

Summary

Are higher education institutions
making efficient use of their
resources? (RiR 2011:2)



Efficiency and productivity for universities and university colleges

The Swedish National Audit Office has conducted an audit on resource efficiency for 30 universities and university colleges.

Background to the audit

Motives: Extensive statistics on universities and university colleges are collected annually by various agencies. These statistics have not been analysed in a systematic way by relating the resources allocated to the different outputs that are produced by higher education and research. International research has demonstrated that higher education institutions do not always use available resources efficiently. The Swedish National Audit Office showed in a previous audit of the use of resources in undergraduate education that the management of the higher education institutions lacked overall knowledge of how available resources are being used.

Purpose: To investigate whether higher education institutions make efficient use of available resources or whether there is potential to increase the efficiency in the use of resources.

Implementation: The DEA method (Data Envelopment Analysis) was used to calculate relative efficiency measures for 30 higher education institutions during the period 2004-2008. This method calculates efficiency measures on the basis of what has proved possible to achieve. This implies that the efficiency measures are defined in compliance with best practice. The way in which productivity developed during the period was also calculated in order to investigate how the efficiency of resource use changed. The Swedish National Audit Office's analysis included inputs (resources) measured as different quantities of personnel, students and other resources. Outputs were measured in the form of annual performance equivalents within education at undergraduate and postgraduate level, the number of Doctor of Philosophy and Licentiate qualifications granted, and research volume in the form of an indicator that measures scientific publications. The Swedish National Audit Office has assumed that the outputs analysed are of good quality, as specified by the Swedish Higher Education Act. The data used have been collected from the Swedish National Agency for Higher Education, the annual financial reports of the higher education institutions, Statistics Sweden and the Swedish Research Council.



The results of the audit

The audit has resulted in the following observations and conclusions:

High efficiency, with potential for improvement. About half of the 30 higher education institutions are fully efficient, as defined by the model, while there is potential for more efficient use of resources at the remaining institutions. The potential for improvement is not evenly distributed among these institutions: several of them are close to achieving efficient use of resources, while others have a relatively high potential for improvement. The average efficiency measure for all 30 institutions was 0.93, which corresponds to a potential for improvement of approximately 7%.

Productivity has increased. Productivity increased during the period from 2004/05 to 2007/08. The average productivity increase for the higher education institutions was approximately 2% during this period.

Some factors co-vary with efficiency. The Swedish National Audit Office has investigated possible explanations of the differences in the efficiency of resource use. Higher education institutions with a high proportion of students studying by distance learning or with a high proportion of students on self-contained courses do not use their resources as efficiently as higher education institutions with lower proportions of students in these two areas. Further, higher education institutions that conduct education within fewer areas use their resources more efficiently than more diverse institutions.

The recommendations of the National Audit Office

Recommendation to the Government:

- Commission the Swedish National Agency for Higher Education, Statistics Sweden and the Swedish Research Council to cooperate in the development of methods for, and the implementation of, measurements of efficiency and productivity in the higher education sector.

Recommendation to the higher education institutions:

- Initiate internal development work with a view to promoting more efficient use of resources.

Fact file

Considerable resources are invested in education and research at higher education institutions in Sweden. The costs incurred by higher education institutions for undergraduate higher education amounted to approximately SEK 22 billion in 2008, while the costs for research and education at postgraduate level amounted to approximately SEK 28 billion. There were 348,000 students registered in education at undergraduate and advanced level in the autumn term of 2008, and approximately 17,000 doctoral candidates registered in postgraduate education. The total



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workforce in higher education was around 43,000 full-time equivalents, of which about 22,000 full-time equivalents were teaching and research staff.

Section 1 of the Swedish Budget Act (1996:1059) states that Government operations shall strive to achieve a high level of efficiency, effectiveness and economy. Section 3 of the Agencies Ordinance (2007:515) states that an agency's management is responsible to the Government for its operations. Management must make sure, among other things, that operations are run efficiently and that the agency manages State funds prudently.

