

Abstract

Productivity in the public sector 1960-1992

In 1986 ESO (The Expert Group on Public Finance) published a report on measurements and development of productivity in the public sector in Sweden for the period 1960–1980 (Ds 1986:13, english version). The reason for undertaking this effort was the tremendous growth of the public sector in the post-war period and the need to assess its macro-economic impact on welfare and fiscal strain. Public consumption amounts to some 30 per cent of GNP today. Therefore productivity in the public sector is significant for welfare as well as for the tax-burden.

The way the public sector is accounted for in GNP is by the amount of resources that it consumes. Gross consumption of resources minus user charges defines public consumption. Salaries and labour taxes define value added. Therefore by definition there can be no productivity change in the public sector. Some countries have replaced the zero-productivity-increase-assumption with an assumption of a small percentage-wise increase of productivity in the public sector. Rather than replacing one ill-founded assumption by another it was thought to be desirable to have an assessment of the real change in productivity – if possible.

The results from the first attempt to measure productivity in the public sector indicated that it indeed was possible. Large segments of the public sector produce individual services, like health-care, education, labour-exchange service etc. In those areas it was relatively easy to define and measure output. However, it turned out to be possible even for the more collective services of the night-watch-state – police, courts, prisons etc. – as well as for the social welfare state – the administration of social benefits – and its accompanying financial services – the administration of taxes, customs, enforcement services etc. Some 70 per cent of the public sector was included in the study. Out of the national government sector 30 per cent was included. The major part of the study was made up of local government services.

The norm taken for the measurement of output and production costs in these studies was the norm of national accounts.

The results indicated a huge plunge in productivity starting in 1960 and continuing up to 1980. Some notable exceptions were recorded. From the middle of the 1970s productivity started to increase in the national government sector as a whole. Customs, meteorological services and state

operated roads and high-ways showed continued productivity increase for the whole period. Day-care centers showed a slight productivity increase in the 1970s.

Of course, changes in the quality of output was difficult to incorporate in the measurements. Changes in the composition of output was recorded, since outputs of different kinds were given weights, according to their unit costs in 1980. Apart from that, some quality adjustments were made, along the same procedures that are used to adjust price-indices. But on the whole, quality change was assessed separately from the output measurement. Quality was considered not to have changed significantly enough to upset the productivity measurements, except for in a couple of areas. One was health-care, another was meteorological services and still another was state operated roads and high-ways.

The aggregated productivity change 1970–1980 was calculated to be minus 1,5 per cent per year. 1960–1970 the studies covered a smaller part of the whole public sector. The very clear impression was, however, that productivity decrease in that decade was even larger.

The present study is a follow-up on the former study. It covers 61 per cent of the public sector during the period 1980–1992. The main part of the areas included are local government services.

The same methods for measurements have been used. There has been an effort to use similar indicators of outputs etc. to make this study comparable to the former. At the same time there has been an effort to refine the measurements by using better indicators, incorporating more qualitative change and better calculations of costs and price indices. Several sensitivity tests have been performed, by varying output indicators, weights, prices indices etc. In four areas – courts, prosecution, hospitals and theaters – parallel productivity studies by means of Data Envelopment Analysis (DEA) have been performed, that can be compared with the traditional productivity measurements with the national accounts approach. A large scale effort to assess quality change in the health-care sector has been undertaken. Its results have been published separately (Ds 1994:22).

The results indicate a continued productivity decrease in the public sector as a whole, but at a much more modest rate. Between 1980–1990 the decrease has been 0,4 per cent per year. This means that the rate of decrease has been only one third of what it was in the previous decade.

In the national government sector there was in fact an increase in productivity of 0,7 per cent per year. Out of 14 areas of national government production 10 showed a productivity increase. This is a continuation of the upward trend that started already in 1975. The national government sector seems to have experienced a continued productivity increase for over 15 years. This, then is based on a sample of roughly 30 per cent of the national government sector.

