

Irma Rosenberg: Monetary policy and the conditions for growth

Speech by Ms Irma Rosenberg, Deputy Governor of the Sveriges Riksbank, at an economics conference, Klippan (in the south of Sweden), 1 November 2004.

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Let me begin by thanking you for the invitation to come here and speak.

The subject for this year's conference is growth. This is a subject close to the hearts of economists and one that often crops up in debate. What factors determine economic growth in the long term, and what can be done to increase it? I intend to approach this question from a central bank perspective. Is it possible, for instance, for the Riksbank to use monetary policy to raise the level of long-term growth? Are there means of affecting growth? Long-term, or potential, growth is a many-faceted concept and I intend to begin by speaking about the prevailing theory with regard to links to monetary policy. I shall then go into more detail on the underlying determining factors behind the long-term growth rate and briefly describe trends in recent years. I shall also speculate on possible future developments and what can be done to improve long-term growth prospects.

Long-term growth and monetary policy

Let us start with Figure 1, where the blue line shows developments in real GDP in Sweden during the period 1950 to 2003. One can see that there has been a clear trend increase during these years. In 1950, the total output value was just over SEK 500 billion, measured at current prices, and in 2003 it was around SEK 2,300 billion. However, one can also see that this has not been an even development. GDP growth has been more rapid during certain periods than others and during some episodes, such as the 1990s crisis, the level of output even fell. But seen over a longer period, the increase in GDP has been relatively stable. On average, output rose by 2.7 per cent during these years.

The orange line in the figure shows how a measure of trend, or potential, output has developed over the same period. Potential output in principle reflects the capacity limits put on production of goods and services at a given point in time. *One* type of limit is the access to resources for production - factors of production - in the economy. This normally covers two main factors: labour force and physical capital, i.e. factories, machinery, etc. Another limitation is how productive these factors of production are, that is to say, how much that can be produced in, for example, one hour of work or use of the machinery.

It is important to emphasise that potential output is not an estimate of a ceiling for production. It is therefore *not* a measure of the level of output that would apply if the entire labour force were employed and all physical capital was used to the maximum. By potential output and potential growth we mean instead the output and growth that is possible without serious imbalances arising in the economy; the level of output at which supply and demand correspond and actual and expected inflation are in line with the central bank's inflation target (assuming that there is one). The potential output level is not constant over time; it usually shows a growth trend, which is illustrated in Figure 1. This is mainly because technological developments mean that higher output can be achieved with the same amount of factors of production. Another reason could be long-term changes in the factors of production. The change in potential output from year to year is equal to the potential growth of the economy, which thus is the *growth rate* that is sustainable in the long term. Figure 1 shows the potential output level according to a simple statistical method where the trend, and thereby also the potential growth rate, is allowed to vary over time.

The difference between actual and potential output is known as the output gap, and this reflects the cyclical variations in the economy. A negative output gap, that is to say, when actual output is lower than potential output, is usually connected with a recession. The demand pressure for goods, services and the factors of production is then small and there are ample unutilised resources in the economy. Price and wage increases are small and inflation is usually below the central bank's target level. When there is a positive output gap, the circumstances are normally the reverse. Then, actual output is higher than potential output, resources are strained, unemployment is lower than normal and inflation is higher than the target level. When the economy is in balance, the output gap is closed, that is to say, equal to zero.

In practice, both actual and potential output is affected by various shocks which mean that the output gap is rarely zero. If there is a situation with a negative output to begin with, the economy can grow more rapidly than its potential output rate for a short period. The fact is that this is necessary in such a situation in order to close the gap and bring the economy back into balance. However, problems arise if the economy grows at a more rapid rate than that allowed by potential growth over a longer period of time. Then production resources become strained, bottlenecks arise and tendencies appear towards overheating. In this way, potential growth for the economy can be likened to a recommended speed from which it is important not to deviate for too long a period.

It is in this short-term perspective that monetary policy can play a role in influencing growth. As the output gap reflects the demand pressure in the economy and the demand pressure in turn affects inflation, monetary policy is largely about choosing an interest rate that will make the output gap as small as possible. If actual and potential output coincide so that the output gap is closed, inflation is in line with the Riksbank's target of 2 per cent, assuming that there is confidence in the policy conducted. This means at the same time that the size of potential growth affects the scope for conducting monetary policy. The higher the long-term sustainable growth rate, the higher the actual growth rate can be without resource utilisation becoming so high that inflation takes off and the Riksbank is forced to intervene to subdue demand.

