The long-term sustainability of public finances

An ageing population will put pressure on public finances in the coming decades. The NIER's *Fiscal Sustainability Report 2019* shows that Sweden's current strong public finances provide much-needed space to meet demographic challenges, but the margins are small. The buffer built up since the crisis of the 1990s will be used up within a few decades. This demographic outlook demands fiscal prioritisation in the form of lower growth in public expenditure or higher taxes to ensure that public finances are long-term sustainable. A situation where demographic changes are permitted to impact fully on public finances is not compatible in the long term with the current surplus target. If the surplus target were to be replaced with a balanced-budget target in 2027, as part of the scheduled review, fiscal policy would have some scope to adapt to demographic developments, while long-term fiscal sustainability would improve compared to the report's baseline scenario.

There are various ways of looking at the long-term sustainability of public finances. In the NIER's *Fiscal Sustainability Report 2019*, sustainable public finances are defined as where the public sector commitment can be maintained without government debt, expressed as a share of the economy, moving in such a way as to give the government problems meeting its obligations in the longer term. The report attaches particular importance to developments in the government's net financial position – the difference between its financial assets and its liabilities – expressed as a share of the economy, and gross debt.

With a long time horizon, it is reasonable to apply a broad definition of the fiscal policy stance, which is referred to here as an *unchanged public sector commitment*. In practice, this is a matter of interpreting what fiscal policy currently offers the populace. With such an interpretation, we can make projections where future fiscal policy adapts to demographic developments in a way that is considered compatible with the current fiscal policy stance. These projections presuppose active political decisions, for example to maintain spending levels relative to some measure of need.

The NIER interprets the public sector commitment in terms of unchanged personnel density in the provision of publicly funded services, together with an annual increase in standards in line with the historical pattern, unchanged replacement rates in the transfer systems, and unchanged tax rules (see the box "An unchanged public sector commitment").

The long time horizon for these projections means that account must be taken of behavioural changes that can be expected to occur in the longer term. Based on observed long-term trends, the population is assumed to work ever longer due to

The purpose of the report

On 20 February, the NIER published its annual report on the long-term sustainability of Sweden's public finances. This special analysis presents the report's overall conclusions. In the short term, until 2023, the scenario for the macro economy and the labour market is based on the National Institute of Economic Research's forecast and medium-term scenario from December 2018.

The aim of the report, as with other sustainability assessments of this kind, is to identify potential future imbalances in public finances at an early stage.

The report's baseline scenario should not be seen as a forecast for public finances, but as an attempt to shed light on the degree to which today's public sector commitment and tax rules are compatible with expected demographic and macroeconomic developments.

Government expenditure and revenue are projected on the basis of Statistics Sweden's latest population forecast, published in April 2018, which runs through to 2100. Demographic developments impact on government expenditure by increasing or decreasing demand for publicly funded welfare services. Spending on these services is affected by the size of the population, but also by its age composition, because the need for different welfare services changes over our lifetime. Demographic changes also affect government revenue, because labour supply and taxable factor income differs between groups.

Unchanged public sector commitment

What can be considered the prevailing public sector commitment is to some extent a matter of interpretation and depends partly on the time horizon for the analysis. For short-term projections, a narrow definition of fiscal policy is sometimes used, based on the latest central government budget for different items of expenditure. In the longer term, however, it would be misleading to interpret the public sector commitment from such a static perspective. Unchanged rules paint an unrealistic picture of future fiscal policy, above all by underestimating expenditure.

The NIER interprets an unchanged public sector commitment in terms of three assumptions: (i) personnel density in publicly funded services is maintained at 2019 levels plus an annual increase in standards in line with the historical pattern, (ii) constant replacement rates in the transfer systems, and (iii) unchanged tax rules. The fiscal policy projections are based on the central government budget decided on for 2019.

The first assumption refers to personnel density relative to the number of users of different welfare services, which means that government consumption and investment will vary over time as a result of demographic changes. When it comes to collective services, such as defence and justice, spending is assumed to follow aggregated population growth. The second assumption means that transfer payments rise in line with wages. The third means, in principle, that taxes rise with GDP, as today's taxes are generally expressed as a percentage of an income or a price.

better health, easing the pressure on costs from an ageing population. The sensitivity to these assumptions is discussed in the report.

CRITERIA FOR LONG-TERM SUSTAINABILITY

So what is needed for public finances to be considered long-term sustainable? There is no universally accepted criterion. One indication of long-term sustainability is if the government's net financial position as a share of GDP does not trend downwards over a long time horizon. Some variation over time may be entirely natural, for example due to demographic changes. A long period of gradual deterioration in the net financial position may also, depending on how revenue and expenditure move, lead to the net financial position eventually stabilising at a new, lower level that can still be considered sustainable. The European Commission's S2 indicator considers public finances to be long-term sustainable as long as the net financial position stabilises on an infinite horizon. This is a less stringent criterion for sustainability, as it does not rule out the net position declining over a very long period, even though this would be far from desirable.

It is also important not to focus entirely on the net financial position. Asset values are determined partly by factors beyond the reach of fiscal policy, and many government assets are associated with important welfare functions and cannot readily be sold without neglecting the government's obligations, for example assets in the old-age pension system. Importance is therefore also attached to developments in the government sector's gross debt, and consolidated gross debt (Maastricht debt) in particular, when assessing long-term sustainability.

The report thus makes an overall assessment based on these different aspects of long-term fiscal sustainability. Attention is paid in particular to the evolution of the net financial position, but also to how long it takes for the net position and Maastricht debt to stabilise, and how the new long-term levels compare to current levels.

DEMOGRAPICH DEVELOPMENTS ARE KEY

In Statistics Sweden's April 2018 population forecast, the Swedish population grows from 10 million people today to 14 million in 2100 (see Diagram 2). Average life expectancy is expected to continue to rise. Today, the life expectancy of a 65-year-old is just over 20 years. This increases to just over 23 years in 2050, and 27 years in 2100. The proportion of the population that is not of working age changes unfavourably with regard to public finances, due mainly to a growing share of elderly people (see Diagram 3). It is especially the share of over-80s that grows in relation to the working-age population.

