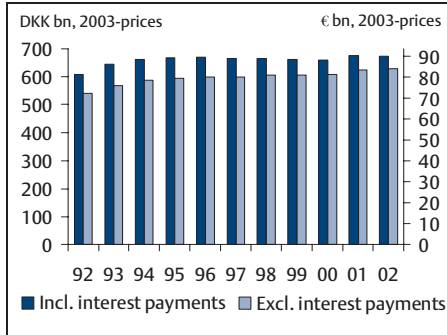


## ➤ English summary

### 1.1. Public expenditure and public expenditure management

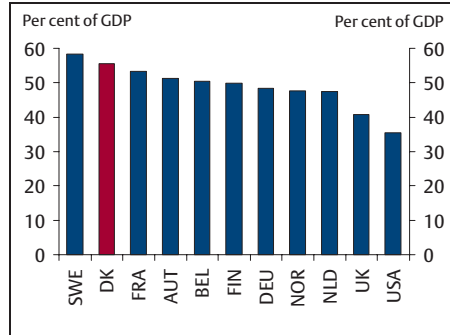
In 2002 public expenditure in the Danish central government, regions and municipalities amounted to almost DKK 655bn (€88bn).<sup>1</sup> In the period since 1992 total public expenditure has risen by approximately 13 per cent in real terms, *cf. figure 1.a.*

Figure 1.a. Total public expenditure in real terms, 1992-2002



Source: Ministry of Finance, Expenditure database.

Figure 1.b. Public expenditure burden in selected OECD countries, 2002



Source: OECD, *Economic Outlook 74*, December 2003.

Most of the increase in public expenditure took place from 1992 to 1995, after which total public expenditure has been relatively stable up until 2000. From 2000 to 2001, public expenditure rose by more than 2½ per cent in real terms. The trend in total public expenditure to some extent reflects decreasing interest payments as most other expenditure items have

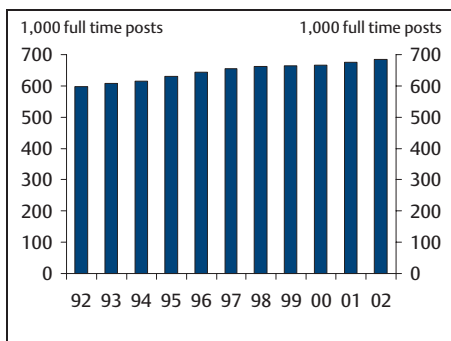
<sup>1</sup> The reported statement of total Danish public expenditure is based on the expenditure database of the Ministry of Finance, which is not directly comparable to the national accounts. According to the national accounts total public expenditure in Denmark amounted to just over DKK 740bn (€99bn) in 2002.

increased. Excluding interest payments public expenditure has been steadily rising during the whole period.

According to OECD figures Danish public expenditure in 2002 amounted to roughly 55 per cent of GDP, which is higher than most other countries. Among the OECD countries only Sweden had a larger expenditure burden in 2002, *cf. figure 1.b.*

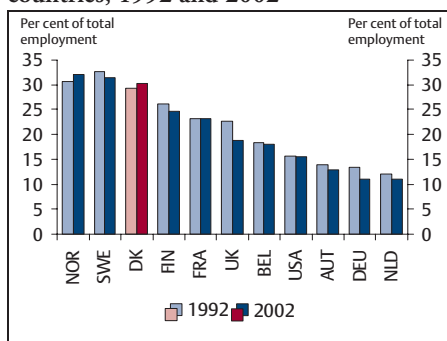
In 2002 the aggregate employment in the Danish public sector – central government, regions, and municipalities – amounted to almost 685.000 full time equivalent posts. In the period between 1992 and 2002 public employment grew by well over 85.000 posts, equalling more than 14 per cent, *cf. figure 2.a.*

Figure 2.a. Total public employment in full time equivalent posts, 1992-2002



Source: The State Employer's Authority and FLD.

Figure 2.b. Ratio of public employment to total employment in selected OECD countries, 1992 and 2002



Source: OECD, *Economic Outlook 74*, December 2003.

