4
Participation rate 25-54 (in %)	88.6	89.2	90.5	92.2	92.4	92.6	92.8	93.1	93.3
Participation rate 55-64 (in %)	57.4	61.2	63.7	64.9	66.4	68.9	69.3	69.3	70.9
Participation rate 60-64 (in %)	34.0	38.9	42.2	45.2	45.9	47.6	49.2	49.9	51.5
Effective retirement age (in years)	60.7	61.8	62.8	62.9	63.3	63.2	63.3	63.5	63.4
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.1	5.0	4.8	4.7
Employed (in 1 000)	4 311	4 490	4 515	4 580	4 567	4 586	4 577	4 551	4 615
Employed (in % of population)	48.5	49.2	49.1	49.0	48.1	47.6	46.6	45.9	46.1
Pensioners (in 1 000)	2 223	2 365	2 411	2 613	2 803	2 949	3 149	3 256	3 297
Pensioners (in % of population)	25.0	25.9	26.2	27.9	29.5	30.6	32.0	32.9	32.9
Pension benefit ratio (in %)	54.0	54.3	56.8	55.8	53.4	51.1	48.3	47.0	46.7

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 25 (cont'd): Scenario Results: Lower Participation 55-64 (-6pp)

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 357	1 337	1 341	1 379	1 377	1 378
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.2	60.6	60.6
CO_2e emissions (in Mt)	80.1	68.1	64.9	60.2	54.6	51.8	47.2	46.6	46.6
of which: ESR	50.2	43.7	41.7	36.4	30.7	27.7	22.6	21.9	21.9
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	53.9	53.5	54.5	54.8	56.6	57.4	57.2
Administration	7.5	7.8	7.8	7.6	7.6	7.5	7.5	7.4	7.3
Health care	7.1	7.7	7.9	8.2	8.6	9.1	9.8	10.2	10.5
in kind	6.8	7.4	7.5	7.8	8.2	8.6	9.3	9.7	9.9
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	1.9	2.5	2.9	3.2
in kind	0.7	0.8	0.8	1.0	1.2	1.4	1.9	2.3	2.7
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5
Education	4.7	4.8	4.9	4.9	4.9	4.9	5.1	5.2	5.2
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.3	1.2	1.1
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.4	16.7	16.5	16.5	16.6	16.4
AVSG - legacy system	8.6	8.5	8.8	7.8	6.4	4.8	2.2	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.1	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.7	6.9	9.0	12.8	14.9	15.6
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.8	0.7
Other transfers	1.6	2.0	2.0	1.8	1.9	1.8	1.9	1.8	1.7
Investment	3.1	3.7	3.9	3.9	3.9	3.9	4.0	4.0	4.0
Subsidies	1.6	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Other expenditures	4.1	5.0	5.6	4.9	5.0	5.1	5.5	5.6	5.5
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.7	0.7	0.6
Revenues	49.6	50.1	51.2	50.9	50.9	50.6	50.6	50.3	50.0
Taxes on consumption	8.9	9.2	9.1	9.3	9.3	9.4	9.4	9.3	9.2
Taxes on labor	24.8	24.3	25.4	25.1	25.1	25.0	25.0	25.1	25.3
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	3.5	3.6	3.7	3.8	3.7	3.6
Taxes on pensions	2.7	2.6	3.0	3.1	3.0	2.8	2.6	2.6	2.5
Taxes on energy	2.4	1.9	2.2	2.0	1.9	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.6
Other revenues	6.3	6.8	6.8	6.7	6.7	6.7	6.7	6.7	6.7
Primary balance (target path)	2.0	-1.4	-0.3	0.0	0.2	0.2	0.5	0.6	0.2
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.7	-1.7	-1.7	-1.7	-1.5	-1.5	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.3	2.2	2.2	2.2	2.0	2.0	2.0
Fiscal space	**-0.0**	**0.0**	**-2.4**	**-2.7**	**-3.8**	**-4.4**	**-6.5**	**-7.7**	**-7.5**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.7*	*-2.6*	*-3.6*	*-4.2*	*-6.1*	*-7.1*	*-7.2*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.1*	*2.7*	*3.4*	*5.2*	*8.4*	*12.3*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.2*	*-4.7*	*-6.4*	*-7.6*	*-11.3*	*-15.5*	*-19.5*
Public debt (no policy change)	*71.0*	*78.6*	*81.7*	*91.0*	*105.0*	*123.4*	*174.7*	*248.2*	*331.6*
S1 indicator					*5.6*				
S2 indicator					*7.1*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 26: Scenario Results: Statutory Retirement Age +1 Year After 2035

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.6	1.0	1.4	1.2	1.1	1.3	1.4
Private consumption, nominal	3.3	9.7	2.2	3.1	3.2	3.3	3.0	3.0	3.4
Wage sum, nominal	3.7	8.2	1.9	3.0	3.3	3.2	3.1	3.3	3.4
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.9	3.1	3.2	3.3	3.2	3.0
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.3	0.3	0.4	0.5	0.5
Labor (in hours)	0.6	0.6	0.1	0.1	0.2	0.1	-0.0	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	0.0	-0.1	0.1	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.2	0.0	-0.0	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.9	0.8	0.8	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.7	0.6	0.6	0.6	0.7
Absolute									
Working hours (in millions)	7 325	7 268	7 256	7 387	7 485	7 535	7 527	7 479	7 604
Hours/employed (per year)	1 699	1 619	1 607	1 594	1 596	1 601	1 601	1 603	1 609
Labor share (in %)	54.2	55.4	57.5	57.4	57.1	57.0	56.9	57.2	57.4
GDP, nominal (2023 = 100)	83.6	100.0	106.5	124.3	145.9	171.0	233.6	318.7	443.9
GDP, real (2023 = 100)	97.7	100.0	99.8	105.1	111.9	118.8	133.1	149.3	170.9
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.3	69.7	70.3	71.5	72.3	71.5	72.6
Participation rate 20-74 (in %)	70.0	70.3	71.0	71.3	72.0	73.1	74.1	73.3	74.6
Participation rate 15-64 (in %)	77.6	78.5	79.9	82.4	84.2	84.9	84.7	84.9	85.3
Participation rate 25-54 (in %)	88.6	89.2	90.5	92.4	93.0	93.1	93.4	93.6	93.8
Participation rate 55-64 (in %)	57.4	61.2	63.7	68.7	74.7	76.9	77.2	77.1	78.5
Participation rate 60-64 (in %)	34.0	38.9	42.3	49.8	57.0	58.8	60.1	60.7	62.1
Effective retirement age (in years)	60.7	61.8	62.8	63.2	64.3	64.2	64.2	64.4	64.3
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.0	4.9	4.8
Employed (in 1 000)	4 311	4 490	4 514	4 633	4 691	4 707	4 701	4 665	4 726
Employed (in % of population)	48.5	49.2	49.1	49.5	49.4	48.9	47.8	47.1	47.2
Pensioners (in 1 000)	2 223	2 365	2 412	2 577	2 678	2 832	3 028	3 142	3 190
Pensioners (in % of population)	25.0	25.9	26.2	27.6	28.2	29.4	30.8	31.7	31.8
Pension benefit ratio (in %)	54.0	54.3	56.8	56.2	54.3	52.0	49.4	48.2	48.0

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 26 (cont'd): Scenario Results: Statutory Retirement Age +1 Year After 2035