One key assumption in the report's baseline scenario is that part of the increase in life expectancy consists of healthy, active years. As a result, people are able to work longer and exit the

Government net financial position and Maastricht debt

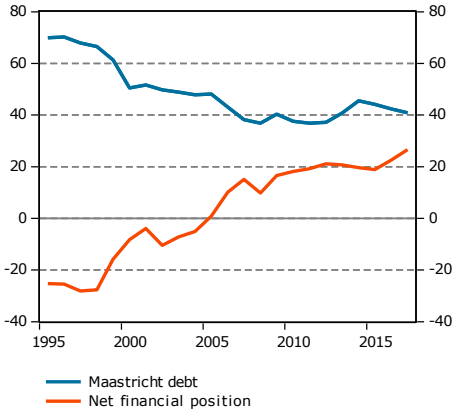
The government's net financial position is the net of its financial assets and gross debt, and corresponds to a firm's equity excluding real assets. If financial assets exceed gross debt, the government will be in a net wealth position. If gross debt exceeds financial assets, the sector will be in a net debt position.

The government's net financial position has improved since the crisis of the 1990s and has been positive for more than a decade (see Diagram 1), which is relatively unusual among comparable countries.

Maastricht debt is the government sector's consolidated gross debt and has decreased by close to 30 per cent since the mid-1990s. It is consolidated in the sense that internal liabilities within the government sector are eliminated, and it therefore corresponds to the amounts owed by central government, local government and the old-age pension system together to lenders outside the government sector.

Diagram 1 Government net financial position and Maastricht debt

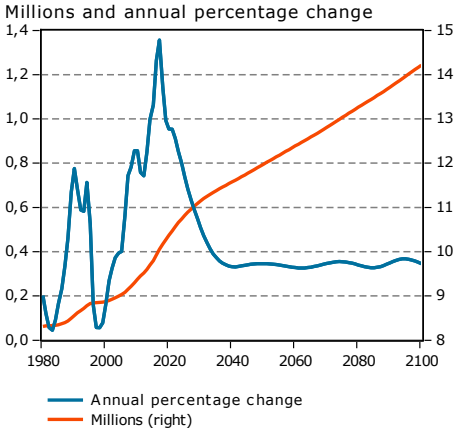
Per cent of GDP



Sources: Statistics Sweden and NIER.

Diagram 2 The population of Sweden

Millions and annual percentage change



Source: Statistics Sweden.

labour market at an ever greater age – in other words, the retirement age rises and the ratio between years of working life and years of retirement remains more or less constant. All else equal, this behavioural change favours public finances. It improves the economic dependency ratio, which shows the number of unemployed and others who are not in work for each person in employment (see Diagram 4). The economic dependency ratio still increases, however, due to the growing share of elderly in the population.

The demographic make-up of the population also affects growth in the longer term. For one thing, the ageing population means that demand for publicly funded welfare services rises, and so an increasing share of production is in the government sector where productivity growth is lower. For another, the number of hours worked rises less quickly than it has historically, due to the working-age population growing relatively slowly. Productivity is assumed to follow the historical pattern. All in all, this means that GDP grows by just over 1.9 per cent per year on average through to 2050, compared with 2.2 per cent in the period 1981-2017.

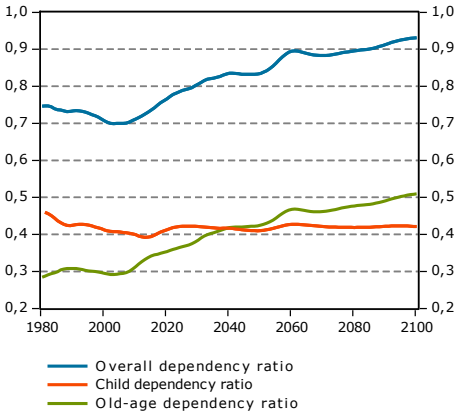
INCREASED CONSUMPTION OF WELFARE SERVICES

Government consumption is projected to rise in line with the demographic need, with the biggest increase between 2020 and 2035 (see Diagram 5). During this period, government consumption increases by around 1.5 per cent of GDP, which can be explained primarily by greater demand for health and elderly care due to the rising number of elderly people in the population.[1] At the same time, growth in government consumption is curbed by the assumption that health improves as life expectancy increases. This means that the over-65s gradually consume fewer welfare services per person than today in a given age cohort. As consumption of welfare services increases with age, see Diagram 6, this assumption has a positive effect on public finances.[2] After 2035, consumption is assumed to rise with GDP.

Government investment, which is projected on the basis of demographic developments and economic growth, decreases slightly as a share of GDP in the next few years. This can be explained by elevated levels of investment in recent years to meet major needs for both new buildings and the renovation of existing facilities in the local government sector. Investment falls slightly as a share of GDP as these needs ease, and then rises in line with GDP from 2023.

Diagram 3 Demographic dependency ratio

Ratio

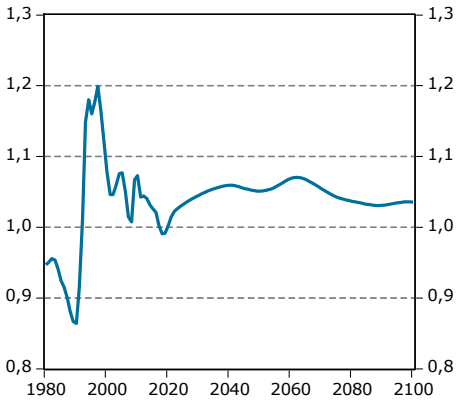


Note. The diagram shows the overall dependency ratio (the number of people who are not of working age relative to the number of people who are), which can be divided into a child dependency ratio (the number of people aged 19 and under relative to the working-age population) and an old-age dependency ratio (the number of people aged 65 and over relative to the working-age population).

Source: Statistics Sweden.