The local government sector recorded a productivity decline of 0,6 per cent per year. This is a much smaller decrease than in the previous decade. One area within the local government sector has recorded a productivity increase – day-care centers. For 22 years this sector has experienced productivity increase. Over the last 12 years the increase was as large as 27 per cent. It is only in the latter years – 1991–1992 – that the number of personnel per child has increased significantly, possibly connected with a quality decrease. Health-care recorded a slight productivity decline – 6,5 per cent over 12 years. But to this result should be added a substantial increase in quality.

Culture is treated as a separate area and includes national theaters, local governments theaters and private but subsidized theaters, public libraries, national and local government museums and concert halls. The culture area taken as a whole experienced a decreasing productivity of 2,9 per cent per year 1981–1991.

Table Productivity change in the public sector 1980–1992

Areas with <i>increased</i> productivity
Day-care centers
National university basic education
Labour exchange offices
Employment training
Employability institutes
Courts
Immigrant services
Prisons
Enforcement services
Tax administration
Social insurance services
 Areas with <i>unchanged</i> productivity
Local government high-schools
County councils basic university education
Day-care at family homes
Prosecution
 Areas with <i>decreased</i> productivity
Health services
Primary schools
County councils high-schools
Old-age care
Public libraries
Museums
Theaters
Concert halls
Undergraduate studies
Patent- and registration office
Police

The four DEA-studies confirm these results. It is possible in these studies to distinguish between changes in technical efficiency and changes in the efficiency frontier (technological change). Whereas technological

change has been in the negative (except for the courts) – which must be interpreted broadly to encompass social conditions for production, to make sense – technical efficiency has increased. This means that productivity differentials have been smaller, while at the same time the "best in the class" have become less efficient. Overall estimates of productivity change by the DEA-method are almost on the decimal the same as those estimated by the national accounts approach. This is an interesting methodological observation, which has practical implications. The character of data sources and the nature of operations may call for either of the methods. The choice of method does not seem to influence the result.

What explanations are there to these results? A host of reasons have been produced to explain why the public sector should have a declining productivity. But here we are confronted with a varied picture. Some government operations show decreasing productivity while others show increasing productivity. Is there any explanation to this variation?

Large scale government administration, such as social benefit services, have shown productivity increases. This seems to be due to computerization of payment routines as well as simplification of rules and regulations.

But routinized services does not constitute the only area in which productivity has increased. There are examples of education, care and other "soft" areas in which productivity has increased. The great dividing line seems to be between national government and local government. Local government budget constraints does not seem to have been as tight as the national government budget constraint (although it has allowed a huge deficit in the beginning of the 1990s). There has been a very obvious connection between the rate of increase of resources spent on public consumption and the rate of productivity change. Those periods with a relatively slow increase in public consumption – the beginning of the eighties and the beginning of the nineties – showed a more favorable development of productivity.

But as in the former study the dominant observation is that areas and periods with a faster increase in output recorded a more favorable change in productivity than those with a slow increase or a decrease.

Several policy implications can be drawn from the study. One is that productivity measurements are essential if one wants to grasp and handle the increase in public spending. It seems to be the only way to come to an understanding of what the real forces are that continue to inflate public spending so as to tackle them. Another is that there is a substantial potential for saving tax-payers money in increasing productivity. Even though the annual saving is small, the accumulated saving for the whole government sector is considerable. However, the really big changes in government spending, probably must be brought about in other ways, since 32 years of experiences indicate tremendous difficulties in achieving

a fast enough productivity increase to solve the structural budget deficit problem of the Swedish government sector. What enforces this conclusion is that it may be that productivity may only be increased by increased quality in some areas, such as in the health-care sector, and that does not relieve the strain on the budget. Also, an outcome of these productivity measurements is the insight that public sector output continuously keeps increasing. There are more children to be trained longer, more children and elderly to care for, more criminals to chase and convict etc. How, to handle the increasing "demand" for public sector output?

What is not captured to its full potential in these productivity measurements is the allocative efficiency of alternative service delivery. One example will suffice. Increasingly, old aged people have been supported at home instead of at institutions. If this has been cost-efficient it ought to be recorded as a productivity increase, but is not. Increasingly, the public sector must find new and more cost-efficient ways of solving its assignments in order to master its financial problems.