

MUTUAL LEARNING PROGRAMME:
PEER COUNTRY COMMENTS PAPER - SWEDEN

Trends and Forecasts from Sweden:

How does Sweden do its forecasts for the educational system and the labour market? What are the limits of these forecasts, and what can be done to close the coming labour gap in healthcare and social services?

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1 LABOUR MARKET SITUATION IN THE PEER COUNTRY

This paper has been prepared for a Peer Review within the framework of the Mutual Learning Programme. It provides information on Slovenia's comments on the policy example of the Host Country for the Peer Review. For information on the policy example, please refer to the Host Country Discussion Paper.

In 2030, Sweden's population is expected to be slightly more than 10 million. The age group growing the fastest by far is that for persons aged 65 and above. This group amounted to 1.6 million persons in 2007 and is expected to exceed 2.3 million in 2030. According to the most recent national forecast, the number of gainfully employed persons aged 16–74 will increase by nearly 250 000 by the year 2030. Foreign born persons are expected to account for the entire increase, as well as the population increase of those aged 16–74. The level of education in Sweden continues to rise. Today 35 percent of the population aged 20–64 has some form of post-secondary education. This figure is estimated to rise to 44 percent in 2030. The number of those with post secondary education is predicted to increase sharply up until 2030. The demand for persons with this education is not expected to rise as sharply. The opposite applies for persons with vocational upper secondary education; that is to say, there is a risk of a shortage of persons with this type of education.

A considerable shortage is expected for the healthcare and nursing fields. Supply is only expected to increase by 30 000 up to the year 2030 while demand will increase by around 190 000. The demand will mainly be for people with upper secondary education. Retirement among healthcare workers will be considerable, and the number of graduates from healthcare programmes will not be sufficient to fill the gap when people retire.

2 ASSESSMENT OF THE POLICY MEASURE

Sweden's long-term forecasts of education and the labour market trends

The Forecast Institute at Statistics Sweden works with analysis and forecasts in the areas of demography, education and employment. The main task of the Forecast Institute is to produce long-term forecasts of the supply of and demand for persons with a particular educational background. The Ministry of Education uses the forecasts as one of many inputs in deciding whether to recommend an increase or decrease in the number of educational places funded. Other inputs include the opinions of professional organisations, data from the Agency for Higher Education, opinions from private employers and employer organisations, and other economic forecasts.

Long-term forecasts based on quantitative data are needed because the education of a person takes many years. It is not enough to know whether there is a shortage today. Increasing the number of educational places will provide new skills to the labour market after a minimum of three years, and for some educational qualifications much longer. The number of applications to an educational programme is also a consideration. A large ratio of applicants to admission possibilities means that the number of places on this programme could be increased. Whether it should be or not depends on judgments about whether the labour market can absorb the newly-educated in a few years from now. Some educational programmes like arts and theatre always have multiple applicants for each available place. But since the labour market is not growing for these jobs, the number of funded education places is not usually increased.

Technical education such as in engineering and the sciences, usually have more spaces than there are qualified applicants. As a result, while it is not politically difficult to expand

the educational programmes in technical subjects as increasing demand is predicted, the challenge is instead to increase demand.

Forecast frequency

The Forecast is published as a report entitled *Trends and Forecasts*, whose last release was in January 2009. *Trends and Forecasts* has been published approximately every third year since 1972. The report describes the development in the areas of population, education and employment, and long-term prospects. Forecasts of supply and demand for labour are related to the whole labour market and all forms of regular education. Some 50 educational groups are studied in more detail. The next report will be published at the end of 2011.

The purpose of the calculations is to show in what education groups there may in the future be imbalances between supply and demand for skilled labour, if the development continues along the current lines. So this is not about trying to predict the future, but rather to highlight areas that may need policy changes in order to influence the future.

The calculations can be characterised as a mix of *consequence and needs analyses*. The total number of employed persons in the calculation is a consequence of assumptions about participation in employment by different groups of the population (by age, sex and born in Sweden or abroad). Employed persons are broken down into different industry sectors in such a way that the requirement of a balanced economic development is met by using certain assumptions about world trade and product development. Finally, assumptions are made about occupational development by industry sector and about the development of educational requirements for each occupation.

The actual calculations thus do not take into account the effects of imbalances arising from the educational choices people make, central governmental and municipal steering of educational resources and the demand of the labour market for different categories of education.