Diagram 4 Economic dependency ratio

Ratio

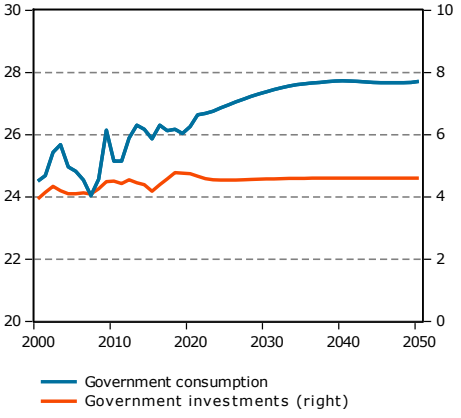


Note. The ratio between the non-working population and the number of employed.

Sources: Statistics Sweden and NIER.

Diagram 5 Government consumption and investment

Per cent of GDP



Sources: Statistics Sweden and NIER.

[1] The slightly lower GDP growth in the short term, which is a result of the economy returning to capacity in 2022, means that government consumption grows more quickly than GDP.

[2] The assumption that the need for welfare services is pushed back until a later age means that fewer welfare services than today are consumed per person in a given age cohort. Through to 2050, the degree of "rejuvenation" of behaviour is 2 years for the over-65s. As average life expectancy also increases, however, they will still consume more welfare services per person in total during their lifetime.

TRANSFERS FALL RELATIVE TO GDP

Government transfers to households have decreased as a share of GDP since the 1990s, and this trend is projected to continue through to 2030. Pension payments explain much of the decrease, while other social transfers are projected to move more or less in line with GDP (see Diagram 7).

Payments of income pensions fall as a share of GDP through to 2030, despite pensioners accounting for a growing share of the population. This is because increased life expectancy requires pension earnings to fund more years of life, limiting the average annual income pension per pensioner. Around 2030, the financial assets in the buffer fund have grown to the extent that assets exceed liabilities by 10 per cent, pushing the balance ratio above 1.1. Strictly speaking, the old-age pension system is a closed system, and its assets are not intended to fund spending other than future pensions. The projections therefore deal with the surplus by assuming an "accelerator" in the payment of income pensions in line with the proposal in the 2004 report on distributing surpluses in the old-age pension system.[3] The surplus is thus distributed as increased payments to existing pensioners and increased pension holdings for future pensioners. This means that pension payments stabilise from 2030 as a share of GDP.[4]

PRIMARY EXPENDITURE EXCEEDS PRIMARY REVENUE

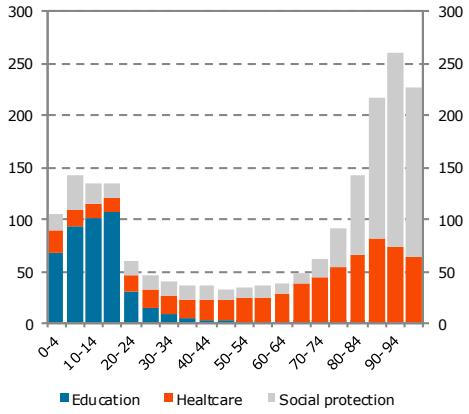
Primary expenditure, defined as government expenditure excluding interest payments, increases marginally as a share of GDP through to 2040 before falling again slightly (see Diagram 8). It peaks at 48.4 per cent of GDP but drops back slightly through to 2050. Primary expenditure consists of government consumption, government investment and transfers to households, firms and abroad. The main driver of primary expenditure is demographic developments, since welfare services are needed above all by the young and the old.

Primary revenue consists mainly of taxes and duties. Given unchanged tax rules, primary revenue moves largely with the economy, as the likes of social security contributions, income tax and value-added tax are expressed as a percentage of the tax bases. Some variation will be seen over time due to demographic changes, for example where changes in the age composition of the population affect the supply of labour and hence aggregate wages, or where a larger number of elderly results in reduced saving and increased consumption as a share of GDP.

In the baseline scenario, primary revenue falls as a share of GDP until 2022 as the economy slows. Revenue from capital

Diagram 6 Average cost of different welfare services per age group in 2016

Thousands SEK per person

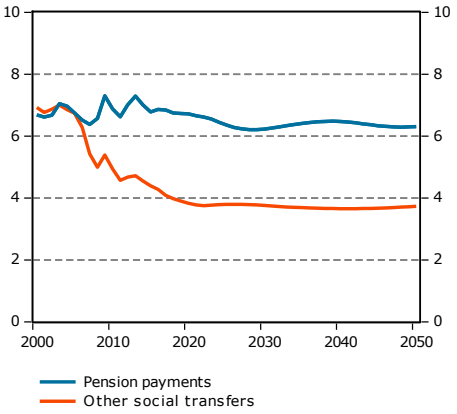


Note. The diagram shows the average cost of individual government consumption per person for five-year age cohorts.

Sources: Statistics Sweden and NIER.

Diagram 7 Transfers

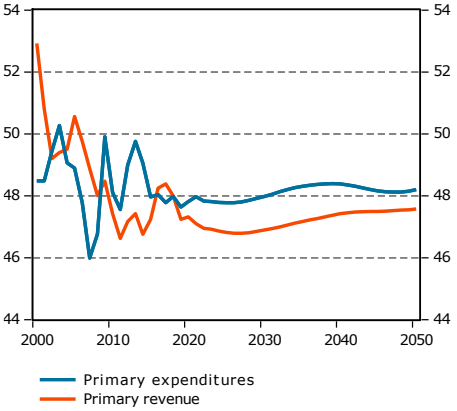
Per cent of GDP



Sources: Statistics Sweden, Swedish Pensions Agency and NIER.

Diagram 8 Primary expenditure and revenue

Per cent of GDP



Sources: Statistics Sweden and NIER.

[3] Swedish Government Official Reports (2004) "Utdelning av överskott i inkomstpensionssystemet" [Distribution of surpluses in the income pension system], SOU 2004:105.