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 360	1 344	1 352	1 397	1 397	1 397
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.2	60.6	60.6
CO_2e emissions (in Mt)	80.1	68.1	64.9	60.3	54.8	52.1	47.7	47.2	47.1
of which: ESR	50.2	43.7	41.7	36.5	30.9	27.9	22.8	22.2	22.2
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	53.9	53.1	53.2	53.6	55.3	56.2	56.1
Administration	7.5	7.8	7.8	7.6	7.5	7.4	7.3	7.3	7.1
Health care	7.1	7.7	7.9	8.1	8.5	8.9	9.6	10.0	10.3
in kind	6.8	7.4	7.5	7.8	8.1	8.5	9.2	9.5	9.7
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	1.9	2.5	2.8	3.1
in kind	0.7	0.8	0.8	1.0	1.1	1.3	1.9	2.3	2.7
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.4
Education	4.7	4.8	4.9	4.9	4.9	4.9	5.0	5.1	5.1
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.3	1.2	1.0
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.1	15.8	15.8	15.9	16.1	16.0
AVSG - legacy system	8.6	8.5	8.8	7.7	6.2	4.7	2.2	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.0	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.5	6.3	8.4	12.1	14.4	15.1
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.9	0.7
Other transfers	1.6	2.0	2.0	1.8	1.8	1.7	1.8	1.8	1.6
Investment	3.1	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Subsidies	1.6	2.3	1.9	1.8	1.7	1.7	1.7	1.8	1.8
Other expenditures	4.1	5.0	5.6	4.9	5.0	5.0	5.4	5.5	5.4
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.7	0.7	0.6
Revenues	49.6	50.1	51.2	50.8	50.6	50.4	50.3	50.1	49.8
Taxes on consumption	8.9	9.2	9.0	9.2	9.2	9.2	9.3	9.2	9.1
Taxes on labor	24.8	24.3	25.5	25.1	25.1	25.0	25.0	25.1	25.3
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	3.5	3.7	3.8	3.9	3.8	3.7
Taxes on pensions	2.7	2.6	3.0	3.0	2.9	2.7	2.6	2.5	2.5
Taxes on energy	2.4	1.9	2.2	2.0	1.8	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.5
Other revenues	6.3	6.8	6.8	6.6	6.6	6.6	6.6	6.6	6.6
Primary balance (target path)	2.0	-1.4	-0.2	-0.0	-0.0	0.2	0.5	0.6	0.2
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.6	-1.8	-1.9	-1.8	-1.5	-1.5	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.3	2.3	2.4	2.3	2.0	2.0	2.0
Fiscal space	**-0.0**	**0.0**	**-2.5**	**-2.3**	**-2.6**	**-3.4**	**-5.5**	**-6.7**	**-6.5**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.7*	*-2.3*	*-2.6*	*-3.2*	*-5.0*	*-6.1*	*-6.3*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.0*	*2.6*	*3.1*	*4.6*	*7.3*	*10.7*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.2*	*-4.3*	*-5.2*	*-6.3*	*-9.6*	*-13.4*	*-17.0*
Public debt (no policy change)	*71.0*	*78.6*	*81.8*	*89.6*	*99.6*	*112.8*	*153.1*	*215.2*	*287.6*
S1 indicator					*4.7*				
S2 indicator					*6.2*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 27: Scenario Results: Lower Interest (3% Nominal Rate in the Long Run)

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.6	1.0	1.2	1.2	1.1	1.3	1.4
Private consumption, nominal	3.3	9.7	2.3	3.2	3.2	3.3	3.0	3.0	3.4
Wage sum, nominal	3.7	8.2	1.9	3.0	3.1	3.2	3.1	3.3	3.4
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.9	3.1	3.2	3.3	3.2	3.0
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.0	1.0	1.0
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.3	0.3	0.4	0.5	0.5
Labor (in hours)	0.6	0.6	0.0	0.1	0.1	0.1	-0.0	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	0.0	-0.1	-0.2	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.2	0.0	0.0	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.8	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.7	0.6	0.6	0.6	0.7
Absolute									
Working hours (in millions)	7 325	7 268	7 251	7 393	7 453	7 503	7 492	7 448	7 577
Hours/employed (per year)	1 699	1 619	1 607	1 596	1 600	1 604	1 604	1 606	1 612
Labor share (in %)	54.2	55.4	57.5	57.3	57.1	57.0	56.8	57.1	57.4
GDP, nominal (2023 = 100)	83.6	100.0	106.5	124.4	145.5	170.5	232.8	317.7	442.6
GDP, real (2023 = 100)	97.7	100.0	99.7	105.2	111.5	118.4	132.5	148.7	170.3
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.3	69.7	69.8	71.0	71.8	71.0	72.2
Participation rate 20-74 (in %)	70.0	70.3	70.9	71.3	71.5	72.6	73.6	72.8	74.1
Participation rate 15-64 (in %)	77.6	78.5	79.9	82.5	83.8	84.5	84.3	84.5	84.9
Participation rate 25-54 (in %)	88.6	89.2	90.5	92.4	93.0	93.1	93.4	93.6	93.8
Participation rate 55-64 (in %)	57.4	61.2	63.7	68.8	72.7	75.0	75.2	75.1	76.6
Participation rate 60-64 (in %)	34.0	38.9	42.3	49.8	53.7	55.4	56.8	57.3	58.7
Effective retirement age (in years)	60.7	61.8	62.8	63.2	63.8	63.7	63.7	63.9	63.9
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.0	4.9	4.7
Employed (in 1 000)	4 311	4 490	4 513	4 634	4 659	4 677	4 671	4 638	4 701
Employed (in % of population)	48.5	49.2	49.1	49.6	49.0	48.5	47.5	46.8	46.9
Pensioners (in 1 000)	2 223	2 365	2 412	2 577	2 753	2 900	3 097	3 206	3 249
Pensioners (in % of population)	25.0	25.9	26.2	27.6	29.0	30.1	31.5	32.4	32.4
Pension benefit ratio (in %)	54.0	54.3	56.8	56.2	54.2	51.9	49.5	48.4	48.1

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 27 (cont'd): Scenario Results: Lower Interest (3% Nominal Rate in the Long Run)

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 359	1 342	1 350	1 393	1 393	1 394
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.2	60.6	60.6
CO_2e emissions (in Mt)	80.1	68.1	64.9	60.3	54.8	52.1	47.6	47.0	47.0
of which: ESR	50.2	43.7	41.7	36.5	30.8	27.8	22.8	22.1	22.1
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	54.0	53.1	53.7	54.1	55.9	56.8	56.7
Administration	7.5	7.8	7.8	7.6	7.5	7.4	7.4	7.3	7.2
Health care	7.1	7.7	7.9	8.1	8.5	8.9	9.6	10.0	10.3
in kind	6.8	7.4	7.5	7.8	8.2	8.5	9.2	9.5	9.8
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	1.9	2.5	2.8	3.1
in kind	0.7	0.8	0.8	1.0	1.2	1.4	1.9	2.3	2.7
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.4
Education	4.7	4.8	4.9	4.9	4.9	4.9	5.0	5.1	5.1
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.3	1.2	1.0
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.1	16.3	16.2	16.3	16.5	16.4
AVSG - legacy system	8.6	8.5	8.8	7.7	6.3	4.8	2.2	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.0	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.5	6.6	8.8	12.5	14.8	15.5
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.9	0.7
Other transfers	1.6	2.0	2.0	1.8	1.8	1.8	1.8	1.8	1.6
Investment	3.1	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Subsidies	1.6	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Other expenditures	4.1	5.0	5.6	4.9	5.0	5.0	5.5	5.5	5.4
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.7	0.7	0.6
Revenues	49.6	50.1	51.2	50.8	50.7	50.5	50.5	50.2	50.0
Taxes on consumption	8.9	9.2	9.1	9.2	9.2	9.3	9.4	9.2	9.2
Taxes on labor	24.8	24.3	25.5	25.1	25.1	25.0	25.0	25.1	25.3
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	3.5	3.7	3.8	3.9	3.8	3.7
Taxes on pensions	2.7	2.6	3.0	3.0	2.9	2.8	2.6	2.6	2.6
Taxes on energy	2.4	1.9	2.2	2.0	1.8	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.5
Other revenues	6.3	6.8	6.8	6.6	6.6	6.6	6.6	6.6	6.6
Primary balance (target path)	2.0	-1.4	-0.2	-0.0	0.1	0.2	0.4	0.3	-0.2
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.6	-1.8	-1.8	-1.8	-1.5	-1.5	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	1.9	1.8	1.8
GDP denominator effect	2.4	4.2	2.3	2.3	2.3	2.3	2.0	2.0	2.0
Fiscal space	**-0.0**	**0.0**	**-2.5**	**-2.2**	**-3.1**	**-3.8**	**-5.8**	**-6.9**	**-6.5**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.7*	*-2.3*	*-3.0*	*-3.6*	*-5.4*	*-6.5*	*-6.7*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.0*	*2.6*	*3.2*	*4.7*	*6.5*	*8.3*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.2*	*-4.3*	*-5.6*	*-6.8*	*-10.1*	*-13.1*	*-15.0*
Public debt (no policy change)	*71.0*	*78.6*	*81.8*	*89.5*	*100.4*	*115.7*	*159.8*	*221.1*	*281.0*
S1 indicator					*4.9*				
S2 indicator					*6.7*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 28: Scenario Results: Higher Interest (5% Nominal Rate in the Long Run)