The forecasts point to need for policy

A considerable difference between calculated future supply and demand thus means that the requirement for adaptation is significant, and *not necessarily that a certain* number of persons will be unemployed or that a certain number of job vacancies will not be filled. In much of the labour market, several different types of education can be acceptable, thus facilitating adaptation while increasing competition at the same time.

Consequences of a new dimensioning of an education or changes in preferences of those who choose the education will only be seen in the long run. Sudden imbalances can only be corrected by a change in behaviour of jobseekers and employers. Relatively few areas of the labour market have strict requirements for a specific formal education. The healthcare sector is one such area. Another example is the legal system and its services. To work as a teacher there are requirements for completed teacher training, even if the requirement for the “right” education is not as strict as within the healthcare sector and the legal system. In practice there are naturally significant educational requirements in many other areas, but on the whole there is competition among persons with different kinds of education.

Estimates of the future supply of different education groups are based on data from Statistics Sweden's register of the education level of the population in 2007. To these data a forecast of study completion and immigration are added. Total supply is reduced by emigration and death. The availability of labour is calculated by multiplying the total supply by so-called participation rates of each education group (by sex and age).

The estimated supply of labour is then compared with estimated demand for different educational groups. Demand forecasts are based on a population and employment forecast, together with future economic outlook. This provides data on the demand for labour in different industries. Assumptions are made about occupational structure change

by economic activity, and how skills requirements will be developed in various occupations. There is of course, considerable uncertainty in all long-term forecasts of demand.

The latest forecast results

The number of gainfully employed persons aged 16–74 will increase by nearly 250 000 by the year 2030. Foreign-born persons are expected to account for the entire increase in this age group, as well as for the entire population of those aged 16–74. In the forecast, it is assumed that the percentage of gainfully employed – the job participation rate – will rise radically among foreign born women and men and certain groups among Swedish born persons. Despite this, the average job participation rate will fall. This is because the participation rates rises only for foreign born persons and older persons; both these groups have a lower job participation rate than average for people aged 16–74.

The dependency ratio has been stable at a relatively low level during the most recent fifty years. In 2006 it was at its lowest. The dependency ratio is calculated by dividing the total population with the number of persons aged 20–64. Up until 2030, there will be a dramatic shift of the age structure in an unfavourable direction, seen from the perspective of dependency. In simple terms, this means that everything that each actively working person produces must be sufficient for more and more people.

How *Trends and Forecasts* is used

The results of *Trends and Forecasts* are used by the Swedish government in the budget process. The forecasts are used as background information in discussions on increasing or decreasing the number of educational places that the government finances. In particular, the forecasts are used in this process by the Ministries of Education, the Ministry of Finance, the Agency for Higher Education, members of Parliament, and universities, and higher education institutions themselves. Additionally, the forecasts are used by the Swedish Public Employment Agency.

When *Trends and Forecasts* is published, the information is sent to these organisations in the form of a printed book. Interested persons also have access to electronic data if they request it. The publication is accompanied by a number of press releases, as well as a 'Forecast Day,' a one-day event held at Statistics Sweden where the results are presented to roughly 180 persons. The attendees represent the various public agencies mentioned, as well as some private actors.

The Swedish Ministry of Education uses the results as background information in its recommendations for changing the dimensioning of the higher education system. These recommendations go to the Department of Finance, where if approved, get incorporated into the annual budget which is approved by parliament. With some exceptions (namely medical and dental school and psychology education), the recommendations are presented in the form of 'maximum number of spaces' financed. It is important to note that Sweden does not 'dimension' the higher education system in the sense of mandating the exact number of students that will attend. The dimensioning that is done is rather a decision regarding the 'financed maximum.' Educational institutions are free to accept more or fewer students than the financed maximum; they are also permitted to 'borrow' financed spaces from future years to a limited degree, as well as 'save' financed spaces from years when they are not used. In principle institutions could finance some spaces themselves, but this happens only in special circumstances.

Thus, the Swedish higher education system is largely demand-steered. The parliament makes decisions on the maximum number of educational places it will fund, but the actual number of places (and number of students) is decided by the educational institutions themselves. These institutions have access to important information necessary to make the decision, including the number of applicants, the parliamentary decisions regarding the 'maximum' number of places that are financed, knowledge about the interests of current faculty, potential availability of new faculty, and information about the local and national

labour markets. *Trends and Forecasts* provides study advisors at schools some information about the current and future labour market trends. In addition to using the results in the dimensioning process, these advisors use the forecast as background information in their discussions with students.