[4] Without this accelerator, net wealth in the old-age pension system would be 10 per cent of GDP higher in 2050 and soar to 80 per cent of GDP in 2100, a trajectory that does not appear plausible.

taxes and corporate taxes decreases as a share of GDP as the economy normalises. Revenue then picks up gradually, due mainly to household consumption and taxable income growing as a share of GDP. Household consumption increases relative to GDP as a result of demographic developments bringing a shift in the population away from a high share of middle-aged people, who have a high propensity to save, in favour of elderly people, who instead spend their savings. The decrease in household saving means that household consumption increases, resulting in a higher tax-to-GDP ratio, above all via value-added tax.

Sustainability in the medium term

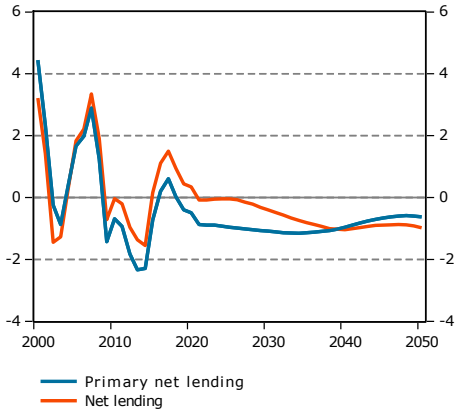
Given the projected developments in the government's primary expenditure and revenue, primary net lending falls in the short term to around –1 per cent of GDP in the coming five-year period (see Diagram 9).[5] An unchanged public sector commitment then means persistent deficits. Net lending remains around -1 per cent through to 2040, after which it improves slightly as a result of primary expenditure falling as a share of GDP, and revenue edging up as a share of GDP.

Net lending is obtained by adding net interest payments to primary net lending. Thanks to positive net interest, it is higher than primary net lending. Net lending nevertheless falls from around 0 per cent of GDP to around -1 per cent in 2040 due to a decline in net capital income (see Diagram 10). Interest expenditures rise more than interest income due to increasing gross debt, but also as a result of interest rates on assets and liabilities normalising at different paces.

Due to the negative net lending, the government's net wealth trends down as a share of GDP through to 2050, and Maastricht debt climbs to more than 50 per cent of GDP (see Diagram 11). Value changes and the interest rate-growth differential have explained the bulk of changes in the net financial position historically, but are less significant in the scenario going forward (see Diagram 12).[6] The downward trend in the net position relative to GDP indicates that public finances cannot be considered truly sustainable over this horizon. The net position is still positive in 2050, and Maastricht debt is around the level it was at the turn of the millennium, but the rate of change means that the deterioration in public finances in the baseline scenario is problematic.

Diagram 9 Net and primary net lending

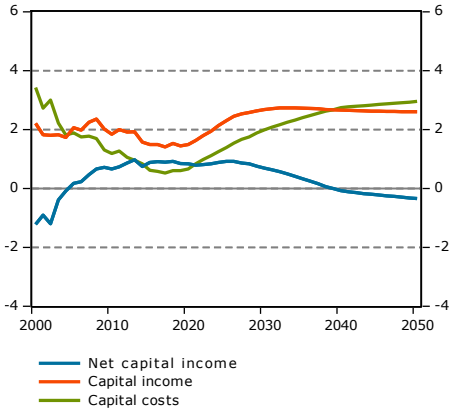
Per cent of GDP



Sources: Statistics Sweden and NIER.

Diagram 10 Government net capital income

Per cent of GDP

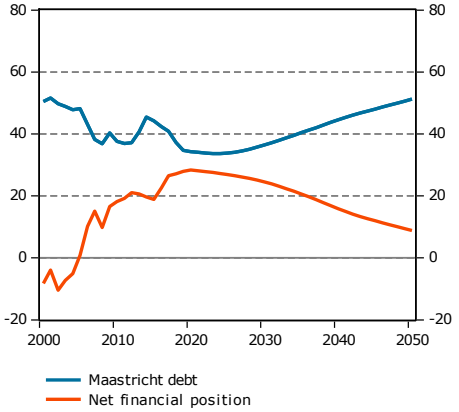


Note. Net capital income is defined as capital income less capital costs.

Sources: Statistics Sweden and NIER.

Diagram 11 Net financial position and Maastricht debt

Per cent of GDP



Sources: Statistics Sweden and NIER.

[5] Replacement rates in the transfer systems are kept constant from 2019 onwards, unlike in the NIER's short run forecasts.

[6] The interest rate-growth differential captures effects on the net position beyond those from primary net lending. These include the effect from net capital income, but also the growth effect. Since the net position is expressed as a percentage of GDP, economic growth will affect movements in the net position. The interest rate-growth differential determines what primary net lending needs to be for the net position not to deteriorate.

UNCHANGED PUBLIC SECTOR COMMITMENT NOT COMPATIBLE WITH CURRENT SURPLUS TARGET

In the baseline scenario, net lending moves in a way that is not compatible with the current surplus target of one-third of a per cent of GDP over a business cycle. For the surplus target to be met every year, revenue needs to be increased and/or spending reduced. The size of the adjustment needed in the longer term is an average of almost 1 per cent of GDP (see Diagram 13). This might mean adjusting transfers to households (government expenditure) or household taxation (government revenue).[7] Both of these changes could impact on the labour supply and thus how the tax bases and tax revenue move. How these dynamic effects affect the macroeconomy and public finances is discussed in the report.