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.6	1.0	1.2	1.2	1.1	1.3	1.4
Private consumption, nominal	3.3	9.7	2.3	3.1	3.2	3.3	3.0	3.0	3.5
Wage sum, nominal	3.7	8.2	1.9	3.0	3.1	3.2	3.1	3.3	3.4
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.9	3.1	3.2	3.3	3.2	3.0
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	1.0	1.6	2.3	2.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.3	0.3	0.4	0.5	0.5
Labor (in hours)	0.6	0.6	0.1	0.1	0.1	0.1	-0.1	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	0.0	-0.1	-0.2	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.2	0.0	0.0	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.8	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.7	0.6	0.6	0.6	0.7
Absolute									
Working hours (in millions)	7 325	7 268	7 256	7 392	7 453	7 503	7 491	7 443	7 565
Hours/employed (per year)	1 699	1 619	1 607	1 595	1 599	1 604	1 603	1 604	1 609
Labor share (in %)	54.2	55.4	57.5	57.3	57.1	57.0	56.8	57.1	57.4
GDP, nominal (2023 = 100)	83.6	100.0	106.5	124.3	145.5	170.4	232.7	317.2	441.8
GDP, real (2023 = 100)	97.7	100.0	99.8	105.1	111.4	118.4	132.4	148.5	169.9
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.3	69.7	69.8	71.0	71.8	71.0	72.2
Participation rate 20-74 (in %)	70.0	70.3	71.0	71.3	71.5	72.6	73.6	72.8	74.1
Participation rate 15-64 (in %)	77.6	78.5	79.9	82.5	83.8	84.5	84.3	84.5	84.9
Participation rate 25-54 (in %)	88.6	89.2	90.5	92.4	93.0	93.1	93.4	93.6	93.8
Participation rate 55-64 (in %)	57.4	61.2	63.7	68.8	72.7	75.0	75.2	75.0	76.5
Participation rate 60-64 (in %)	34.0	38.9	42.3	49.8	53.7	55.4	56.7	57.2	58.6
Effective retirement age (in years)	60.7	61.8	62.8	63.2	63.8	63.7	63.7	63.9	63.8
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.0	4.8	4.7
Employed (in 1 000)	4 311	4 490	4 514	4 634	4 660	4 678	4 672	4 639	4 701
Employed (in % of population)	48.5	49.2	49.1	49.6	49.0	48.6	47.5	46.8	46.9
Pensioners (in 1 000)	2 223	2 365	2 412	2 577	2 753	2 900	3 097	3 207	3 250
Pensioners (in % of population)	25.0	25.9	26.2	27.6	29.0	30.1	31.5	32.4	32.4
Pension benefit ratio (in %)	54.0	54.3	56.8	56.3	54.2	52.0	49.5	48.4	48.2

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 28 (cont'd): Scenario Results: Higher Interest (5% Nominal Rate in the Long Run)

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 358	1 342	1 350	1 392	1 391	1 390
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.2	60.6	60.6
CO_2e emissions (in Mt)	80.1	68.1	64.9	60.3	54.8	52.1	47.5	47.0	46.9
of which: ESR	50.2	43.7	41.7	36.5	30.8	27.8	22.8	22.1	22.1
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	53.9	53.1	53.7	54.1	55.9	56.8	56.7
Administration	7.5	7.8	7.8	7.6	7.5	7.4	7.4	7.3	7.2
Health care	7.1	7.7	7.9	8.1	8.5	8.9	9.6	10.0	10.3
in kind	6.8	7.4	7.5	7.8	8.2	8.5	9.2	9.6	9.8
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	1.9	2.5	2.8	3.1
in kind	0.7	0.8	0.8	1.0	1.2	1.4	1.9	2.3	2.7
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5
Education	4.7	4.8	4.9	4.9	4.9	4.9	5.0	5.1	5.1
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.3	1.2	1.1
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.1	16.3	16.3	16.3	16.5	16.4
AVSG - legacy system	8.6	8.5	8.8	7.7	6.3	4.8	2.2	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.0	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.5	6.6	8.8	12.6	14.8	15.5
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.9	0.7
Other transfers	1.6	2.0	2.0	1.8	1.8	1.8	1.8	1.8	1.6
Investment	3.1	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Subsidies	1.6	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Other expenditures	4.1	5.0	5.6	4.9	5.0	5.0	5.5	5.5	5.4
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.7	0.7	0.6
Revenues	49.6	50.1	51.2	50.8	50.7	50.5	50.5	50.3	50.0
Taxes on consumption	8.9	9.2	9.0	9.2	9.2	9.3	9.4	9.2	9.2
Taxes on labor	24.8	24.3	25.5	25.1	25.1	25.0	25.0	25.1	25.2
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	3.5	3.7	3.8	3.9	3.8	3.7
Taxes on pensions	2.7	2.6	3.0	3.0	2.9	2.8	2.6	2.6	2.6
Taxes on energy	2.4	1.9	2.2	2.0	1.8	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.6
Other revenues	6.3	6.8	6.8	6.6	6.6	6.6	6.6	6.6	6.6
Primary balance (target path)	2.0	-1.4	-0.2	-0.0	0.1	0.3	0.8	1.1	0.8
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.6	-1.8	-1.8	-1.8	-1.5	-1.5	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.1	2.3	2.5	2.7
GDP denominator effect	2.4	4.2	2.3	2.3	2.3	2.3	2.0	2.0	2.0
Fiscal space	**-0.0**	**0.0**	**-2.5**	**-2.2**	**-3.2**	**-3.9**	**-6.3**	**-7.6**	**-7.5**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.7*	*-2.3*	*-3.0*	*-3.6*	*-5.5*	*-6.6*	*-6.7*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.0*	*2.6*	*3.4*	*5.9*	*10.2*	*16.2*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.2*	*-4.3*	*-5.7*	*-7.0*	*-11.3*	*-16.8*	*-23.0*
Public debt (no policy change)	*71.0*	*78.6*	*81.8*	*89.5*	*100.6*	*116.3*	*166.4*	*248.0*	*353.1*
S1 indicator					*5.2*				
S2 indicator					*6.5*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 29: Scenario Results: No ESR Non-Compliance Costs After 2030