This reasoning is of necessity somewhat simplified. In actual fact, temporary shocks to inflation can occur that lead to inflation not being on target, despite the fact that actual and potential output are at the same level. However, in this case, inflation is in practice probably close to the target, so a more realistic description is therefore that the target on average is met when the output gap is closed. Moreover, monetary policy affects demand with some lag. Consequently, the Riksbank adjusts the interest rate in accordance with forecasts of inflation a couple of years ahead. During this period shocks can of course occur in the economy that couldn't be foreseen at the time of the forecast. We therefore attempt to avoid excessive fluctuations in the economy by gradually bringing inflation back towards the target.

Thus, in the short term, the Riksbank can affect output and employment by adjusting the interest rate, thereby stimulating or cooling down economic activity. But in the long run, attempts, for example, to make the economy grow faster than its long-term sustainable rate would only result in higher inflation without any change in output or employment. As I mentioned, the economy's long-term capacity is limited by the size of the factors of production and their productivity. These factors cannot be governed by monetary policy. By changing the interest rate, the Riksbank can affect actual output growth in the short term but not the potential, long-term growth rate. Monetary policy can possibly indirectly lay the foundation for good growth in the long term by ensuring that our payment and price-setting system functions in an efficient and confidence-inspiring manner.

What determines long-term growth?

As you understand from what I have said this far, it is important for the Riksbank to make a good assessment of the Swedish economy's potential growth capacity in order to conduct successful monetary policy. We therefore return to this issue fairly often in, for instance, our Inflation Reports. One difficulty is that potential output and potential growth cannot be observed directly in the same way as actual GDP and employment. Instead, the measure must be estimated using statistical methods and there are a number of these, each with its own advantages and disadvantages. In other words, there are several different ways of drawing the orange line in Figure 1, and the different methods have demonstrated fairly differing results. The Riksbank therefore uses several different methods of calculating the output gap. We also supplement our analysis with a number of other indicators of resource utilisation in the economy.

As I mentioned earlier, long-term sustainable growth in the economy is determined partly by technological developments in society. This means that production per hour worked shows an increasing trend over time and thus is one of the more important contributions to long-term growth. But long-term changes in the factors of production can also affect potential growth. If we measure the labour force's contribution to production in the number of hours worked, one can express it simply as our long-term growth potential depending on how much we work and how productive we are. However, it is important to point out that it is the more long-term developments in productivity growth and the change in labour contributions that are significant in this context.

I mentioned earlier that different methods of estimating potential growth can give quite different results. One of the reasons is that it is difficult to distinguish the more long-term sustainable trend from temporary developments. It is of course no easy task to determine whether a change is permanent when we receive new statistics on economic developments. However, it appears that this can even be difficult to determine afterwards, when studying the historical trend. As I intend to illustrate, this applies to both productivity and labour supply. So, allow me to proceed to look more closely at the determining factors behind long-term growth and see how they have developed historically and what can be said about future developments. I shall begin with labour productivity.

Productivity growth

Figure 2 shows the annual change in labour productivity, measured as GDP per hour worked, together with an estimate of the long-term trend. At the bottom of the figure is the average rate of change during different periods of time. We can see that productivity growth is nearly always positive and varies considerably from year to year, but also that it has had a tendency to increase over time, particularly during the 1990s. This is a clear difference compared with the previous decade. On average, the increase in productivity was 1.2 per cent during the 1980s. During the 1990s, there was a rapid increase and productivity growth reached an average level of above 2 per cent. This average subsequently remained at that level for the remainder of the period.

What is the reason for this more favourable development? We do not have any certain answers, but there are still some factors that have most probably contributed to this development. To begin with, we must remember that the Swedish economy underwent a severe crisis at the beginning of the 1990s and this probably contributed to raising productivity growth during the first half of the decade. Many companies went out of business during the crisis; companies with relatively low profitability. Although this led to an increase in the productivity growth measured during a transitional period, this was at substantial cost to those who lost their jobs and the economy as a whole, as a large part of the economy's available resources were not utilised.

During and directly after the crisis there were also a number of structural changes in the economy that are likely to have affected developments. Fiscal policy was tightened, with an expenditure ceiling and surplus target, while monetary policy was targeted at achieving a low, stable inflation rate. Such a stabilisation of the macroeconomy means that uncertainty about issues such as future tax rates and price developments decrease, which in turn makes it easier for households and firms to plan. Comparative studies of different countries have shown that this can have longer-term effects, partly through a rise in productivity. Furthermore, several markets were opened to both domestic and international competition through deregulation. Greater competition increases the pressure on profitability, which raises motivation for making production and organisations more efficient, for instance with the aid of more modern technology.