The Agency for Higher Education uses a specially adapted version of *Trends and Forecasts* in its discussions with higher education institutions. They provide summaries of the forecast and additional analysis to the institutions. This information helps the educational institutions make decisions about the number of students to accept, new faculty to recruit, new programs to develop and old ones to expand or close. It also helps study advisors at the institutions give concrete information to students so they can make better decisions about a career and education.

The Ministry of Education also used *Trends and Forecasts* on a regular basis to inform and update Sweden's political leadership on the current and future state of the educational system and its connection to the labour market. For example, the Ministry of Education recently used *Trends and Forecasts* as background support for a recommendation to increase the financing of adult education. When the recent financial collapse occurred, the Ministry of Education began evaluating how the crisis would affect the education system and how the education system could be adjusted to meet the changed demands of the labour market. Part of this analysis was (and is) knowledge of the short-term impacts, which may include increased demand for education from unemployed persons. Such short-term changes in demand for education have long-term impacts on the supply of education persons. Another part is the long-term trends showing imbalances between supply of and demand for persons with a particular educational background. *Trends and Forecasts* provides this easily understood 'snapshot' of the educational system and labour market. It is used to argue for increases or decreases in financing.

Example Results: Heath and Social Services

The lack of people who have been trained for work within healthcare and social services appears to be very widespread in the long-term. The supply is only expected to increase by 30 000 up to the year 2030 while the demand will increase by all of 190 000. The demand will mainly be for people with upper secondary education. Retirement among healthcare workers will be considerable, and the number of graduates from the healthcare programme will not be sufficient to fill the gap when people retire (see also figures in Annex 2).

In 2004 the National Board of Health and Welfare released a work plan for recruitment within healthcare and social services. The authorities propose ten targets and ten measures in a ten-year plan of action designed to support investment in better working conditions and qualification levels.

The following targets were proposed:

1. The number of personnel per first-line manager is to be limited.
2. As a minimum, all personnel are to have basic professional qualifications.
3. The number of personnel with post-Upper Secondary-level training in the health and caring sciences is to increase.
4. The number of work-related injuries is to be reduced.
5. The average age of retirement is to increase.
6. Current national health targets of a 50% reduction in sick leave by 2008 are also to be achieved for personnel in services caring for the elderly and disabled.
7. The proportion of care personnel with full-time permanent posts is to increase.
8. The proportion of personnel employed by the hour is to fall.
9. An increased proportion of staff in posts that require higher education qualifications are to have non-Nordic immigrant background.
10. A larger proportion of permanently employed personnel is to be male.

The following measures were proposed:

1. Better support to managers.
2. Improved skills and better training and development opportunities.
3. An improved Upper Secondary Health Care programme.
4. More adult education.
5. Adapted higher education and research.
6. Improved working environment.
7. Improved paths of recruitment.
8. Increased security of employment and full-time employment.
9. Better introduction for refugees and immigrants.
10. More men in the care services.

Along with these overarching measures, 61 concrete proposals for concrete government action were proposed. A follow up of the program is expected every five years.

Recent improvements in healthcare recruitment

A study of the recruitment situation in Sweden's municipalities was completed in 2006 (National Board of Health and Welfare, 2006). It showed that despite demographic trends, recruitment of most types of healthcare professionals has been easier than it was five years earlier. The problem of recruitment has been at the forefront of government analysis and policy for more than ten years. But recently fewer municipal governments have been analysing the problem and instead have been working actively to improve working conditions and professional development at the workplace.

In general terms, it is clear that the recruitment situation was considerably more favourable in 2006 than it was in 2001 and 2002 (National Board of Health, Situation Report, Recruitment in Health and Welfare in municipalities, <http://www.socialstyrelsen.se/publikationer2007/2007-123-22>). Overall, it is clear that the recruitment situation has improved significantly for most professional categories and in particular for the categories that were previously very difficult to recruit – rehabilitation personal and nurses. Vacancies and recruitment times provide support for the positive image of the recruitment situation. In 2006 virtually all municipalities have less than one percent vacant posts. Most dramatic has been the reduction in the case of nurses where the vacancy rate has fallen from 6% to 1% in the past five years.

When it comes to the municipalities' strategic work on recruitment and skills-provision, there is a fragmented picture. The proportion of municipalities that frequently carry out analysis or calculations of recruitment need has decreased. Several municipalities consider that they have no need of analysis at the moment and that their recruitment situation is relatively stable. A consistent view is that elderly care is an activity in which needs can change quickly. This is addressed by hiring temporary employees during periods when additional staff is needed.