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.6	1.0	1.2	1.2	1.1	1.3	1.4
Private consumption, nominal	3.3	9.7	2.3	3.2	3.2	3.3	3.0	3.0	3.4
Wage sum, nominal	3.7	8.2	1.9	3.0	3.1	3.2	3.1	3.3	3.4
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.9	3.1	3.2	3.3	3.2	3.0
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.3	0.3	0.4	0.5	0.5
Labor (in hours)	0.6	0.6	0.0	0.1	0.1	0.1	-0.0	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	0.0	-0.1	-0.2	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.2	0.0	0.0	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.8	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.7	0.6	0.6	0.6	0.7
Absolute									
Working hours (in millions)	7 325	7 268	7 252	7 393	7 452	7 502	7 492	7 447	7 573
Hours/employed (per year)	1 699	1 619	1 607	1 595	1 599	1 604	1 604	1 605	1 611
Labor share (in %)	54.2	55.4	57.5	57.3	57.1	57.0	56.8	57.1	57.4
GDP, nominal (2023 = 100)	83.6	100.0	106.5	124.4	145.5	170.5	232.8	317.5	442.3
GDP, real (2023 = 100)	97.7	100.0	99.7	105.1	111.5	118.4	132.5	148.6	170.2
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.3	69.7	69.8	71.0	71.8	71.0	72.2
Participation rate 20-74 (in %)	70.0	70.3	70.9	71.3	71.5	72.6	73.6	72.8	74.1
Participation rate 15-64 (in %)	77.6	78.5	79.9	82.5	83.8	84.5	84.3	84.5	84.9
Participation rate 25-54 (in %)	88.6	89.2	90.5	92.4	93.0	93.1	93.4	93.6	93.8
Participation rate 55-64 (in %)	57.4	61.2	63.7	68.8	72.7	75.0	75.2	75.1	76.6
Participation rate 60-64 (in %)	34.0	38.9	42.3	49.8	53.7	55.4	56.8	57.3	58.7
Effective retirement age (in years)	60.7	61.8	62.8	63.2	63.8	63.7	63.7	63.9	63.9
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.0	4.8	4.7
Employed (in 1 000)	4 311	4 490	4 513	4 634	4 660	4 678	4 672	4 639	4 701
Employed (in % of population)	48.5	49.2	49.1	49.6	49.0	48.6	47.5	46.8	46.9
Pensioners (in 1 000)	2 223	2 365	2 412	2 577	2 753	2 900	3 097	3 206	3 249
Pensioners (in % of population)	25.0	25.9	26.2	27.6	29.0	30.1	31.5	32.4	32.4
Pension benefit ratio (in %)	54.0	54.3	56.8	56.3	54.2	51.9	49.5	48.4	48.1

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 29 (cont'd): Scenario Results: No ESR Non-Compliance Costs After 2030

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 358	1 342	1 350	1 393	1 393	1 392
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.2	60.6	60.6
CO_2e emissions (in Mt)	80.1	68.1	64.9	60.3	54.8	52.1	47.6	47.0	47.0
of which: ESR	50.2	43.7	41.7	36.5	30.8	27.8	22.8	22.1	22.1
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	54.0	53.1	53.6	53.9	55.2	56.1	56.1
Administration	7.5	7.8	7.8	7.6	7.5	7.4	7.4	7.3	7.2
Health care	7.1	7.7	7.9	8.1	8.5	8.9	9.6	10.0	10.3
in kind	6.8	7.4	7.5	7.8	8.2	8.5	9.2	9.5	9.8
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	1.9	2.5	2.8	3.1
in kind	0.7	0.8	0.8	1.0	1.2	1.4	1.9	2.3	2.7
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.4
Education	4.7	4.8	4.9	4.9	4.9	4.9	5.0	5.1	5.1
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.3	1.2	1.1
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.1	16.3	16.2	16.3	16.5	16.4
AVSG - legacy system	8.6	8.5	8.8	7.7	6.3	4.8	2.2	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.0	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.5	6.6	8.8	12.6	14.8	15.5
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.9	0.7
Other transfers	1.6	2.0	2.0	1.8	1.8	1.8	1.8	1.8	1.6
Investment	3.1	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Subsidies	1.6	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Other expenditures	4.1	5.0	5.6	4.9	4.8	4.8	4.8	4.8	4.8
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.0	0.0	0.0	0.0	0.0
Revenues	49.6	50.1	51.2	50.8	50.7	50.5	50.5	50.2	50.0
Taxes on consumption	8.9	9.2	9.1	9.2	9.2	9.3	9.4	9.2	9.2
Taxes on labor	24.8	24.3	25.5	25.1	25.1	25.0	25.0	25.1	25.2
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	3.5	3.7	3.8	3.9	3.8	3.7
Taxes on pensions	2.7	2.6	3.0	3.0	2.9	2.8	2.6	2.6	2.6
Taxes on energy	2.4	1.9	2.2	2.0	1.8	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.5
Other revenues	6.3	6.8	6.8	6.6	6.6	6.6	6.6	6.6	6.6
Primary balance (target path)	2.0	-1.4	-0.2	-0.0	0.1	0.2	0.5	0.6	0.2
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.6	-1.8	-1.8	-1.8	-1.5	-1.5	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.3	2.3	2.3	2.3	2.0	2.0	2.0
Fiscal space	**-0.0**	**0.0**	**-2.5**	**-2.2**	**-3.0**	**-3.6**	**-5.3**	**-6.5**	**-6.4**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.7*	*-2.3*	*-2.9*	*-3.4*	*-4.8*	*-5.9*	*-6.1*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.0*	*2.6*	*3.2*	*4.6*	*7.2*	*10.5*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.2*	*-4.3*	*-5.5*	*-6.6*	*-9.4*	*-13.1*	*-16.7*
Public debt (no policy change)	*71.0*	*78.6*	*81.8*	*89.5*	*100.0*	*114.4*	*154.5*	*213.9*	*284.1*
S1 indicator					*4.6*				
S2 indicator					*6.0*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 30: Scenario Results: Higher CO_2 Prices (WAM Assumptions)

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.5	1.0	1.1	1.2	1.1	1.3	1.4
Private consumption, nominal	3.3	9.7	3.1	3.1	3.2	3.2	2.9	3.0	3.4
Wage sum, nominal	3.7	8.2	1.8	2.9	3.0	3.1	3.1	3.3	3.4
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.9	3.1	3.2	3.3	3.2	3.1
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.2	0.3	0.4	0.5	0.5
Labor (in hours)	0.6	0.6	-0.0	0.1	0.1	0.1	-0.0	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	0.0	-0.1	-0.2	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.3	0.0	0.0	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.8	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.6	0.6	0.6	0.6	0.6
Absolute									
Working hours (in millions)	7 325	7 268	7 245	7 378	7 434	7 484	7 477	7 434	7 561
Hours/employed (per year)	1 699	1 619	1 606	1 593	1 596	1 601	1 601	1 603	1 609
Labor share (in %)	54.2	55.4	57.5	57.3	56.9	56.6	56.4	56.7	57.0
GDP, nominal (2023 = 100)	83.6	100.0	106.4	124.0	144.8	169.6	230.9	314.5	438.1
GDP, real (2023 = 100)	97.7	100.0	99.6	104.7	110.7	117.3	130.9	146.7	168.0
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.3	69.7	69.8	71.0	71.8	71.0	72.2
Participation rate 20-74 (in %)	70.0	70.3	70.9	71.3	71.4	72.6	73.6	72.8	74.1
Participation rate 15-64 (in %)	77.6	78.5	79.8	82.4	83.7	84.5	84.2	84.4	84.9
Participation rate 25-54 (in %)	88.6	89.2	90.5	92.4	92.9	93.1	93.3	93.5	93.7
Participation rate 55-64 (in %)	57.4	61.2	63.6	68.7	72.6	74.9	75.1	75.0	76.5
Participation rate 60-64 (in %)	34.0	38.9	42.2	49.7	53.6	55.3	56.7	57.2	58.6
Effective retirement age (in years)	60.7	61.8	62.7	63.2	63.7	63.7	63.7	63.9	63.8
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.0	4.9	4.7
Employed (in 1 000)	4 311	4 490	4 512	4 631	4 656	4 674	4 669	4 637	4 699
Employed (in % of population)	48.5	49.2	49.1	49.5	49.0	48.5	47.5	46.8	46.9
Pensioners (in 1 000)	2 223	2 365	2 412	2 578	2 754	2 901	3 098	3 207	3 250
Pensioners (in % of population)	25.0	25.9	26.2	27.6	29.0	30.1	31.5	32.4	32.4
Pension benefit ratio (in %)	54.0	54.3	56.8	56.5	54.6	52.5	50.0	48.7	48.4

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 30 (cont'd): Scenario Results: Higher CO_2Prices (WAM Assumptions)