There were also other types of structural changes in the Swedish economy during the 1990s. Up to the beginning of the 1990s, the number of people employed in the public sector increased, with a corresponding decline in the private sector. After the crisis there was a turnaround, and the private sector's share began to increase again. A shift from the public sector to the private sector most probably entails an increase in productivity throughout the economy. One complication in this context is that, for technical reasons, it is difficult to measure productivity growth in the public sector in the National Accounts. The studies that have been carried out indicate that it is lower in the public sector than in the private sector.¹ So far, the statistics are quite simply based on the assumption that there is no productivity increase in the public sector at all.

Another important change in the significance of different sectors in the economy was the rapid expansion in the information and communications technology sector, particularly during the second half of the 1990s. There has been lively discussion of the actual significance of information technology for productivity growth in this period. What we can see, is that a large part of the productivity growth during the latter part of the 1990s originated from the sectors producing information and telecom products. Compared with this *IT-producing* sector, developments in the *IT-using* sectors was not at all as impressive, despite large investments in IT during the period.

¹ SOU 2004:19, Long-term Planning Commission Report 2003/04, Ministry of Finance, Fritzes, Stockholm.

What does all this mean for future long-term productivity growth? The very high growth figures for productivity during the latter part of the 1990s reflected both the macroeconomic stabilisation, an expansion in the private sector relative to the public sector, and in particular the IT expansion. It is unlikely that the development will continue in the same way in the future. However, we know that productivity growth has been surprisingly high in recent years. Many economists are busy working on the question of which factors lie behind this development. It is clear that, unlike the 1990s, it is not a question of high productivity growth in the IT sector and major investment in IT. One theory that has been put forward is that it may perhaps be explained by delayed effects in other sectors of earlier IT investment; that it has quite simply taken time for companies to adjust and to take advantage of the new technology.

It is thus difficult to say anything about the durability of the most recent development. However, there are many indications that the long-term increase in productivity now is higher than it was during the 1980s. The widespread structural changes that took place during the 1990s are also an indication of this. Nor should it be forgotten, that the labour force is better educated today than it was ten years ago, particularly with regard to the percentage of those with a university education. There are studies indicating that the improvement in qualifications has also contributed to the growth in productivity.

The possibility to improve productivity using economic policy, in addition to the basic contribution made by price stability and healthy government finances, is probably fairly small, as it is difficult, for instance, to govern how and when technological breakthroughs will occur. On the other hand, one can try to affect the conditions for good productivity growth, for instance by ensuring that competitive pressure is maintained in the economy and by conducting a good research and education policy.

Labour supply growth

Let us now leave productivity growth and move on to the other important component, the labour supply. Figure 3 shows the annual growth in the number of hours worked throughout the economy from 1981 onwards. As before, I have included an estimate of the long-term development. As can be seen, it is only weakly positive for the period as a whole. During the 1980s, the labour market was strong and we can see that the number of hours worked essentially grew during the whole period, up to the crisis at the beginning of the 1990s. The fact that the crisis had a dramatic effect on the labour input in the economy is also clear. On average, developments then improved during the second half of the 1990s, but the positive trend has been broken in recent years. What lies behind this and what conclusions can be drawn with regard to the future development of the labour supply?

One way of examining what has driven developments is to divide up the number of hours worked into different sub-components. The number of hours worked in the economy is determined partly by how many people actually work and partly by how many hours each person works. The number of people in work is determined first and foremost by how large a percentage of the population are of working age, defined here as 20-64 years of age. For various reasons, not all of these people are available for work, so the labour supply is also affected by the percentage of people of working age that are included in the labour force. Of the people in the labour force, some are unemployed and some are employed. Finally, owing to various types of absence from work, only a certain percentage of the employed actually contribute hours worked in production. If one totals the changes in all of these components and also takes into account how much each works in a given year, one obtains the change in the number of hours worked that year.

By studying the relative development of the components over time, it is possible to see how the significance of different factors has varied, and also to speculate about the long-term trend in the future labour supply. In this context there are many interesting relationships to observe. Let me point out some aspects that illustrate some of the problems the Swedish economy is currently facing and will be struggling with in future.

