

SPECIAL ANALYSIS

The long-term sustainability of Swedish public finances

The NIER is of the opinion that there are not currently any serious imbalances threatening the long-term sustainability of Sweden's public finances. However, demographic developments will mean an increased need for welfare services in the future. To maintain an unchanged personnel density in the production of welfare services in the long term, taxes will need to be raised by 1.5 to 2 per cent of GDP unless there is a gradual increase in the retirement age. The following is a summary of the special report *Is an Unchanged Public Sector Commitment a Sustainable Commitment?* published together with this edition of *The Swedish Economy*.

Average life expectancy in Sweden has increased by ten years since the 1950s and is set to grow by at least another four years over the next half a century, based on Statistics Sweden's population forecast. Not only are we living longer, but the proportion of elderly people is growing relative to the proportion of younger people even without the increase in life expectancy. From the early 1980s to the early 2000s, the ratio of elderly people to those of working age was largely constant, with around 30 people aged 65 and over for every 100 of working age (20–64 years). In recent years, however, the ratio has begun to rise, and it is forecast to reach 50 per 100 by 2060.

This population ageing raises questions about the future level and financing of welfare services. Will we be able to maintain standards of health care, education and elderly care, and replacement rates in the social transfer systems? Will the pension system be able to provide for an ever larger number of pensioners who are living ever longer? Will future tax revenue be enough to finance a public sector commitment at today's levels? These questions are all related to the long-term sustainability of public finances, which is the subject of the NIER's special report *Is an Unchanged Public Sector Commitment a Sustainable Commitment?*¹⁸

¹⁸ Occasional Study No. 39, Swedish National Institute of Economic Research, 2014.

SUSTAINABLE PUBLIC FINANCES: INCOME AND EXPENDITURE BALANCE IN THE LONG TERM

The starting point for the sustainability analysis is that flows of expenditure in the general government sector must be matched by equal flows of income over time. If expenditure exceeds income, debt will inevitably increase. If this imbalance is large and persistent, debt levels will eventually become unmanageable, and public finances will not be long-term sustainable.

The study presents projections of public finances through to 2060 based on a number of simplified assumptions about how the economy will perform in the long term. The assessment of the long-term sustainability of public finances is based on the *current* scope of the welfare commitment and the tax system that is to finance it. The question analysed is whether future developments in general government expenditure with an unchanged public sector commitment can be financed with the income generated with the current design of the tax system.¹⁹

INCREASED NEED FOR WELFARE SERVICES AS WE GROW OLDER

Demographic developments play a pivotal role in the long-term performance of public finances. Changes in the working-age population are an important determinant of the size of the labour force and thereby the nation's overall production, in other words GDP. Since tax revenue is largely dependent on developments in GDP, demographics are important for the size of this revenue.

Demographic developments also play a key role on the expenditure side. A substantial proportion of general government consumption, such as health, education and care services, is age-related. In 2005, individual general government consumption expenditure for a person in their 90s averaged almost SEK 200,000 per annum. The equivalent figure for a person of working age was just over SEK 20,000. The relative sizes of the working-age and non-working-age populations are therefore very important for general government consumption expenditure. Expenditure on social transfers is also determined largely by the age structure of the population. Pensions accounted for around 58 per cent of total transfers to households in 2012, and

¹⁹ The long-term sustainability of Swedish public finances is assessed regularly not only by the NIER but also by the Swedish government and the European Commission, cf. the 2013 Spring Fiscal Policy Bill (bill 2012/13:100) and the European Commission's "Fiscal Sustainability Report 2012", *European Economy* 8/2012. The Swedish Fiscal Policy Council, in turn, conducts regular reviews of the government's sustainability calculations, cf. the Council's report for 2013, *Swedish Fiscal Policy*.

child/family-related benefits such as parental and child allowance for another 12 per cent.

The demographic dependency ratio – the ratio between the number of people who are not of working age and the number of people who are – fell slightly from the early 1980s through to the early 2000s, reaching a low of around 0.7 in 2003, which meant that there were 70 people of non-working age per 100 people of working age. According to Statistics Sweden’s population forecast, we now face a long period of growth in the demographic dependency ratio to 0.85 in 20 years and 0.92 in 45 years (see Diagram 50). In addition, the number of people aged 90 and above is expected to rise from today’s level of around 100,000 to almost 300,000 in 2060 (see Diagram 51). The rise in the demographic dependency ratio is due almost exclusively to a growing share of elderly people aged 65 and over, as the proportion of children and young people aged 19 and under is almost constant in Statistics Sweden’s population forecast.