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 349	1 305	1 260	1 300	1 309	1 309
of which: renewable (in %)	35.9	41.2	43.2	48.0	54.6	62.2	69.1	69.0	69.1
CO_2e emissions (in Mt)	80.1	68.1	64.9	59.5	51.4	42.9	36.7	36.9	36.9
of which: ESR	50.2	43.7	41.7	36.0	28.9	23.0	17.6	17.4	17.3
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	54.0	53.2	54.1	54.9	57.3	58.1	57.8
Administration	7.5	7.8	7.8	7.6	7.5	7.4	7.4	7.4	7.2
Health care	7.1	7.7	7.9	8.1	8.6	9.0	9.7	10.1	10.4
in kind	6.8	7.4	7.5	7.8	8.2	8.6	9.3	9.6	9.9
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	1.9	2.5	2.8	3.1
in kind	0.7	0.8	0.8	1.0	1.2	1.4	1.9	2.3	2.7
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5
Education	4.7	4.8	4.9	4.9	4.9	4.9	5.0	5.2	5.2
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.3	1.2	1.1
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.2	16.4	16.3	16.4	16.6	16.4
AVSG - legacy system	8.6	8.5	8.8	7.7	6.4	4.8	2.2	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.1	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.5	6.7	8.8	12.6	14.8	15.5
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.9	0.7
Other transfers	1.6	2.0	2.0	1.8	2.0	2.2	2.2	2.1	1.9
Investment	3.1	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Subsidies	1.6	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Other expenditures	4.1	5.0	5.6	4.9	5.0	5.2	6.1	6.2	6.0
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.4	1.3	1.3	1.1
Revenues	49.6	50.1	51.3	50.9	50.9	50.9	50.9	50.6	50.3
Taxes on consumption	8.9	9.2	9.1	9.3	9.3	9.4	9.4	9.3	9.2
Taxes on labor	24.8	24.3	25.4	25.1	25.0	24.8	24.8	24.9	25.1
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	3.5	3.7	3.9	4.0	3.9	3.8
Taxes on pensions	2.7	2.6	3.0	3.1	3.0	2.8	2.7	2.6	2.6
Taxes on energy	2.4	1.9	2.2	2.0	1.9	2.0	2.0	1.8	1.6
Other taxes	0.5	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.6
Other revenues	6.3	6.8	6.8	6.7	6.7	6.7	6.7	6.7	6.7
Primary balance (target path)	2.0	-1.4	-0.2	0.0	0.2	0.2	0.5	0.6	0.2
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.6	-1.7	-1.8	-1.8	-1.5	-1.5	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.3	2.2	2.3	2.3	2.0	2.0	2.0
Fiscal space	**-0.0**	**0.0**	**-2.5**	**-2.3**	**-3.3**	**-4.3**	**-6.9**	**-8.1**	**-7.8**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.7*	*-2.3*	*-3.2*	*-4.0*	*-6.4*	*-7.5*	*-7.5*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.0*	*2.7*	*3.3*	*5.1*	*8.4*	*12.4*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.2*	*-4.4*	*-5.8*	*-7.3*	*-11.5*	*-15.8*	*-20.0*
Public debt (no policy change)	*71.0*	*78.6*	*81.8*	*89.8*	*101.6*	*118.5*	*170.6*	*248.0*	*335.1*
S1 indicator					*5.7*				
S2 indicator					*7.3*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 31: Scenario Results: WAM Scenario

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.5	1.0	1.1	1.2	1.1	1.3	1.4
Private consumption, nominal	3.3	9.7	2.8	3.2	3.3	3.2	2.9	3.0	3.4
Wage sum, nominal	3.7	8.2	1.9	3.0	3.1	3.1	3.1	3.3	3.4
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.0	2.0	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.8	2.9	3.3	3.2	3.3	3.2	3.1
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.3	0.3	0.4	0.5	0.5
Labor (in hours)	0.6	0.6	0.0	0.1	0.0	0.1	-0.0	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	0.0	-0.1	-0.2	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.3	0.0	0.0	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.7	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.7	0.6	0.6	0.6	0.6
Absolute									
Working hours (in millions)	7 325	7 268	7 249	7 384	7 440	7 484	7 476	7 433	7 561
Hours/employed (per year)	1 699	1 619	1 606	1 594	1 597	1 601	1 601	1 603	1 609
Labor share (in %)	54.2	55.4	57.5	57.3	57.1	56.8	56.6	56.9	57.2
GDP, nominal (2023 = 100)	83.6	100.0	106.5	124.4	145.6	170.5	231.4	315.1	438.8
GDP, real (2023 = 100)	97.7	100.0	99.7	105.1	111.4	118.0	131.5	147.3	168.7
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.3	69.7	69.8	71.0	71.8	71.0	72.2
Participation rate 20-74 (in %)	70.0	70.3	70.9	71.3	71.5	72.6	73.6	72.8	74.1
Participation rate 15-64 (in %)	77.6	78.5	79.9	82.4	83.8	84.5	84.2	84.4	84.9
Participation rate 25-54 (in %)	88.6	89.2	90.5	92.4	92.9	93.1	93.3	93.5	93.7
Participation rate 55-64 (in %)	57.4	61.2	63.6	68.7	72.6	74.9	75.1	75.0	76.5
Participation rate 60-64 (in %)	34.0	38.9	42.2	49.7	53.6	55.4	56.7	57.2	58.6
Effective retirement age (in years)	60.7	61.8	62.7	63.2	63.7	63.7	63.7	63.9	63.8
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.0	4.9	4.7
Employed (in 1 000)	4 311	4 490	4 513	4 633	4 658	4 674	4 669	4 636	4 699
Employed (in % of population)	48.5	49.2	49.1	49.5	49.0	48.5	47.5	46.8	46.9
Pensioners (in 1 000)	2 223	2 365	2 412	2 577	2 753	2 901	3 098	3 207	3 250
Pensioners (in % of population)	25.0	25.9	26.2	27.6	29.0	30.1	31.5	32.4	32.4
Pension benefit ratio (in %)	54.0	54.3	56.8	56.2	54.2	52.1	49.8	48.6	48.3

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 31 (cont'd): Scenario Results: WAM Scenario

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 324	1 335	1 318	1 306	1 294	1 294	1 294
of which: renewable (in %)	35.9	41.2	44.1	54.0	63.5	71.4	80.5	80.5	80.5
CO_2e emissions (in Mt)	80.1	68.1	63.6	52.4	43.0	34.9	24.0	24.0	23.9
of which: ESR	50.2	43.7	40.9	31.9	24.1	19.7	13.7	13.6	13.6
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	54.5	53.5	53.9	54.4	56.6	57.6	57.4
Administration	7.5	7.8	7.8	7.6	7.5	7.4	7.4	7.4	7.2
Health care	7.1	7.7	7.9	8.1	8.5	8.9	9.7	10.1	10.4
in kind	6.8	7.4	7.5	7.8	8.2	8.5	9.3	9.6	9.9
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	1.9	2.5	2.8	3.1
in kind	0.7	0.8	0.8	1.0	1.2	1.4	1.9	2.3	2.7
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5
Education	4.7	4.8	4.9	4.9	4.9	4.9	5.0	5.2	5.2
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.3	1.2	1.1
Unemployment	1.1	0.9	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.1	16.3	16.2	16.4	16.6	16.4
AVSG - legacy system	8.6	8.5	8.8	7.7	6.3	4.8	2.2	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.0	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.5	6.6	8.8	12.6	14.8	15.5
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.9	0.7
Other transfers	1.6	2.0	2.0	1.7	1.9	2.1	2.0	1.9	1.8
Investment	3.1	3.7	4.0	4.0	4.0	3.9	3.9	3.9	3.9
Subsidies	1.6	2.3	2.3	2.2	2.0	1.8	1.8	1.8	1.8
Other expenditures	4.1	5.0	5.6	4.8	4.9	5.0	5.8	5.9	5.7
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.0	0.1	0.2	1.0	1.0	0.9
Revenues	49.6	50.1	51.2	50.8	50.7	50.7	50.5	50.3	50.0
Taxes on consumption	8.9	9.2	9.1	9.3	9.3	9.4	9.5	9.3	9.2
Taxes on labor	24.8	24.3	25.4	25.1	25.0	24.9	24.9	25.0	25.2
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	3.5	3.7	3.8	3.9	3.9	3.8
Taxes on pensions	2.7	2.6	3.0	3.0	2.9	2.8	2.7	2.6	2.6
Taxes on energy	2.4	1.9	2.2	1.9	1.8	1.8	1.5	1.4	1.2
Other taxes	0.5	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.6
Other revenues	6.3	6.8	6.8	6.6	6.6	6.6	6.7	6.7	6.7
Primary balance (target path)	2.0	-1.4	-0.2	-0.0	0.1	0.3	0.5	0.6	0.2
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.6	-1.8	-1.8	-1.7	-1.5	-1.5	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.3	2.3	2.3	2.2	2.0	2.0	2.0
Fiscal space	**-0.0**	**0.0**	**-3.0**	**-2.7**	**-3.4**	**-4.0**	**-6.6**	**-7.9**	**-7.6**
Primary balance (no policy change)	*2.0*	*-1.4*	*-3.2*	*-2.7*	*-3.3*	*-3.7*	*-6.1*	*-7.3*	*-7.4*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.1*	*2.7*	*3.4*	*5.1*	*8.3*	*12.3*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.7*	*-4.8*	*-6.0*	*-7.1*	*-11.3*	*-15.6*	*-19.7*
Public debt (no policy change)	*71.0*	*78.6*	*82.3*	*92.2*	*104.9*	*120.5*	*170.3*	*245.6*	*331.0*
S1 indicator					*5.6*				
S2 indicator					*7.2*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 32: Scenario Results: Constant Revenue-to-GDP-Ratio