If the current surplus target were to be met every year, the net financial position and Maastricht debt would stabilise around the current level (see Diagram 14). Public finances could then be considered long-term sustainable over this horizon, unlike in the baseline scenario.[8]

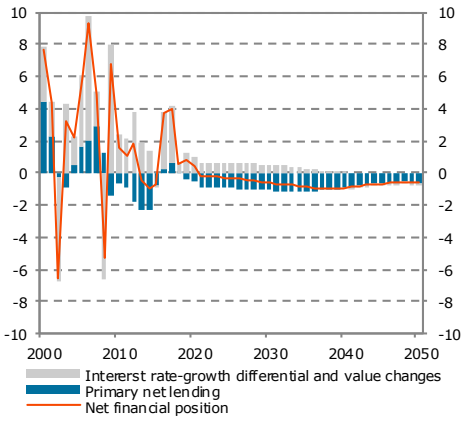
SUSTAINABILITY AFTER 2050

After 2050, spending in particular increases as a share of GDP, peaking temporarily around 2060. This is a result of the unusually large cohort born in the 1990s reaching retirement age. Primary net lending hits bottom at this time (see Diagram 15). After 2060, primary expenditure as a share of GDP falls faster than primary revenue, which means that primary net lending improves and approaches zero towards the end of the century. The negative primary net lending causes the net financial position to deteriorate. Net interest payments become more negative, and overall net lending remains negative at just over -1 per cent of GDP despite the improvement in primary net lending.

From 2060, the net financial position is negative – in other words, Sweden has net debt (see Diagram 16). The net position deteriorates continuously before stabilising towards 2090. Strictly speaking, this means that public finances are to be considered long-term sustainable, but this is at the farthest possible horizon in the scenario and around the levels seen after the crisis of the 1990s of just over -10 per cent of GDP. Maastricht debt continues to rise after 2050, and in 2060 it passes the ceiling in the Stability and Growth Pact of 60 per cent of GDP. Net

Diagram 12 Breakdown of movements in net financial position

Annual percentage change

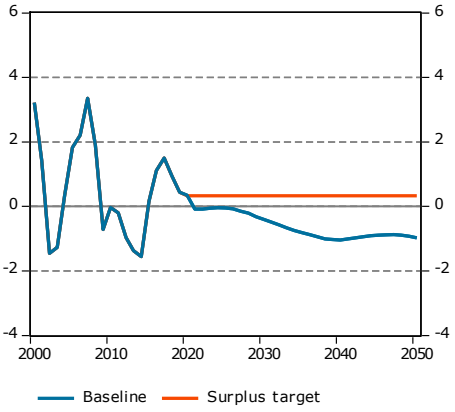


Note. The diagram presents the interest rate-growth differential and the contribution of primary net lending to movements in the net financial position. Changes in the value of assets and liabilities are shown together with the interest rate-growth differential. The scenario assumes that the value of non-interesting-bearing assets rises by 2 per cent per year.

Sources: Statistics Sweden and NIER.

Diagram 13 Net lending

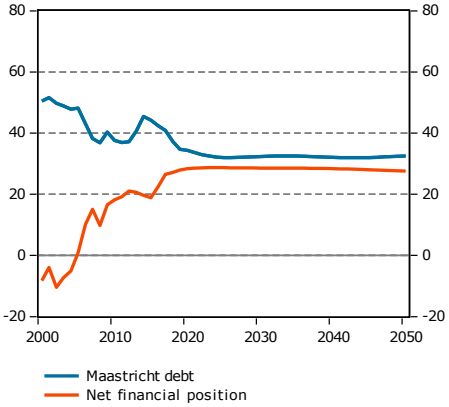
Per cent of GDP



Sources: Statistics Sweden and NIER.

Diagram 14 Net financial position and Maastricht debt if the surplus target is met

Per cent of GDP



Sources: Statistics Sweden and NIER.

[7] The surplus target could also be met through higher net lending in the old-age pension system by setting the assumed accelerator for income pensions lower than in the baseline scenario.

[8] The reason why the net position and Maastricht debt stabilise rather than performing more positively when net lending is in line with the surplus target, is that primary net lending is still slightly negative in the scenario. Net capital income does not deteriorate to the same extent as in the baseline scenario, however, which means that net wealth stabilises despite primary deficits.

lending is also below the EU medium-term budgetary objective of -1 per cent of GDP during the period.[9]

SUSTAINABILITY OVER AN INFINITE HORIZON

One perspective on the long-term sustainability of public finances is provided by the S2 indicator. This shows the degree to which primary net lending needs to be adjusted for the government's net financial position to stabilise at some point in the future. For example, an S2 indicator of 1.0 indicates that primary net lending needs to be permanently tightened by 1.0 per cent of GDP. For public finances to be considered long-term sustainable from this perspective, the S2 indicator needs to be zero or negative, with a negative value indicating a safety margin. Table 1 presents the S2 indicator for the baseline scenario. The score of 0.02 means that public finances are more or less long-term sustainable according to this measure. One weakness of the S2 indicator is that it considers only whether the net position stabilises, and not the level at which it stabilises.

The S2 indicator can be divided into three components (see the box "The S2 indicator's three components"). The first term shows that Sweden's strong starting position, with initial net wealth, has a positive effect on long-term fiscal sustainability. The second term shows the effect of primary net lending through to 2100. As primary net lending is negative during the period, the second term is positive. Since the intertemporal budget constraint is to apply over an infinite time horizon, an assumption must be made about what happens after 2100. In our estimate of the S2 indicator, we assume that the situation in 2100 prevails indefinitely. Primary net lending is 0.02 per cent of GDP in 2100 and thus makes only a marginal contribution to sustainability over an infinite horizon.

It is therefore thanks to the government's initial net wealth that public finances can be considered sustainable based on the S2 indicator. Given the considerable uncertainty about how the economy will perform through to 2100 and beyond, however, it is inappropriate to use the S2 indicator to draw firm conclusions.

Table 1 The S2 indicator

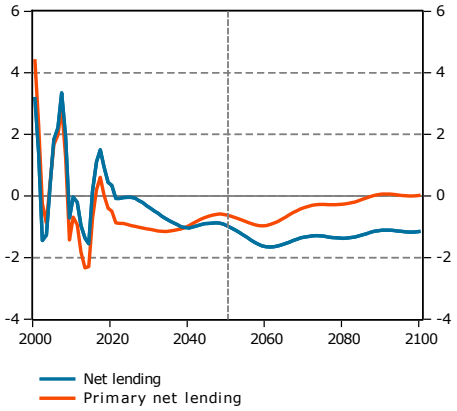
The report's main scenario

(1) Interest on initial net debt	–0.07
(2) Effect of primary deficits through 2100	0.11
(3) Effect of primary deficits after 2100	-0.02
S2 = (1) + (2) + (3)	0.02

Source: NIER.