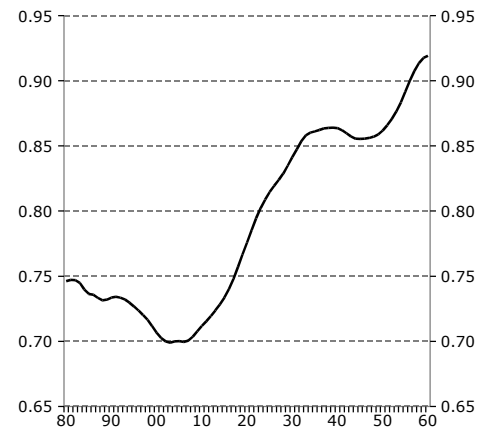
THREE SCENARIOS FOR GOVERNMENT CONSUMPTION

An unchanged public sector commitment can be understood in different ways. The study therefore analyses three scenarios where the level of welfare services moves in different ways due to different definitions of an unchanged commitment.²⁰ In scenario A, an unchanged commitment means that the *volume* of public services per user is kept constant at current levels, so that the standard of public services is the same in the future as it is today. In scenario B, *personnel density* in the production of welfare services is instead kept constant, so that, for example, the number of teacher hours per ten-year-old and the number of hours of home help per 80-year-old are the same in the future as they are today. This is the definition of an unchanged public sector commitment that the NIER normally uses in its forecasts for public finances on a five-year horizon. Productivity growth in the production of goods and services for general government consumption will then benefit the population in the form of a gradual increase in the standard of welfare services. In scenario C, the public sector commitment is placed in relation to the size of the overall economy, such that expenditure on welfare services per user is constant as a share of GDP per capita.

The analysis differentiates between *individual* (user-specific) and *collective* general government consumption. Individual consumption consists of public services that can be linked to a spe-

Diagram 50 Demographic dependency ratio

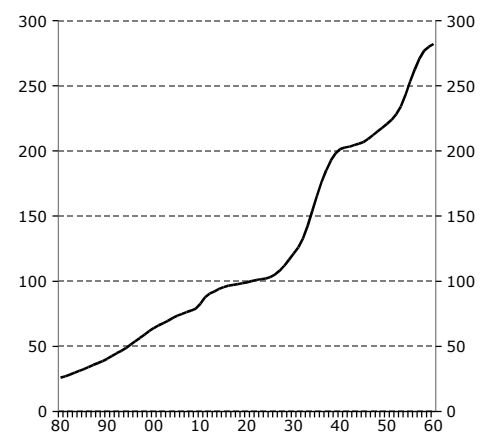
Population not of working age as share of population of working age



Source: Statistics Sweden.

Diagram 51 Population aged 90 or older

Thousands

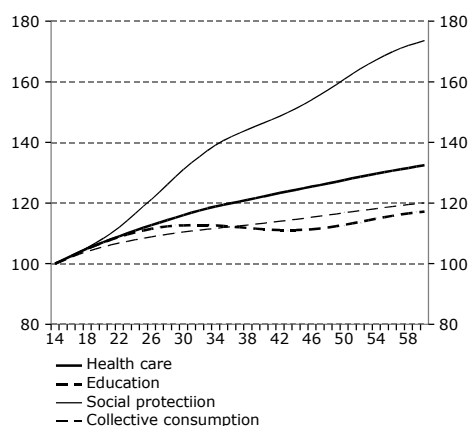


Source: Statistics Sweden.

²⁰ The general government sector’s income and other expenditure (investment, social transfers, etc.) move in largely the same way in all three scenarios.

Diagram 52 Resource needs for government consumption

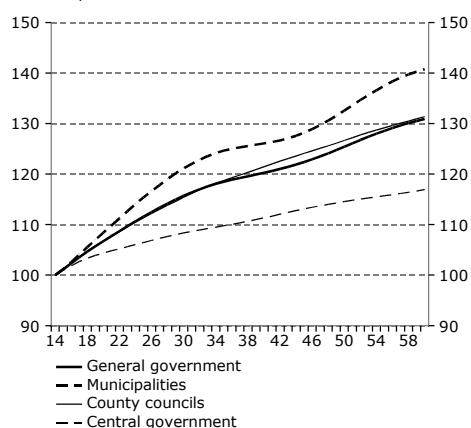
Volume, index 2014=100



Note. The diagram shows the development according to demographically motivated needs. Sources: Statistics Sweden and NIER.