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.6	1.0	1.2	1.2	1.1	1.3	1.4
Private consumption, nominal	3.3	9.7	2.3	3.2	3.2	3.3	3.0	3.0	3.4
Wage sum, nominal	3.7	8.2	1.9	3.0	3.1	3.2	3.1	3.3	3.4
GDP deflator	1.5	6.6	1.9	2.0	2.0	2.1	2.0	2.1	2.0
Consumer price index	1.5	7.8	2.3	2.0	2.0	2.1	2.0	2.1	2.0
Return rate on capital, real (in %)	2.7	2.6	2.7	2.9	3.1	3.2	3.3	3.2	3.0
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.3	0.3	0.4	0.5	0.5
Labor (in hours)	0.6	0.6	0.1	0.1	0.1	0.1	-0.0	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	0.0	-0.1	-0.2	-0.1	-0.1	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.2	0.0	0.0	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.6	0.7	0.8	0.8	0.8	0.7	0.7
of which: age-education structure	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0
of which: residual	0.3	-3.4	0.3	0.5	0.7	0.6	0.6	0.6	0.7
Absolute									
Working hours (in millions)	7 325	7 268	7 256	7 391	7 447	7 489	7 481	7 432	7 547
Hours/employed (per year)	1 699	1 619	1 607	1 595	1 599	1 602	1 602	1 603	1 608
Labor share (in %)	54.2	55.4	57.5	57.1	56.8	56.6	56.4	56.5	56.6
GDP, nominal (2023 = 100)	83.6	100.0	106.5	124.8	146.1	171.5	234.1	320.1	446.8
GDP, real (2023 = 100)	97.7	100.0	99.8	105.1	111.4	118.2	132.3	148.2	169.5
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.3	69.7	69.8	71.0	71.8	71.0	72.1
Participation rate 20-74 (in %)	70.0	70.3	70.9	71.3	71.5	72.6	73.6	72.8	74.0
Participation rate 15-64 (in %)	77.6	78.5	79.9	82.4	83.8	84.5	84.2	84.4	84.8
Participation rate 25-54 (in %)	88.6	89.2	90.5	92.4	92.9	93.1	93.3	93.5	93.7
Participation rate 55-64 (in %)	57.4	61.2	63.7	68.7	72.7	75.0	75.2	75.0	76.4
Participation rate 60-64 (in %)	34.0	38.9	42.3	49.8	53.6	55.4	56.7	57.2	58.6
Effective retirement age (in years)	60.7	61.8	62.8	63.2	63.8	63.7	63.7	63.9	63.8
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.0	4.9	4.8
Employed (in 1 000)	4 311	4 490	4 514	4 633	4 658	4 674	4 669	4 635	4 695
Employed (in % of population)	48.5	49.2	49.1	49.6	49.0	48.5	47.5	46.8	46.9
Pensioners (in 1 000)	2 223	2 365	2 412	2 577	2 753	2 901	3 098	3 207	3 251
Pensioners (in % of population)	25.0	25.9	26.2	27.6	29.0	30.1	31.5	32.4	32.5
Pension benefit ratio (in %)	54.0	54.3	56.8	56.4	54.4	52.3	50.0	49.0	49.0

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

Table 32 (cont'd): Scenario Results: Constant Revenue-to-GDP-Ratio

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 358	1 341	1 348	1 390	1 389	1 386
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.2	60.6	60.6
CO_2e emissions (in Mt)	80.1	68.1	64.9	60.3	54.7	52.0	47.5	46.9	46.8
of which: ESR	50.2	43.7	41.7	36.4	30.8	27.8	22.8	22.1	22.0
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	54.0	53.1	53.8	54.2	56.1	57.0	57.1
Administration	7.5	7.8	7.8	7.6	7.5	7.5	7.4	7.4	7.3
Health care	7.1	7.7	7.9	8.1	8.6	9.0	9.7	10.1	10.5
in kind	6.8	7.4	7.5	7.8	8.2	8.6	9.3	9.7	9.9
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Long-term care	1.3	1.3	1.4	1.5	1.7	1.9	2.5	2.8	3.2
in kind	0.7	0.8	0.8	1.0	1.2	1.4	1.9	2.3	2.7
cash benefits	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5
Education	4.7	4.8	4.9	4.9	4.9	4.9	5.0	5.2	5.2
Family support	1.6	1.5	1.7	1.6	1.5	1.4	1.3	1.2	1.1
Unemployment	1.1	0.9	1.1	0.9	0.9	0.8	0.8	0.8	0.8
Pensions	13.9	14.5	15.8	16.1	16.3	16.3	16.4	16.6	16.5
AVSG - legacy system	8.6	8.5	8.8	7.7	6.3	4.7	2.1	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.0	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.5	6.7	8.8	12.6	14.9	15.6
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.9	0.7
Other transfers	1.6	2.0	2.0	1.8	1.8	1.8	1.8	1.8	1.6
Investment	3.1	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Subsidies	1.6	2.3	1.9	1.8	1.7	1.7	1.7	1.7	1.7
Other expenditures	4.1	5.0	5.6	4.9	4.9	5.0	5.4	5.5	5.4
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.6	0.7	0.6
Revenues	49.6	50.1	51.2	51.1	51.1	51.1	51.1	51.1	51.1
Taxes on consumption	8.9	9.2	9.1	9.5	9.7	10.0	10.1	10.2	10.4
Taxes on labor	24.8	24.3	25.5	25.1	25.0	25.0	24.9	25.1	25.2
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Taxes on profits	3.2	3.9	3.3	3.5	3.6	3.7	3.8	3.7	3.6
Taxes on pensions	2.7	2.6	3.0	3.0	3.0	2.8	2.7	2.7	2.7
Taxes on energy	2.4	1.9	2.2	2.0	1.8	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.6	0.5	0.5	0.5	0.6	0.5	0.5
Other revenues	6.3	6.8	6.8	6.6	6.6	6.6	6.6	6.6	6.6
Primary balance (target path)	2.0	-1.4	-0.2	-0.0	0.1	0.2	0.5	0.6	0.2
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.6	-1.8	-1.8	-1.8	-1.5	-1.5	-2.0
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.3	2.3	2.3	2.3	2.0	2.0	2.0
Fiscal space	**-0.0**	**0.0**	**-2.5**	**-2.0**	**-2.8**	**-3.3**	**-5.4**	**-6.5**	**-6.2**
Primary balance (no policy change)	*2.0*	*-1.4*	*-2.8*	*-2.0*	*-2.7*	*-3.1*	*-5.0*	*-5.9*	*-5.9*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.5*	*2.0*	*2.5*	*3.1*	*4.5*	*7.1*	*10.4*
Budget balance (no policy change)	*0.5*	*-2.6*	*-4.2*	*-4.0*	*-5.2*	*-6.1*	*-9.5*	*-13.0*	*-16.3*
Public debt (no policy change)	*71.0*	*78.6*	*81.8*	*88.1*	*97.5*	*110.2*	*150.4*	*211.2*	*279.8*
S1 indicator					*4.6*				
S2 indicator					*5.9*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Table 33: Scenario Results: Full Consolidation