Figure 4 shows the population growth and the change in the number of people of working age. The part of the curves shown as a broken line represents Statistics Sweden's forecasts. As you can see, developments have varied quite a lot during this period, and unlike what many people may believe, the demographical development during the 1990s was relatively favourable from the perspective of the labour force. The growth in the working age population has been higher than the total population growth, so the percentage of people of working age has increased during the period. As can be seen, this development will deteriorate dramatically towards the end of this decade. It is quite simply an illustration of the problem of having an ageing population, which means that the dependency burden for those of working age will increase dramatically.

Another important observation refers to the percentage of the population of working age who are included in the labour force and the percentage of people in the labour force who are employed. Figure 5 shows that both the percentage of the labour force and the percentage of those employed vary according to the economic cycle. When economic activity slows down, and it is difficult to get a job, there is a decline not only in employment but also in the number of people who say they are actively seeking work.

On the other hand, economic activity cannot explain why the *level* of both the percentage of the labour force and the degree of employment appear to have fallen after the 1990s crisis. The degree of employment fell considerably in connection with the crisis years and has only partially recovered since then. Moreover, since the 1990s crisis, many of those who lost their jobs have not returned to the labour market at all. This is ominous, given that economic growth in the past decade has nevertheless been relatively high in a historical perspective. To some extent, the drop in the labour force percentage can be explained by education factors. In connection with the 1990s crisis there was a significant decline in labour force participation among younger age groups, which was connected to tougher competition for jobs and many young people choosing to improve their qualifications instead of entering the labour market. Since then, there have been changes aimed at raising the level of education in society in general, for instance by lengthening upper-secondary school programmes and expanding university colleges. These education initiatives are highly justifiable in themselves, but they also entail a lower participation in the labour force and thereby an increased dependency burden for the active part of the population.

Although some of the decline in labour force participation can be attributed to education factors, this is not the full explanation. Calculations for 2003 show that close to 30 per cent of the group remaining outside the labour force were studying. The others remained outside the labour force for other reasons, with early retirement for health reasons, now known as sickness benefit, as one of the most common causes. The number of newly-granted early retirements rose sharply from 1997 onwards. In recent years, this increase has been particularly large with regard to people under the age of 50.² The percentage of those participating in the labour force has fallen from around 88 per cent at its highest point in 1990 to about 82 per cent today. The fact that such a high percentage of people of working age are outside the labour force will limit growth in the future and will contribute to further exacerbating the problem of an ageing population.

Figure 6 shows both the percentage of employed actually working and the mean working time for people in work.³ As you can see from the Figure, developments in these factors also vary according to the economic cycle. During the boom at the end of the 1980s, the number of hours per person rocketed while the percentage of people in work declined, partly due to a growth in sick leave. Many studies have indicated that there is a link between total absence due to sickness and the situation in the labour market. When the situation in the labour market improves, absence due to sickness increases, and vice versa. However, this relationship does not seem to apply to long-term sick leave, which is the type of sick leave that has increased most in recent years. How to resolve this is another subject much debated at present.

In recent years, both the percentage of people at work and the hours worked per person have fallen and thus provided a negative contribution to the change in the total number of hours worked in the economy. The fact that mean working time has fallen is partly due to a decline in overtime and normal working hours. The reason behind this development is not entirely clear. Cyclical effects as well as the effects of taxes and benefits are possible explanations. Seen in a longer-term perspective ahead, it is likely that households will tend to want to reduce the mean working time per person so as to use some of their increased prosperity in the form of more leisure time.

So what conclusions can we draw regarding developments in the total number of hours worked in the economy on the basis of this review of the various components? Unfortunately, the prospects are not so bright if no measures are taken to improve the situation. In a long-term perspective, the demographic development is very unfavourable because the percentage of the population of working age is decreasing. The problems will be exacerbated if the rise in early retirement and long-term sick

² The Swedish National Social Insurance Board, "Vem önskar lämna arbetslivet med förtidspension?" (Who wants to leave work on a sick pension?), RVF Analyserar 2004:7, and Statistics Sweden, *Välfärd* (Welfare), No. 1 2003.

³ Mean working time is calculated here as the number of hours worked according to the National Accounts divided by the number of people in work according to Statistics Sweden's labour force survey.

leave together cannot be broken. Labour force participation and the degree of employment seem to have attained a lower level following the 1990s crisis. Unemployment also varies considerably between occupational categories and different parts of the country. This indicates that there are structural problems and that the functioning of the labour market and the social insurance system must be improved.