Diagram 15 Government net lending in the long-term

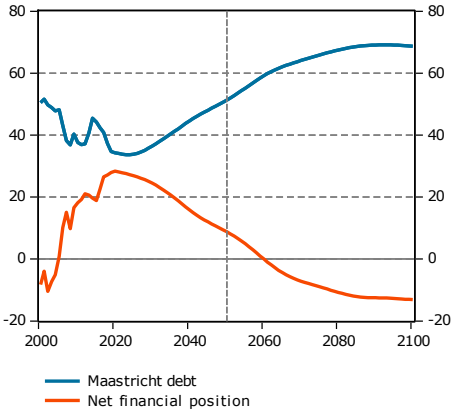
Per cent of GDP



Sources: Statistics Sweden and NIER.

Diagram 16 Net financial position and Maastricht debt in the long-term

Per cent of GDP



Sources: Statistics Sweden and NIER.

[9] The budgetary objective is formulated such that structural net lending should not fall below -1 per cent of potential GDP. Structural net lending is a measure of net lending that excludes cyclical effects. Since there are no cyclical variations in the scenario, net lending is the same as structural net lending, and GDP is the same as potential GDP.

COMPARISON WITH PREVIOUS PROJECTIONS

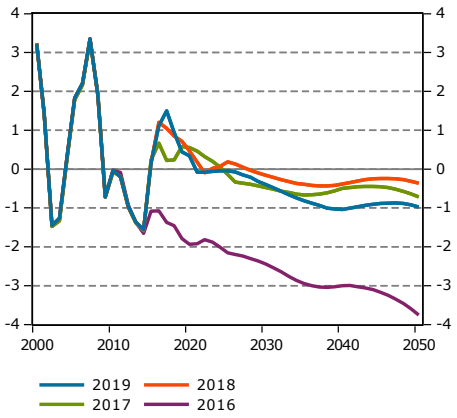
Compared to the NIER's projections published in 2017 and 2018, sustainability has deteriorated marginally (see Diagram 17, Diagram 19 and Diagram 18).[10] Relative to the projections made in 2016, however, sustainability is far stronger. The reason why these projections differ so greatly is the starting position for public finances and a different forecast for inflows of asylum seekers. In 2016, initial net lending was negative, which had considerable long-term consequences because an accumulated deficit needed to be financed in the future (see Diagram 17). Government consumption also moved less favourably as a result of the Swedish Migration Agency then anticipating larger numbers of asylum seekers.

Although initial net wealth is now slightly stronger than in 2018, it is expected to fall faster as a share of GDP to 9 per cent in 2050 (see Diagram 19). This can be explained by weaker primary net lending throughout the scenario, due to both weaker revenue and higher expenditure relative to GDP.

The main reason for the slightly lower revenue is lower aggregate wages in the economy as a result of slower growth in hours worked. When it comes to primary expenditure, demographic developments through to 2050 are slightly more favourable than in the 2018 projections. This can be explained chiefly by the number of young people growing more slowly in Statistics Sweden's latest population forecast than in the one used for last year's projections. Primary expenditure is nevertheless higher, which can be explained by the assumption about payments from the pension system having been revised such that these payments are higher, and net wealth in the old-age pension system lower, than in the 2018 projections.

Diagram 17 Net lending, comparison with previous projections

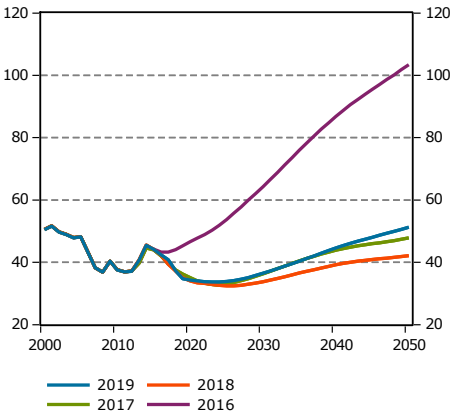
Per cent of GDP



Sources: Statistics Sweden and NIER.

Diagram 18 Gross debt, comparison with previous projections

Per cent of GDP



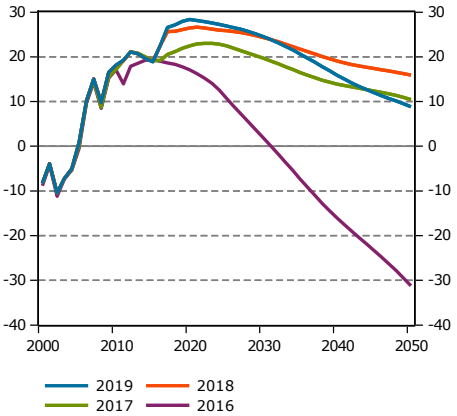
Sources: Statistics Sweden and NIER.

Conclusions

The purpose of the NIER's fiscal sustainability projections is to assess the degree to which today's public sector commitment and taxes are compatible with expected demographic developments. In the baseline scenario, government expenditure adapts to demographic changes without being restrained by the surplus target, even though this target is a cornerstone of the fiscal policy framework. The projections should not therefore be interpreted as a forecast of how public finances will perform. Sweden has a comparatively strong fiscal policy framework, and a history of relatively good fiscal discipline indicates that in practice there is a limited risk of public finances developing unsustainably, at least in the near term.

Diagram 19 Net financial position, comparison with previous projections

Per cent of GDP



Sources: Statistics Sweden and NIER.

[10] The 2018 sustainability projections were revised in November 2018. The comparison here is with the revised figures. See https://www.konj.se/publikationer/special-studier/specialstudier/2018-02-22-hallbarhetsrapport-for-de-offentliga-finanserna-2018.html (in Swedish only).