Public employment in Denmark equalled just under one third of total employment in 2002. Only Norway and Sweden have comparable levels of public employment in relation to total employment. Furthermore, only in Denmark and Norway has this share risen since 1992, *cf. figure 2.b.*

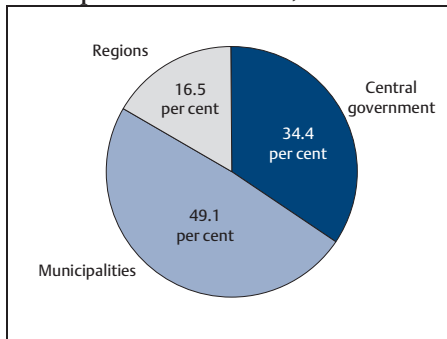
The sheer magnitude of public expenditure and public sector employment in relation to the total economy necessitates a sharp focus on sound public expenditure management, including continuous reflection on whether priorities are appropriate and whether resources are employed efficiently.

Sound public expenditure management necessitates that several considerations are balanced against each other. These include attaining general macroeconomic objectives, implementing political decisions and complying with the agreed budgets, and making provisions for an appropriate use of resources.

The general macroeconomic objectives set out guidelines for aggregate public expenditure so that fiscal policy over a number of years is sustainable, i.e. that decisions on spending today, does not simultaneously imply the need for spending cuts or tax increases in the coming years. Expenditure policy is thus implemented in an integrated framework, which explicitly considers future challenges, including an aging population and fewer in the working age.

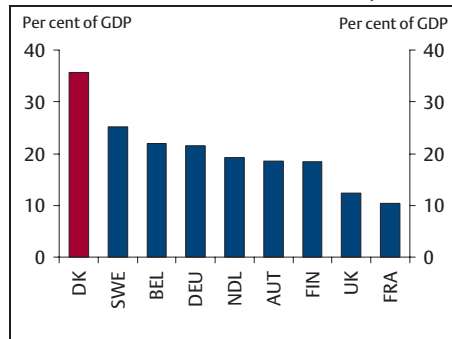
A particularly important challenge for overall public expenditure management and the attainment of macroeconomic objectives is the degree of decentralisation in the Danish public sector. Almost two thirds of total public expenditure in Denmark is employed in regions and municipalities, *cf. figure 3.a.*

Figure 3.a. The share of public expenditure in central government, regions and municipalities in Denmark, 2002



Source: Ministry of Finance, Expenditure database.

Figure 3.b. The share of regional and local government expenditure in relation to GDP in selected OECD countries, 2001



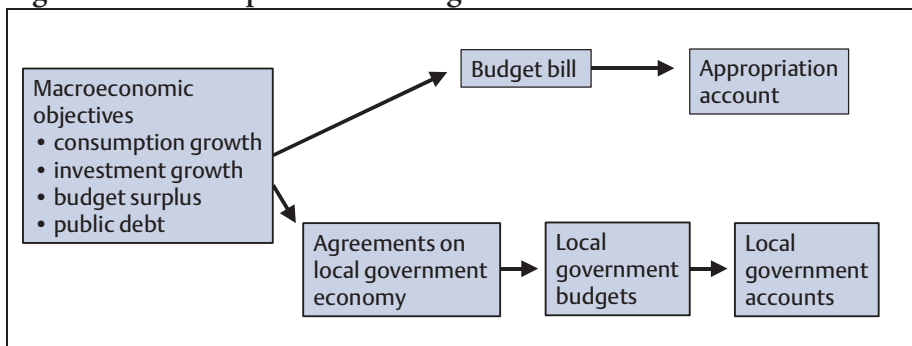
Source: OECD, *Annual National Accounts, volume II*, 2003.

The share of regional and local government expenditure in relation to GDP is more than 35 per cent, which makes the Danish public sector the most decentralised among the OECD countries, *cf. figure 3.b.* In Denmark municipalities and regions carry out most of the public service delivery that is targeted directly towards citizens, including elderly care,

assistance to disabled persons, hospitals and the primary health services, day-care for children, and primary and secondary education as well as payments of retirement pensions, sickness and maternity benefits, social assistance and individual housing benefits. In addition also the daily financial management in the central government is decentralised to the individual institutions. Consequently, the overall expenditure management in the Danish public sector has to handle the challenge of multiple decision-making levels.