Another question concerns which concrete measures and approaches municipalities are employing to deal with the challenges surrounding recruitment and skills development. The proportion of municipalities which merged with other municipalities on different activities to improve recruitment situation has decreased since 2002. When it comes to more concrete activities to facilitate retention and recruitment, there are a number of strategies that are particularly common. These include raising the active employment rate, encouraging more people to seek education, improving the work environment, and increasing educational capacity. There are, however, significantly fewer municipalities today than five years ago, who are actively working to offer better pay and conditions.

Some strategies that are clearly recognizable as more in use today than in the past include increased investment in the work environment, increased educational capacity, and new forms of skills development in the workplace. It is clear that the broad educational initiatives with the support of the program *Kompetenstegen* (a national-level program to support

competence development efforts at the municipal level) have had an impact on the municipalities. Work with *Kompetensstegen* has meant that most municipalities made some form of inventory or other analysis of the skills and professional development needs of their staff. The need for skills development is large and training in a wide range of areas is carried out in order to do this. Two-thirds of the municipalities have stated that they offer opportunities for further training for assistant-level staff, which constitutes a substantial increase compared to previous years.

A 2006 survey posed questions to the municipalities regarding how important different national-level efforts were to their recruitment situation. Roughly eight of ten municipalities believe that professional status, work environment, work schedule, funding for skills development, salary levels, and support for adult learners are the factors that have the greatest impact on recruitment situation.

Finally, some overall conclusions regarding the municipalities' work in relation to the intentions of the 2004 national action programmes. The 2006 study shows that the municipalities' work aligns well with government intentions when it comes to improving working conditions, work demands, and professional development and education. However, there is still a gap between national and municipal levels of ambition in finding new methods of recruitment and in encouraging older employees in healthcare and nursing to want to delay retirement and work longer.

3 ASSESSMENT OF THE SUCCESS FACTORS AND TRANSFERABILITY

The long-term forecasts are one of several tools used to make adjustments to the educational system in Sweden. Most other countries also do long term forecasts. The methodologies vary. The level of detail available in Sweden is high because the input data is based on registers. Countries with similar registers are able to produce forecasts at a similar level of detail. Those who base their forecasts on survey data generally have larger statistical uncertainty in the results.

However, all countries face the same challenge: long-term forecasts are based on past data and are notoriously inaccurate. Economic change happens quickly, countries are more interdependent than they were in the past, and the future is hard to predict. In general, the shorter-term forecasts (2-3 years) provide more valuable data for job seekers than the long-term forecasts.

However, long-term forecasts can capture long-term demographic trends better than short-term forecasts. The current and coming shortage of personnel in the healthcare and services sectors is a good example. They can also provide a more complete picture of changes in the educational system than those that have happened recently. The latest results of the long-term forecast in Sweden confirm the coming shortage of personnel within healthcare and services.

Comparison of the Swedish and Finnish Models

The forecasts of demand for educated personnel in Sweden and Finland are similar. Both countries use dynamic, applied general equilibrium macroeconomic models of the national economy to make the forecasts. These models include several hundred variables for the national accounts and general agents in the economy. The core of the models is optimisation problems of agents that result in demand and supply functions of goods and services, financial political instruments, taxes, subsidies, and so on.

The Swedish corresponding model to the Finnish VATTAGE is the Swedish Long Term Survey, done every four years and most recently in 2008. The aim of the Long-Term Survey is to provide a basis for economic policy and initiate a debate about economic

policy formulation. It should also provide an overall picture of economic developments in the long term. The Survey is prepared by officials at the Ministry of Finance and the political leadership of the Ministry has not taken a position on the contents.

The Swedish Long Term Survey provides data to forecast the demand for educated personnel by sector. The supply of personnel is calculated using register data on individuals and data on the current results of the educational system. The demand and supply sides are put together to produce the gap analysis in the Trends and Forecast model.

Trends and Forecasts is a model that is most suited to countries with comprehensive individual registers. The demand side of the model, based on a general equilibrium model of the economy, can be applied to any country with reliable data on the national accounts. Most countries already use such a model in their analysis and policy making. The supply side of the model, based on registers, is most applicable in its current form to Scandinavian countries and others with adequate individual data. Most countries have individual-based data on the education system; however, not all have adequate individual data on the labour force. Labour Force data for most countries comes from the Labour Force Survey. Since it is based on samples, statistical uncertainty will limit the accuracy of the model and the detail of the forecasts that can be made. In countries where the Labour Force Survey must be used, the forecasts will likely be limited to broad groupings of professionals, probably at the ISCO major level.