The conclusion that can be drawn is that the weak growth in employment is not mainly due to low demand in the economy - although economic activity has not been favourable recently. There is thus no point in seeking the answer to these problems in stabilisation policy. It is structural policy measures that are needed to improve the functioning of the labour market. There are a number of projects there that could contribute to raising the labour supply, at least in the medium term. As I understand it, these include both general measures to increase the labour supply among all groups in the economy and specific measures to increase the supply among certain groups where there may be a greater potential for increases.

What can be done to increase the labour supply?

Economic incentives can affect individuals' participation in the work force, but economic theory alone cannot always determine which effects they will have. Take the example of reduced marginal tax. While reducing this tax will increase real wages, it does not automatically mean that people want to work more. This is because the wage increase has two effects. Firstly, it makes work more profitable relative to leisure and thus contributes to wanting to exchange leisure for work. On the other hand, an increased real wage means that one receives a larger income for the same amount of work and this means one can afford more leisure. There are thus two counteracting effects. Purely theoretically, it is impossible to say what the net effect will be; empirical research must attempt to answer this question.

Many empirical studies have been made in this field, for instance, at the time of the large tax reform in the beginning of the 1990s. The result of the studies is not unequivocal, but a common conclusion appears to be that the labour supply calculated in hours increased after the tax reform, although the size of the effect is much debated. Comparing different groups, the effect seems to have been relatively larger among women and relatively smaller among those with a low income and/or that work part-time. One complication with this kind of study is that the labour provided by many people is probably determined at household level rather than individual level. The labour force participation for an individual may also be affected by changes in their husband's/wife's/partner's income.

Recently, the focus has moved partly away from pure studies of the effects of the income tax system to the combined effects on the labour supply of taxes and various benefit and social insurance systems. The focus has often been on people that work to a smaller extent, that are on sick leave or that are outside the labour force. We know from economic research that different types of compensation and benefit affect the individual's reservation wage, that is to say, the wage level that primarily influences the individual's decision to participate in the work force.

The reservation wage varies from person to person and if the wage level offered on the market is lower than the reservation wage, the person chooses not to work. One can say that the individual values his or her time more highly than the market does. The relationship between the wages for work offered on the market and the individual reservation wage is thus a decisive factor in the decision on whether or not to work. It is easy to understand that the reservation wage will be affected by taxes, compensation levels in the unemployment and social insurance systems, rules for early retirement, etc. Surveys of individuals' choices with regard to labour supply, which take into account both taxes and various types of benefit, indicate that the forming of the benefit system may have a greater effect on labour supply than changes in the taxation system.⁴

Is it possible to say anything about the size of the present driving forces for increasing the labour supply? The most recent report of the Long-term Planning Commission and the National Institute of Economic Research's most recent report on the Swedish economy both contain attempts to calculate the economic driving forces that can make individuals change their decisions regarding labour force participation. They are studying the driving forces that make people go between unemployment or sick

⁴ Krueger, A. and Meyer, B. "Labour supply effects of social insurance", NBER Working Paper Series 9014, National Bureau of Economic Research, Cambridge, MA, 2002.

leave and work, as well as the driving forces that make people work slightly longer hours. Economic driving forces refers in principle to the effect on disposable income entailed in the change in labour supply, if one takes into account the effect of different types of tax, benefit and charge, in addition to direct wage effects. The starting point is that the driving forces are lower the smaller the difference in income is from changing status, or alternatively the less income one can keep after the increase in the labour supply.

The Long-term Planning Commission has made calculations that indicate that the economic driving forces for returning to work are generally low with regard to unemployment and usually even lower with regard to sick leave. These calculations show that almost four out of ten wage-earners retain 90 per cent or more of their income when they go on sick leave. Approximately one out of ten retains less than 70 per cent. The survey also shows that the driving forces for working slightly more have increased since the 1990s, but also that they are relatively low among the lower income groups.⁵ While a high level of compensation means increased security for the individual in the case of loss of income, if the negative effects on labour supply are large, they will also entail substantial costs to society as a whole.

It is important to remember that what I have taken up here is the effects on the labour market's supply side. But the total effect on the labour market is determined by the interaction between the supply side and the demand side. If one wishes to affect the functioning of the labour market more radically, it is probably necessary to implement structural policy measures that will influence both sides. Economic driving forces are certainly not the only method of influencing the labour supply. Nor is it useful to focus solely on the size of the compensation levels. The challenge will be to ensure that the various insurance and benefit systems provide the necessary basic safety net but still maintain a strong impetus for people to begin work again. It will probably be necessary to make both general changes in insurance and benefit systems and selective measures to raise labour force participation in groups where the potential to increase the work input is considered relatively large. Examples of these groups are younger people, older people and people born abroad.