Diagram 53 Resource needs in government sub-sectors

Volume, index 2014=100



Note. The diagram shows the development according to demographically motivated needs. Sources: Statistics Sweden and NIER.

cific individual, such as health care and education. Collective consumption is that which cannot be linked to the individual, such as defence or law and order. Individual consumption accounts for around two-thirds of general government consumption, and collective consumption for the remainder. Individual consumption, in turn, is divided into health care, education and social protection (consisting increasingly of elderly care).²¹

The projection of general government consumption purely on the basis of demographic needs, corresponding to scenario A, results in average volume growth of 0.6 per cent per annum in 2014–2060. This can be compared with the period 1993–2012, when consumption increased by an average of 0.8 per cent per annum. The need for social protection (above all, elderly care) will grow relatively quickly, with a growth rate of 2–2.5 per cent per annum in the 2020s. The need for resources in education will grow more slowly, reflecting the limited growth in the number of children and young people (see Diagram 52). As municipalities account for the bulk of the commitment to elderly care, they also see the greatest increase in the need for resources. During the projection period, the demographic need for resources grows by a total of 40 per cent in the municipal sector, compared with around 30 per cent for the general government sector (see Diagram 53).

TAX INCREASES NEEDED TO MAINTAIN PERSONNEL DENSITY IN WELFARE SERVICES

With an unchanged standard of welfare services (scenario A), general government consumption gradually falls from today's level of 27 per cent of GDP to around 23 per cent in 2060 (see Diagram 54). Combined with unchanged tax rates, this would lead to substantial surpluses in public finances in the long term. This scenario would mean that the standard of welfare services and collective utilities remains unchanged, while the standard of goods and services in the rest of the economy increases gradually over time.

In scenario B, which assumes an unchanged personnel density in the production of welfare services, general government consumption increases instead as a share of GDP to just over 30 per cent in 2060. In the absence of tax increases, this results in a gradual deterioration in public finances, with negative net lend-

²¹ These areas correspond to categories 7, 9 and 10 in the international standard Classification of the Functions of Government (COFOG). *Social protection* denotes public services in the form of children's homes, after-school child care, daytime child care, employability schemes, elderly care and mobility services. Social transfers are not included, as these are not a form of consumption.

ing of around 2 per cent of GDP in the 2030s and 2040s, and 4 per cent in 2060 (see Diagram 55). The S2 indicator, a measure of the sustainability of public finances, shows that tax revenue will need to be increased permanently by 1.5 to 2 per cent of GDP for an unchanged personnel density in the production of welfare services to be compatible with long-term sustainable public finances.

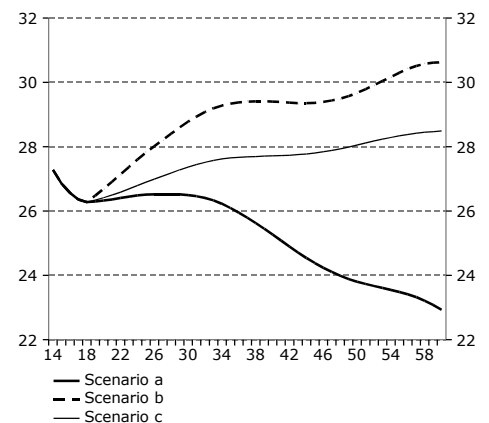
In scenario C, personnel density in the production of welfare services rises in periods when employment grows faster than the population as a whole, but falls in periods with unfavourable demographic developments – in other words, when employment grows more slowly than the population. The standard of welfare services therefore varies over time in this scenario. The public sector commitment is unchanged in the sense that expenditure on welfare services per user is constant relative to GDP per capita.²² This scenario means that public finances will be largely in balance once the economy is at capacity. Net lending reaches around 1 per cent of GDP in 2040 and rises slightly further by 2060. As both income and expenditure in the general government sector are closely linked to GDP in this scenario, public finances evolve in a stable manner.

ELDERLY CARE FUELS LOCAL GOVERNMENT FINANCING REQUIREMENT

The analysis assumes that local government tax rates are constant at current levels. In two of the three scenarios, however, local government expenditure increases relative to GDP, most notably in scenario B with an unchanged personnel density (see Diagrams 56 and 57). To finance this increased expenditure and still meet the balanced budget requirement, it is assumed that the local government sector receives increased central government grants as these requirements arise. An alternative assumption for the funding of local government would instead be for central government grants to grow in line with the local government sector's tax base, and for municipalities and county councils to adjust their tax rates to the financing requirements that emerge. This assumption does not affect the total financing requirement or tax pressure in the general government sector, but means that

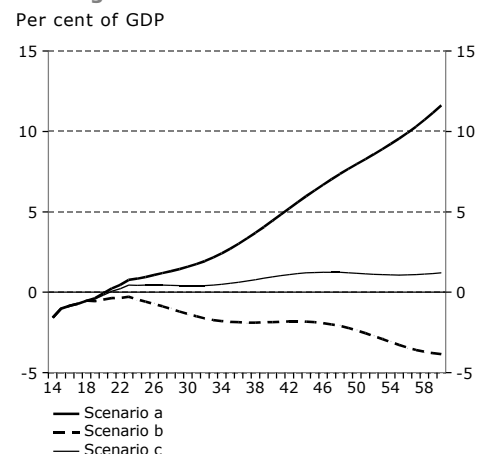
²² As stated above, individual general government consumption expenditure for a person in their 90s averaged almost SEK 200,000 in 2005, equivalent to around 70 per cent of GDP per capita (then SEK 307,000). The assumption in scenario C means that expenditure on welfare services will continue to average 70 per cent of GDP per capita for a person in their 90s, regardless of how GDP per capita moves. For a given level of productivity, GDP per capita will increase when the number of employed rises relative to the overall population, and decrease when it falls.