One conclusion of the report is that expected demographic developments will put pressure on public finances, but that strong initial public finances provide scope to meet this challenge. At the same time, it has to be said that the margins are small. In the baseline scenario, where demographic changes are permitted to have their full impact on public finances, today's surpluses turn within a few years into deficits which persist for a long time. These deficits cause the net financial position to deteriorate for a long period and turn from net wealth to net debt, while gross debt does not stabilise until the end of the century and does so at a much higher level than today. This comes despite the baseline scenario's assumptions of a longer working life and gradually improved health among the elderly. There are also no crises in the baseline scenario, and historical experience shows that crises can have an enduring impact on public finances.

One further conclusion is that the current public sector commitment and level of taxation are not compatible in the long term with the current surplus target. Given expected demographic developments, there is a risk that the surplus target will prove overly restrictive in the longer term. At the same time, the surplus target serves partly as a way of ensuring safety margins for when the economy underperforms. These margins are needed for a number of reasons. The long-term demographic forecast is sensitive to assumptions, and the reality may turn out differently. The baseline scenario rests on assumptions of a longer working life and improved health easing the pressure on costs from an ageing population, but these mitigating factors may not arise. Economic crises can have long-lasting effects on public finances. The cost of future climate change is unknown and could be considerable for both the private and the public sector.

Although it is reasonable for unfavourable demographic developments to result in a slight deterioration in public finances, prudence dictates that sufficient safety margins should be maintained to absorb weaker economic performance. All in all, this supports retaining a surplus target, or at least a balanced-budget target. One possibility for striking a balance between, on the one hand, permitting demographic developments to have some impact on public finances, and, on the other, ensuring slightly larger safety margins, is illustrated in the report using an alternative scenario where the current surplus target is replaced with a balanced-budget target from 2027 as part of the scheduled review of the target (see Diagram 20, Diagram 21 and Diagram 22).

The long-term projections in the report suggest that a balanced-budget target could be operated for a long period without overly restricting the scope for fiscal policy to adapt to expected demographic changes.

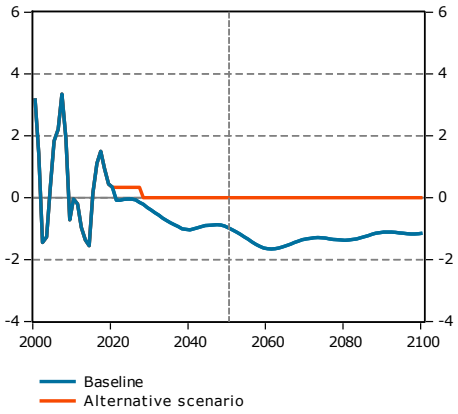
The surplus target

The surplus target for government net lending was introduced in the year 2000 to strengthen public finances after the crisis of the 1990s. The target was initially set at 2 per cent, but was lowered to 1 per cent following a review of the national accounts in 2007 when the premium pension system was transferred out of the government sector. From 2019, a new surplus target applies. This is currently one-third of a percent on average over a business cycle, but is to be reviewed every eight years, partly on the basis of how debt has moved relative to a debt anchor of 35 per cent.

A key role for the current surplus target is to safeguard strong public finances and so ensure sustainability. The long-term levels of the public sector commitment and taxes are ultimately a matter for politicians and voters to decide. The surplus target can then be adjusted to the population's preferences as expressed through the democratic process.

Diagram 20 Net lending

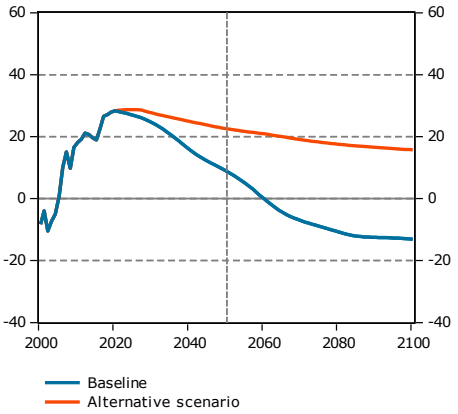
Per cent of GDP



Sources: Statistics Sweden and NIER.

Diagram 21 Net financial position

Per cent of GDP



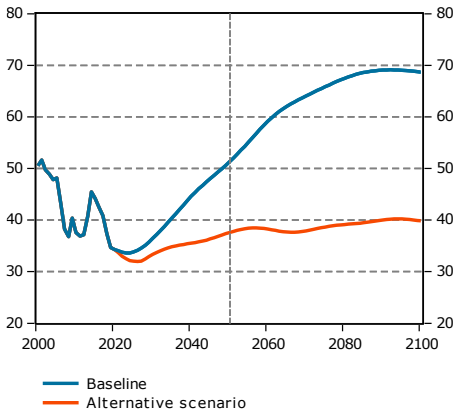
Sources: Statistics Sweden and NIER.

NET LENDING TARGET DEMANDS PRIORITISATION

A target for net lending, be it a balanced-budget target or a surplus target, entails stronger net lending than in the baseline scenario. Net lending can be improved through lower spending or higher taxes. It is important to note that the projections in the baseline scenario assume an increase in the standard of publicly funded welfare services that has a considerable impact on how expenditure moves in the long term. This assumption means that government consumption and investment rise not only with the demographic need, but also with an increase in standards of 0.6 per cent per year in line with the historically observed trend. However, it is reasonable to question whether it is justified not only to maintain personnel density but also to raise the standard of welfare services, given that Sweden faces a significant demographic challenge with fewer people in work providing for more and more elderly. Even an increase in standards that is just a couple of tenths of a percent less than in the baseline scenario brings a clear improvement in public finances, which is illustrated in one of the report's alternative scenarios. One conclusion from these projections is thus that there is scope to raise the standard of welfare services while also strengthening public finances relative to the baseline scenario. If this is to be done without raising taxes, however, standards will need to be raised at a somewhat slower pace.

Diagram 22 Maastricht debt

Per cent of GDP



Sources: Statistics Sweden and NIER.