Conclusion

Let me finally return to my starting point and the discussion of long-term growth. I have mainly concentrated on the relationship between potential growth and monetary policy. However, we must not forget that long-term growth has significance for all parts of the economy and one of the most important goals for economic policy in general is to promote a high level of long-term growth. Growth is not the same thing as increased wealth, but growth creates a foundation for increased wealth. It creates greater scope not just for households' private consumption, but also for financing, for instance, education systems of high quality and a good level of care and welfare and provides better opportunities to achieve other political goals.

Potential growth sets the framework for monetary policy. Simplified, one can say that the Riksbank's task is to keep actual output as close to potential output as possible. The higher the long-term sustainable growth rate, the higher the actual growth rate can be without resource utilisation becoming so high that inflation takes off and the Riksbank is forced to intervene to subdue demand. However, the Riksbank cannot do much to affect long-term developments in growth. This is governed by other factors, particularly productivity development and labour supply.

Productivity growth improved substantially from the mid-1990s and has since remained at a much higher level than during the 1980s. It is probable that several factors lie behind this development, including macroeconomic stabilisation, increased openness towards the outside world and tougher competition. Up to the beginning of the 21st century, the increase in productivity growth also reflected the expansion of the IT sector and investments made in information technology. The question is now to what extent this development is permanent. Our assessment in the October *Inflation Report* is that economic activity has to some extent had a positive effect on recent developments and that the rate of increase in productivity will therefore fall over the coming years - although probably to an average level above that of the 1980s.

⁵ SOU 2004:2, *Vem tjänar på att arbeta?* (Who benefits from working?), Long-term Planning Commission Report 2003/04, appendix 14. B. Eklind et al., Fritzes, Stockholm and the National Institute of Economic Research, *The Swedish Economy*, August 2004.

The number of hours worked has also developed relatively favourably since the mid-1990s. Growth has been good and this has contributed to maintaining demand for working hours. At the same time, demographic developments have been relatively favourable and there have been ample unutilised resources in the economy following the crisis of the 1990s. However, when it comes to the labour supply, there is less reason to be optimistic about future developments. Developments in working hours have been held back during recent periods for structural reasons. The demographic situation, with a declining percentage of the population of working age, will deteriorate significantly in the long term, particularly after 2010. In addition, working hours per person may instead tend to decline in the long run when greater prosperity is taken advantage of to increase leisure time.

The assessment in the *October Inflation Report* is that employment, labour force participation and mean working time will rise during the economic upturn forecast for the coming years and will contribute to an increase in the number of hours worked of approximately 1 per cent a year during the period. In a longer perspective, it is more realistic to assume that the labour supply will not make any contribution to growth. The simulations in, for instance, the Long-term Planning Commission's most recent report, indicate that the number of hours worked on average will not show any significant change. However, the simulations show that the situation could be improved significantly, at least in the short term, if measures were taken to increase the labour supply.

The Riksbank has chosen not to specify any exact figure for potential growth, but instead has decided to state a range of between 2 and 2.5 per cent. We have not considered it possible to be more precise than this, given the difficulties in measuring growth, etc. If we look ahead, it is reasonable to believe that growth will in future be somewhere within this interval, although where depends on how far ahead one looks. Over the coming years, growth will probably be closer to 2.5 per cent than to 2 per cent. In the longer perspective, when the demographic effects on the labour supply are greater, it is reasonable to believe in a figure closer to 2 per cent than 2.5 per cent. How much closer depends to a great extent on how much the labour supply can be stimulated during the period.

Thank you!