Diagram 54 Government consumption
Per cent of GDP



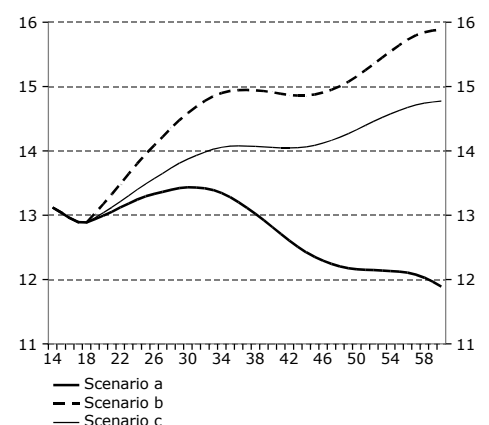
Source: NIER.

Diagram 55 General government net lending
Per cent of GDP



Source: NIER.

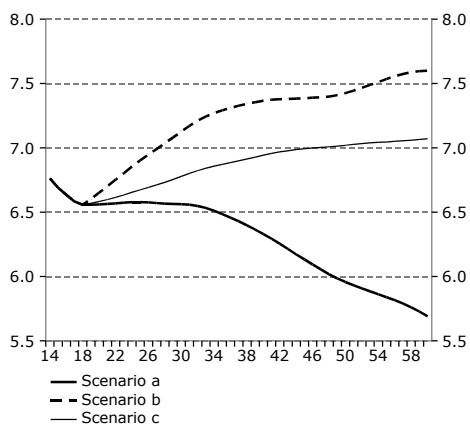
Diagram 56 Local government consumption, municipalities
Per cent of GDP



Source: NIER.

Diagram 57 Local government consumption, county councils

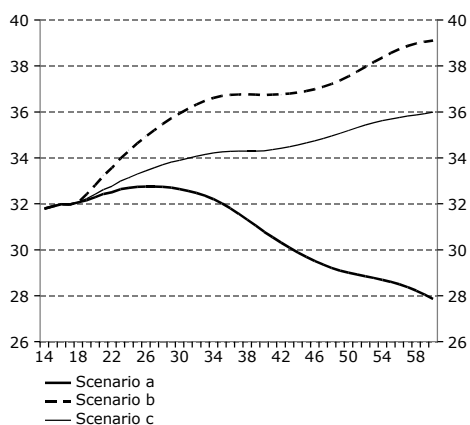
Per cent of GDP



Source: NIER.

Diagram 58 Local government average tax rate

Per cent



Source: NIER.

the local government sector has greater responsibility for financing than under the main assumption.

In scenario B with an unchanged personnel density in the production of welfare services, this approach to central government grants would result in an appreciable need for local government tax increases. From today's average level of just over SEK 32, local government taxation would need to be raised to SEK 36 in 2030 and SEK 39 in 2060 to keep the local government sector's budget in balance (see Diagram 58).

UNCHANGED PERSONNEL DENSITY NOT UNREALISTIC

All in all, the study shows that there are no immediate threats to the long-term sustainability of Sweden's public finances given an unchanged public sector commitment and unchanged tax rates. Some tax increases will, however, be needed to maintain an unchanged personnel density in the production of welfare services. These tax increases are slightly smaller than those needed to meet the surplus target for general government net lending in the next few years while also maintaining an unchanged public sector commitment in the near term (see the section "Fiscal policy" in the chapter "Macroeconomic Developments and Economic Policy 2014–2018").

The study is based on an assumption that the relative cost of welfare services for different groups is constant over time. It also assumes that both the employment rate in different parts of the population and the retirement age are unchanged at current levels (adjusted for purely cyclical effects). A gradual increase in the health of the elderly, for example, might mean that today's need for resources for elderly care and health overestimates future needs. At the same time, increased life expectancy could lead to retirement ages being pushed back gradually, resulting in a more favourable economic dependency ratio than indicated by the projections based on current behaviour. Such effects could reduce the need for tax increases. If, on the other hand, the long-term trajectory of employment is weaker than assumed in the study, the need for tax increases to safeguard future welfare may be underestimated.