	2019	2023	2025	2030	2035	2040	2050	2060	2070
in % of population									
Population (absolute in 1 000)	8 880	9 132	9 190	9 350	9 505	9 634	9 827	9 906	10 018
Share 65+	18.9	19.7	20.5	23.2	25.5	26.7	27.9	29.0	29.1
Share 80+	5.2	5.9	6.0	6.7	7.3	8.5	11.6	11.6	12.3
Number 65+/number 20-64 (in %)	30.7	32.3	33.9	40.0	45.7	48.4	52.0	55.2	55.8
Number 0-19/number 20-64 (in %)	31.4	31.7	31.6	32.6	33.4	33.1	34.1	35.4	35.8
Share widows and widowers	6.2	6.0	6.0	6.0	5.9	5.7	5.5	5.0	4.3
Share highest attained education: primary	18.2	16.5	15.8	14.2	12.8	11.5	9.4	7.7	6.5
Share highest attained education: secondary	59.1	59.3	59.4	59.4	59.3	59.0	58.3	57.5	56.7
Share highest attained education: tertiary	22.7	24.2	24.8	26.4	27.9	29.4	32.3	34.8	36.9
Change in % vs. previous year									
GDP, real	1.8	-1.0	0.4	0.9	1.1	1.1	0.9	1.2	1.3
Private consumption, nominal	3.3	9.7	0.6	2.9	3.0	3.0	2.6	2.7	3.3
Wage sum, nominal	3.7	8.2	0.6	2.8	2.9	3.0	2.8	3.2	3.3
GDP deflator	1.5	6.6	2.5	2.0	2.0	2.0	2.1	2.0	2.0
Consumer price index	1.5	7.8	3.3	2.1	2.1	2.0	2.1	2.0	2.0
Return rate on capital, real (in %)	2.7	2.6	2.5	2.8	3.0	3.1	3.2	3.1	3.1
Average interest rate public debt, real (in %)	-0.6	-2.8	-0.3	0.4	0.7	0.9	1.1	1.5	1.8
Contribution to yearly output growth in pp									
Capital	0.6	0.8	-0.0	0.2	0.2	0.3	0.3	0.4	0.5
Labor (in hours)	0.6	0.6	-0.1	0.1	0.0	0.1	-0.1	0.0	0.1
of which: population	0.3	0.6	0.2	0.2	0.2	0.2	0.1	0.0	0.1
of which: employed/population	0.5	-0.0	-0.1	-0.2	-0.2	-0.1	-0.2	-0.0	0.0
of which: hours/employed	-0.1	-0.0	-0.3	-0.0	0.0	0.0	-0.0	0.0	0.0
Labor productivity	0.6	-2.5	0.5	0.7	0.8	0.8	0.7	0.7	0.7
of which: age-education structure	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1
of which: public capital	0.0	0.7	0.1	0.0	0.0	0.0	-0.0	-0.0	-0.0
of which: residual	0.3	-3.4	0.3	0.5	0.7	0.6	0.6	0.6	0.6
Absolute									
Working hours (in millions)	7 325	7 268	7 234	7 368	7 409	7 449	7 390	7 323	7 474
Hours/employed (per year)	1 699	1 619	1 604	1 591	1 592	1 596	1 589	1 587	1 596
Labor share (in %)	54.2	55.4	57.4	57.2	56.9	56.7	56.4	56.4	56.6
GDP, nominal (2023 = 100)	83.6	100.0	106.6	124.1	144.7	168.9	228.1	306.6	424.3
GDP, real (2023 = 100)	97.7	100.0	99.5	104.6	110.5	116.8	129.0	142.4	162.2
Labor market and pensions									
Participation rate 15-74 (in %)	68.3	68.6	69.2	69.7	69.7	70.9	71.6	70.7	72.0
Participation rate 20-74 (in %)	70.0	70.3	70.8	71.3	71.4	72.5	73.3	72.5	73.9
Participation rate 15-64 (in %)	77.6	78.5	79.8	82.4	83.7	84.4	84.0	84.1	84.7
Participation rate 25-54 (in %)	88.6	89.2	90.5	92.4	92.9	93.0	93.1	93.2	93.5
Participation rate 55-64 (in %)	57.4	61.2	63.4	68.5	72.4	74.7	74.8	74.5	76.1
Participation rate 60-64 (in %)	34.0	38.9	42.0	49.6	53.5	55.2	56.4	56.9	58.3
Effective retirement age (in years)	60.7	61.8	62.7	63.2	63.7	63.6	63.7	63.9	63.8
Unemployment rate (in %)	6.5	5.7	6.6	5.6	5.3	5.2	5.1	4.9	4.8
Employed (in 1 000)	4 311	4 490	4 508	4 630	4 653	4 668	4 652	4 614	4 682
Employed (in % of population)	48.5	49.2	49.1	49.5	48.9	48.5	47.3	46.6	46.7
Pensioners (in 1 000)	2 223	2 365	2 417	2 580	2 756	2 903	3 102	3 212	3 255
Pensioners (in % of population)	25.0	25.9	26.3	27.6	29.0	30.1	31.6	32.4	32.5
Pension benefit ratio (in %)	54.0	54.3	57.4	56.8	54.8	52.4	49.5	47.9	46.8

Demographic indicators are measured at mid-year. Discrepancies between the sum of output growth contributions and GDP growth arise due to net product taxes (GDP vs. gross value added). Productivity is labor-augmenting, and the growth contribution of labor productivity can be interpreted as the growth of total factor productivity. The total wage bill and the labor share include self-employment income. The unemployment rate is measured as the number of registered unemployed persons as a percentage of the labor force potential (including the self-employed). Pensioners exclude recipients of survivor pensions only. The benefit ratio excludes expenditures on survivor pensions.

Source: own calculations.

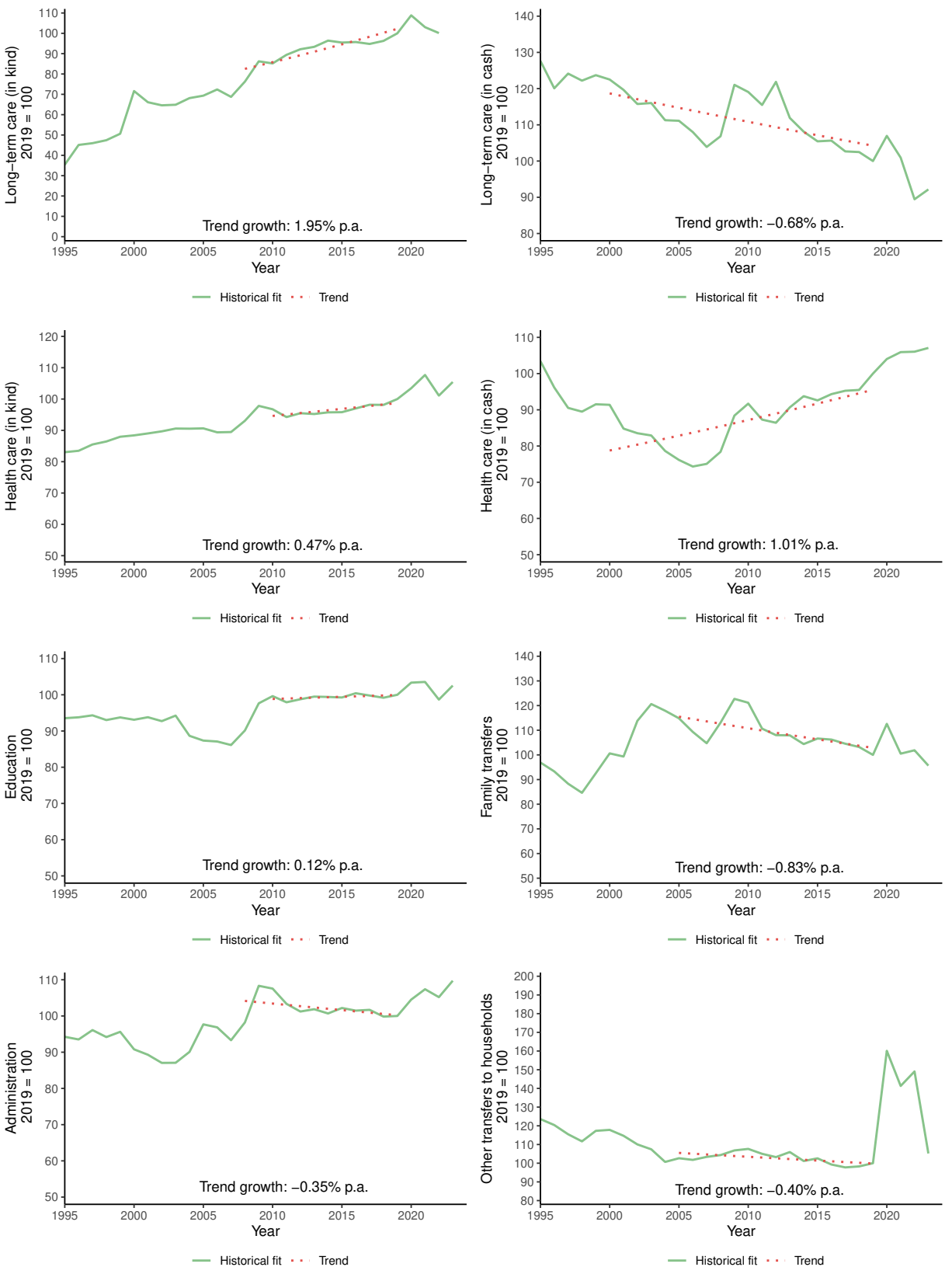
Table 33 (cont'd): Scenario Results: Full Consolidation