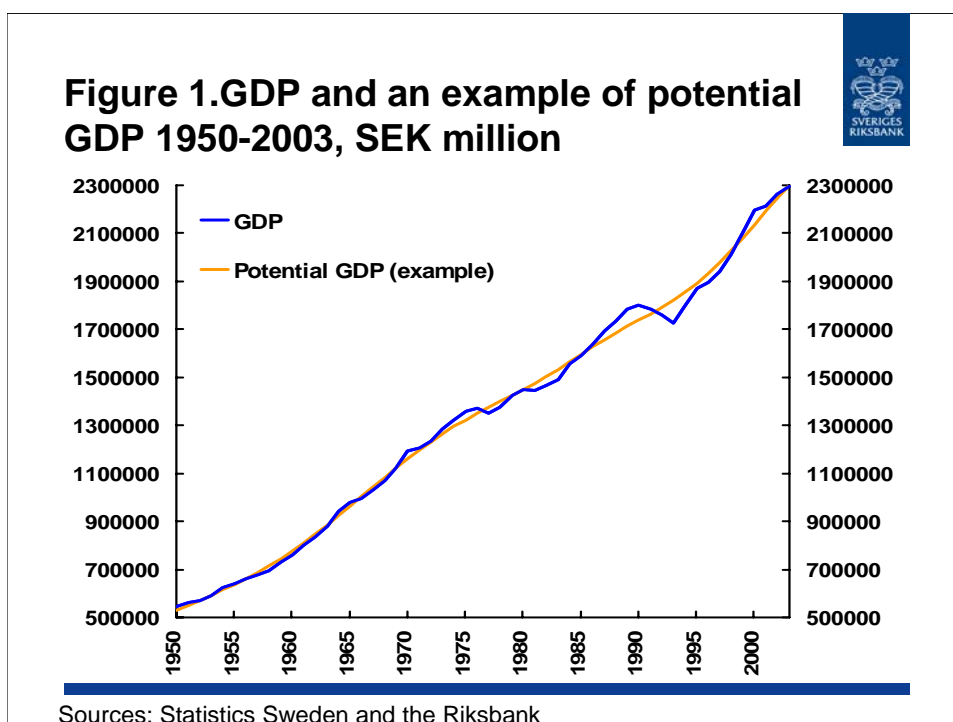
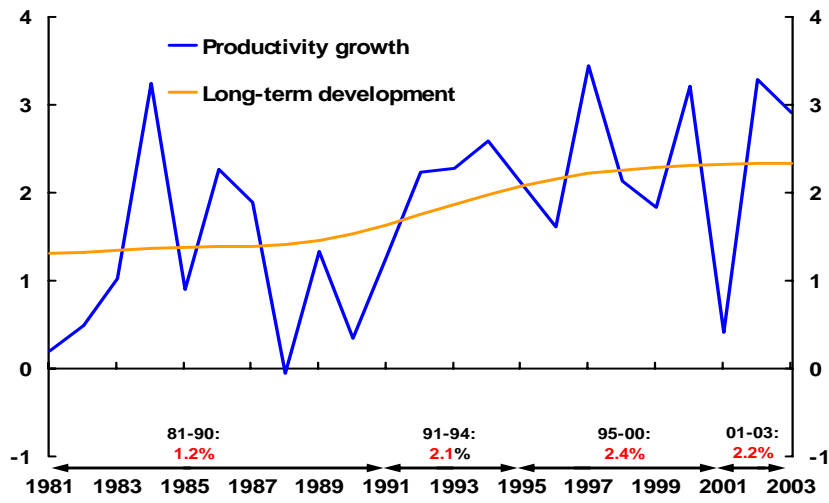
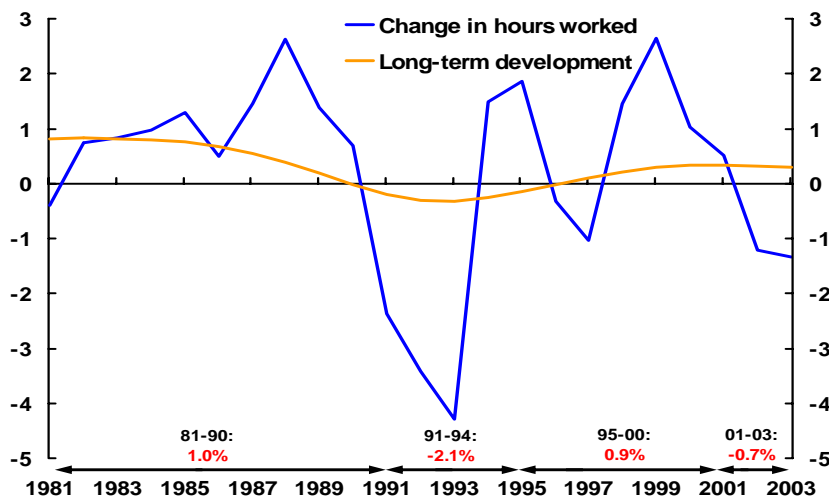