Technical appendix

In the sustainability projections, the labour market variables are influenced by changes in the composition of the population in terms of gender, age and country of origin, based on Statistics Sweden's population forecast. Different population groups have different characteristics, including participation rates, employment rates and average hours worked by those who are employed. In the model projections, these differences are assumed to persist, and in the long run the scenario is based almost entirely on demographic projections, with the exception of the assumption of a longer working life. Until 2050, the number of hours worked rises more slowly than the average for 1981-2017, with the working-age population growing more slowly than before and those born abroad accounting for an increasing proportion of the working-age population. After 2050, growth in hours worked is even lower than the historical average, due to slower population growth. As a result, GDP growth is assumed to be lower through to 2100 than it has been historically.

Productivity growth has been low in recent years but is assumed to move in line with the historical average from 2023 onwards. Relatively low productivity growth means that GDP grows more slowly through to 2050 than it has in recent decades. After that, it is mainly the relatively slow growth in hours worked that puts a damper on GDP.

Growth in government consumption is driven by demographic developments. An ageing population means that a growing share of hours worked in the economy is used for the production of welfare services. Government consumption therefore increases as a share of GDP until the end of the 2030s.

Coming demographic developments entail a shift in the population composition, away from a high share of middle-aged people, who have a high propensity to save, and toward elderly people, who instead spend their savings. The household saving rate therefore drops back to historical levels, motivating lower net lending to abroad. Net exports as a share of GDP therefore trend down until the mid-2060s before holding around 1 per cent of GDP. The reduction in household saving means that household consumption rises as a share of GDP.

Investment in the economy has been projected such that the capital stock in current prices is constant relative to value added in current prices. The capital stock is assumed to be just over 300 per cent of GDP in current prices, which is consistent with what has been observed historically.

The nominal interest rate is assumed to normalise gradually to 4.5 per cent in 2040 and is then constant. The average return on interest-bearing instruments rises through to 2040 and is then 4.5 per cent, as is the total return on shares, breaking down into dividends of 2.5 per cent and appreciation of 2.0 per cent. Inflation is assumed to be in line with the 2 per cent target from 2024 onwards.

Methodology

The projections are based throughout on Statistics Sweden's April 2018 population forecast. In the short term, they are also based on the NIER's December 2018 forecast and medium-term scenario. The projections after that have been produced using the NIER's long-term models. From 2023 onwards, the scenario builds on the assumption that the economy continues to operate at capacity. This means that the output gap and the labour market gap are closed, and that all potential variables are the same as actuals. Economic growth from 2023 onwards is determined by demographically driven developments in hours worked and the technological advances that, together with capital formation, give aggregate productivity growth.

A longer working life

By 2023, unemployment is at the equilibrium rate of 6.8 per cent. In the projections, both the employment rate and the participation rate in the 15-74 age group fall somewhat between 2020 and 2040. This is mainly the result of an increase in those born outside Europe as a share of the working-age population. This group has historically had a lower employment rate than other groups, but the labour market status of those born abroad varies partly with how long a person has been in Sweden. Due to the large number of refugees arriving in the past decade, the average duration of residence in Sweden for those born outside Europe has fallen. The participation rate and the employment rate are assumed to rise gradually among recent arrivals and be the same after 15 years as the average for all those born outside Europe.

The average age at which people exit the labour market, or retirement age, is assumed to rise largely in step with average life expectancy, such that the ratio between years of working life and years of retirement is more or less constant. It is also assumed that the age at which they enter the labour market does not change over time. The average retirement age is assumed to increase by around 1.5 years by 2050 and 4 years by 2100.

In the baseline scenario, the participation rate rises slightly after 2040 and hits 75 per cent in 2050. This is due to increasing participation among older people and relatively rapid growth in those born in Sweden, who have historically had a higher participation rate than other groups. The employment rate – the number of employed relative to the population of working age – follows a similar path. For the 15-74 age group as a whole, this means that the participation rate and the employment rate are almost 2 percentage points higher in 2050 than with an unchanged retirement age.

Government consumption is projected on the basis of demographic developments and an increase in standards in line with the historical pattern. Collective consumption moves with the overall population, whereas individual consumption is projected on the basis of changes in different age groups.

Local government investment moves with local government consumption and thus follows demographic developments. Central government investment, which consists mainly of investment in infrastructure and defence, has a weaker connection with demographic developments and is therefore assumed to move with potential GDP.

The replacement rates in the various transfer systems follow average wages, which move with GDP. Pension payments also rise more or less in line with average incomes. However, with unchanged rules and a 4.5 per cent total return from 2040 onwards, net wealth in the pension system would grow sharply. The scenario therefore assumes that surpluses in the pension system beyond a certain level are then distributed in the form of payments to existing pensioners.

Revenue is projected on the basis of 2019 rules, which implies that tax revenue approximately follows GDP in current prices. Since different tax bases are taxed at different rates, however, the tax-to-GDP ratio depends on the composition of GDP. For example, an ageing population will affect how household consumption moves.

Increase in standards

Besides a constant personnel density, it is assumed that costs for wages, capital and inputs account for constant shares of total costs in the production of welfare services, and that prices for capital and the consumption of inputs increase more slowly than wages. This creates scope for standards to trend upwards as a result of more and/or better equipment per hour worked over time. This increase in standards is assumed to be 0.6 per cent per year, in line with the historical pattern.

Table 2 Hours worked, productivity and GDP

Average percentage change

	1981–2017	2018–2050	2051–2100
Population Aged 15-74	0.5	0.5	0.3
Labour force	0.6	0.5	0.3
Employment	0.5	0.5	0.4
Hours worked	0.6	0.4	0.3
Productivity	1.6	1.5	1.6
GDP, constant prices	2.2	1.9	1.9
Household consumption	1.9	2.3	2.3
Government consumption	1.2	1.1	0.9
GDP per capita, constant prices	1.7	1.4	1.6
GDP, current prices	5.8	4.2	4.2

Note. The values for 2018–2050 and 2051–2100 are calculated for the report's main scenario.
Sources: Statistics Sweden and NIER.