Continued	2019	2023	2025	2030	2035	2040	2050	2060	2070
Energy and emessions									
Energy consumption (in PJ, emission-weighted)	1 456	1 330	1 323	1 354	1 333	1 332	1 350	1 312	1 291
of which: renewable (in %)	35.9	41.2	43.2	47.6	52.3	55.2	60.1	60.5	60.5
CO_2e emissions (in Mt)	80.1	68.1	64.9	60.1	54.5	51.5	46.4	44.9	44.3
of which: ESR	50.2	43.7	41.7	36.4	30.7	27.6	22.2	21.1	20.8
Public finances in % of GDP									
Primary expenditures (no policy change)	47.6	51.5	52.7	52.1	52.4	52.4	53.4	53.9	53.8
Administration	7.5	7.8	7.5	7.4	7.2	7.1	7.0	6.9	6.8
Health care	7.1	7.7	7.6	7.9	8.2	8.6	9.1	9.4	9.8
in kind	6.8	7.4	7.2	7.5	7.8	8.2	8.7	9.0	9.3
cash benefits	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5
Long-term care	1.3	1.3	1.3	1.5	1.7	1.8	2.3	2.7	3.0
in kind	0.7	0.8	0.8	1.0	1.1	1.3	1.8	2.2	2.5
cash benefits	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4
Education	4.7	4.8	4.7	4.7	4.7	4.7	4.7	4.8	4.9
Family support	1.6	1.5	1.6	1.5	1.4	1.3	1.2	1.1	1.0
Unemployment	1.1	0.9	1.1	0.9	0.8	0.8	0.8	0.7	0.7
Pensions	13.9	14.5	15.8	16.1	16.2	16.1	15.9	15.8	15.4
AVSG - legacy system	8.6	8.5	8.8	7.7	6.4	4.8	2.2	0.7	0.1
Civil servants - legacy system	2.8	2.8	2.9	2.5	2.1	1.5	0.6	0.2	0.0
APG pension account	0.8	1.8	2.6	4.5	6.5	8.6	12.1	14.1	14.5
Survivors	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.8	0.7
Other transfers	1.6	2.0	2.0	1.7	1.8	1.7	1.7	1.7	1.5
Investment	3.1	3.7	3.7	3.7	3.7	3.6	3.5	3.5	3.5
Subsidies	1.6	2.3	1.8	1.7	1.7	1.6	1.6	1.6	1.6
Other expenditures	4.1	5.0	5.6	4.9	5.0	5.1	5.6	5.7	5.6
of which: ESR non-compliance costs	0.0	-0.0	-0.0	0.1	0.2	0.2	0.6	0.7	0.6
Revenues	49.6	50.1	52.4	52.1	52.5	52.7	53.9	54.6	54.1
Taxes on consumption	8.9	9.2	9.4	9.4	9.6	9.7	10.0	9.9	9.8
Taxes on labor	24.8	24.3	26.4	26.0	26.3	26.5	27.1	27.7	27.7
Taxes on capital	0.9	0.8	0.7	0.8	0.8	0.9	0.9	0.9	0.9
Taxes on profits	3.2	3.9	3.4	3.6	3.8	3.9	4.1	4.2	4.1
Taxes on pensions	2.7	2.6	3.1	3.1	3.1	2.9	2.8	2.7	2.6
Taxes on energy	2.4	1.9	2.2	2.0	1.8	1.6	1.6	1.5	1.3
Other taxes	0.5	0.6	0.3	0.5	0.5	0.5	0.7	0.8	0.8
Other revenues	6.3	6.8	6.8	6.7	6.7	6.7	6.8	6.9	6.9
Primary balance (target path)	2.0	-1.4	-0.3	0.0	0.2	0.3	0.6	0.7	0.3
Public debt (target path)	71.0	78.6	79.3	76.8	74.3	71.8	66.8	61.8	60.0
Budget balance (target path)	0.5	-2.6	-1.7	-1.7	-1.8	-1.7	-1.4	-1.4	-1.9
Debt reduction	3.6	-0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Stock-flow adjustments	-0.7	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.4	1.2	1.4	1.7	1.9	2.0	2.0	2.1	2.2
GDP denominator effect	2.4	4.2	2.4	2.2	2.3	2.2	1.9	1.9	1.9
Fiscal space	**-0.0**	**0.0**	**-0.0**	**-0.0**	**-0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Primary balance (no policy change)	*2.0*	*-1.4*	*-0.3*	*0.0*	*0.2*	*0.3*	*0.6*	*0.7*	*0.3*
Interest expenditure (no policy change)	*1.4*	*1.2*	*1.4*	*1.7*	*1.9*	*2.0*	*2.0*	*2.1*	*2.2*
Budget balance (no policy change)	*0.5*	*-2.6*	*-1.7*	*-1.7*	*-1.8*	*-1.7*	*-1.4*	*-1.4*	*-1.9*
Public debt (no policy change)	*71.0*	*78.6*	*79.2*	*76.8*	*74.3*	*71.8*	*66.8*	*61.7*	*60.0*
S1 indicator					*0.0*				
S2 indicator					*0.1*				

The target debt path is based on the "debt safeguard" requirement starting in 2025. Fiscal space is defined as the difference between the primary balance under the "no policy change" scenario and the target primary balance path which is consistent with the target debt path. Equivalently, fiscal space is the primary balance (no policy change) + GDP denominator effect - interest expenditures - stock-flow adjustments - debt reduction. Government debt and interest expenditures in the no-policy-change scenario (i.e., without the budget rule), as well as the S1 and S2 indicators, are determined without feedback effects on macroeconomic development.

Source: own calculations.

Figure 28: Trend Estimates of the Drift Component in Public Consumption and Household Transfers



Note: The drift components show the development of expenditure trends adjusted for demographic changes, inflation, and labor productivity growth (except for administration, which was not adjusted for population growth). For the trend estimation, the drift components were further adjusted for the effects of discretionary measures until 2019, while the years thereafter were excluded due to the vast amount and magnitudes of discretionary measures that render identifying underlying trends extremely difficult.

Source: Historical data as described in Section 3.2.1 and FISK OLG Model.