Figure 2. Productivity growth (GDP per hour worked) 1981-2003, per cent



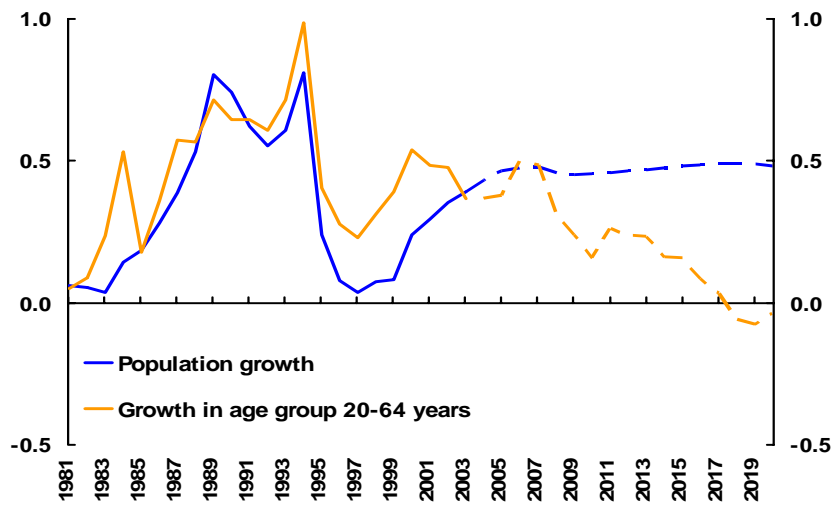
Sources: Statistics Sweden and the Riksbank

Figure 3. Change in number of hours worked 1981-2003, per cent



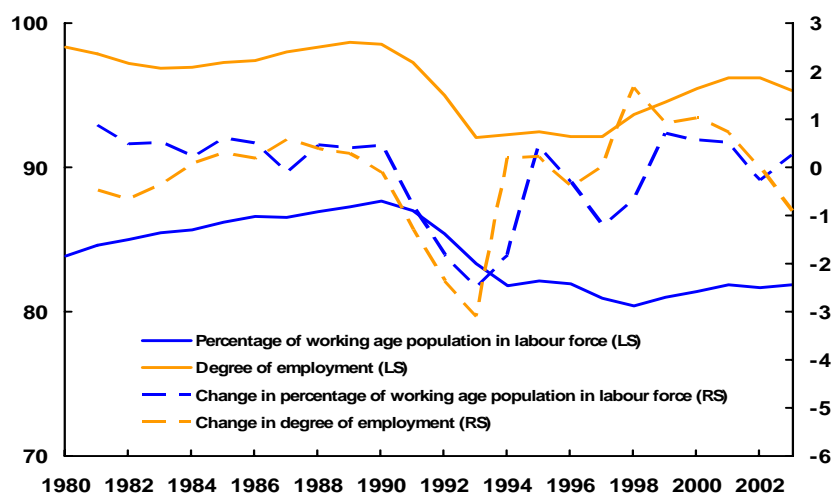
Sources: Statistics Sweden and the Riksbank

Figure 4. Population growth and change in age group 20-64 years in the population 1981-2020 (forecast 2004-2020), per cent



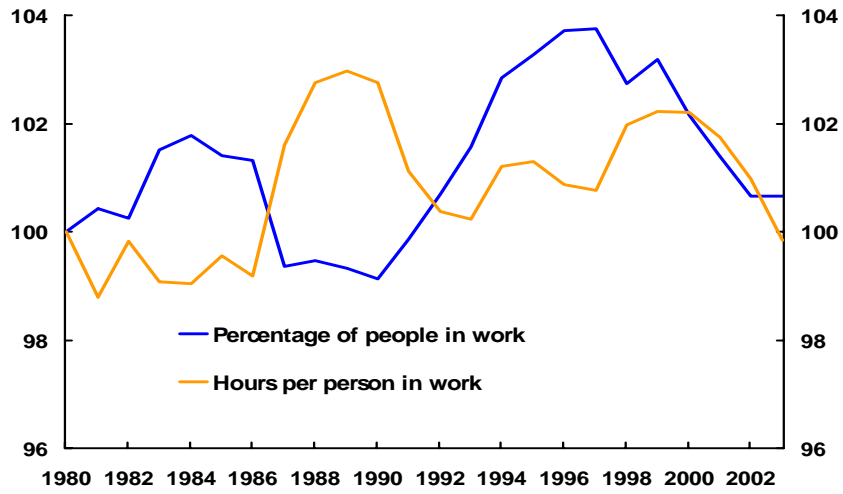
Source: Statistics Sweden

Figure 5. Percentage of working age population in the labour force and degree of employment, level (left scale) and change (right scale) 1980-2003, per cent



Sources: Statistics Sweden and the Riksbank

Figure 6. Percentage of people in work and the number of hours worked per person in work 1980-2003, index (1980=100)



Sources: Statistics Sweden and the Riksbank