4 QUESTIONS

- How are long-term forecasts used in other countries?
- What recent discussions have you had regarding the role of quantitative forecasts in closing the labour gap?
- What measures are under consideration that could encourage young people to choose healthcare-related fields of education?
- What other measures can be taken to deal with the worsening labour shortage in healthcare and social services?

ANNEX 1: SUMMARY TABLE

Labour market situation in the Peer Country
<ul style="list-style-type: none"> Sweden's population will be more than 10 million in 2030. The age 65+ group will increase from 1.6 million in 2007 to 2.3 million in 2030. Post-secondary educated will rise sharply. The shortage of labour in healthcare will increase.
Assessment of the policy measure
<ul style="list-style-type: none"> Sweden does a long-term forecast of education and the labour market every three years. The lack of people who have been trained for work within <i>healthcare and social services</i> appears to be very widespread in the long-term. The supply is only expected to increase by 30 000 up to the year 2030 while the demand will increase by only 190 000. The shortage of qualified personal in health and social services will grow over the long term. However, Sweden has had success in recent years in improving recruitment. This success has come from making detailed inventories of skills needs, improving working conditions, and funding professional development for professionals of all levels.
Assessment of success factors and transferability
<ul style="list-style-type: none"> Sweden's long-term forecast confirms the trend of a continuing and worsening shortage of healthcare labour, a trend that is apparent in many countries. Sweden's current policies to close the coming labour gap are insufficient. Sweden's forecast model <i>Trends and Forecasts</i> is most readily transferable to countries with individual-based registers. However, in principal the model could be used in any country with measures of future demand (from, for example, a general equilibrium model of the economy) and measures of supply (from educational attainment data and the labour force survey). Many countries already do a model similar to Sweden's <i>Trends and Forecasts</i>. Models which rely on survey data like the LFS will have higher levels of statistical uncertainty and a lower level of detail. Sweden's programs to improve recruitment and retention of personnel within healthcare and social services have had most success in the areas of 1) compiling detailed inventories of needs, 2) improving working conditions, and 3) funding professional development. Such efforts can be easily transferred to other countries. Sweden has been less successful at encouraging older personnel to delay retirement and work longer.
Questions
<ul style="list-style-type: none"> How are long-term forecasts used in other countries? What recent discussions have you had regarding the role of quantitative forecasts in closing the labour gap? What measures are under consideration that could encourage young people to choose healthcare-related fields of education?

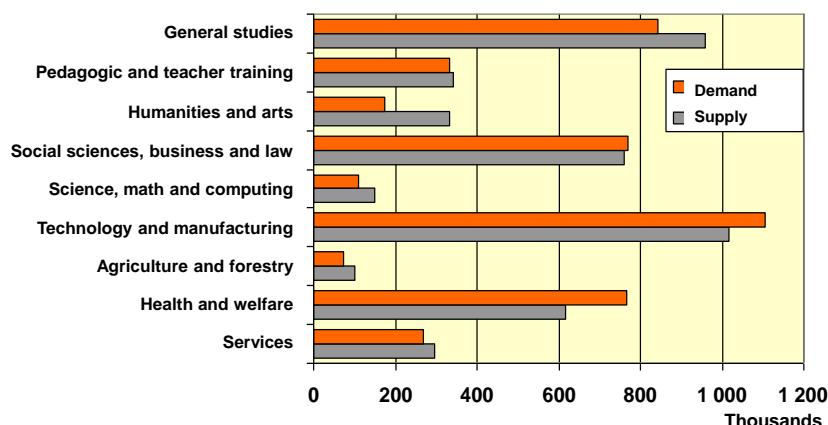
- What other measures can be taken to deal with the worsening labour shortage in healthcare and social services?

ANNEX 2 - CHARTS



Statistiska centralbyrån Statistics Sweden

Supply and demand 2030 by field of education



Statistiska centralbyrån Statistics Sweden

2008 Trends and Forecasts Conclusions

We need more:

- Healthcare
- Engineering and technical/industrial educated (Secondary)
- Teaching with orientation towards young children

We need fewer:

- Humanities and arts
- Business (Post-Secondary educated)
- General education
- Teaching with orientation towards older children