In practise the government lays down the macroeconomic objectives, according to which public expenditure management is exercised. Presently the overall macroeconomic objectives include targets for public consumption growth, public investment growth, budget surplus and public debt.<sup>2</sup> On the basis of these objectives the government negotiates with municipalities and regions on the local government economy for the following year, and a budget proposal for the central government is drafted, *cf. figure 4*. The document, that determines the annual so-called “block grant” from the central government to municipalities and regions for the following year, is approved by the Parliament’s budget committee, and the overall budget bill is adopted by Parliament.

**Figure 4. Public expenditure management in Denmark**



The budgets of the municipalities and regions are established on the basis of the agreements between the government and the associations of municipalities and regions respectively. The agreements are voluntary and collective. This means that the agreements are not legally binding for the individual municipality or region, as the associations cannot formally put

<sup>2</sup> In addition public expenditure in Denmark is also managed in accordance with the so-called fiscal effect.

their members under an obligation. Hence, the agreements do not compromise the right of the individual municipalities and regions to adjust budgets in accordance with local conditions, but they establish the general framework for aggregate adjustments in municipalities and regions.<sup>3</sup>

At the central government level the importance of flexibility is reflected in a very decentralised organisation of expenditure management, including a system of framework budgeting where the individual ministries prioritise their budgets on subsidiary institutions and tasks, a focus on net appropriations, and a focus on total wage costs rather than a direct administration of the number of employees. The intent is to separate the general central management from the decentralised implementation and detailed financial management. Thereby, coherence between knowledge of the specific fields and management responsibility is achieved.

For appropriation managed central government institutions this system is supplemented by a possibility of transferring unspent appropriations from one year to the next, so that reduced spending in one year does not necessarily mean that the appropriation is lost.

Over the last 20 years the annual real growth in public consumption expenditure has varied from one year to the next. However, there is a clear tendency towards a higher growth in the 10 years leading up to 2002 than in the preceding 10 years, *cf. figure 5.a.*

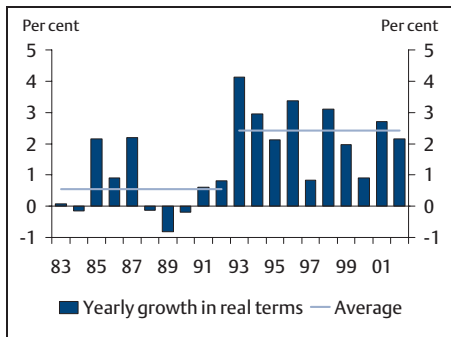
From 1983 to 1992 the average real growth in public consumption expenditure was ½ per cent a year. That corresponds to the present objective of a real growth in public consumption expenditure of ½ per cent annually over the period 2005-2010. From 1993 to 2002 real growth has averaged approximately 2½ per cent annually, i.e. almost five times the rate over the preceding 10 years. A similar development has been evident in public investment growth.

The growth rates for public consumption from 1993 to 2002 can be compared to the stated objectives for the same period, which have been in the order of 1 per cent annually.

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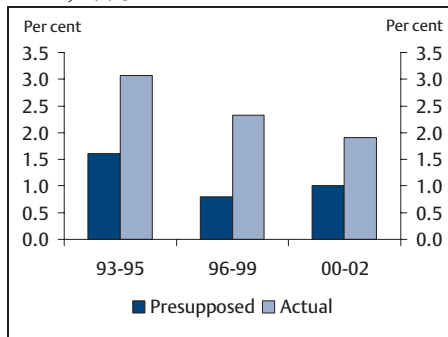
<sup>3</sup> For more information on public expenditure management in Denmark with particular attention to regions and municipalities, see OECD, *Enhancing Expenditure Control with a decentralised Public Sector in Denmark*, Working Paper No. 320, 2002.

Figure 5.a. Annual growth in public consumption expenditure in real terms, 1983-2002



Source: Statistics Denmark.

Figure 5.b. Presupposed and actual annual growth in public consumption in real terms, 1993-2002



Source: Statistics Denmark.

Since unanticipated incidents and necessary additional expenditure can cause growth rates to fluctuate from year to year, it is more appropriate to focus on periods of a few years when comparing presupposed and actual growth rates.

In all three sub-periods from 1993 to 2002 (the first 3 years, the middle 4 years, and the last 3 years) the real growth in public consumption expenditure has been considerably higher than presupposed in medium-term projections, *cf. figure 5.b.*

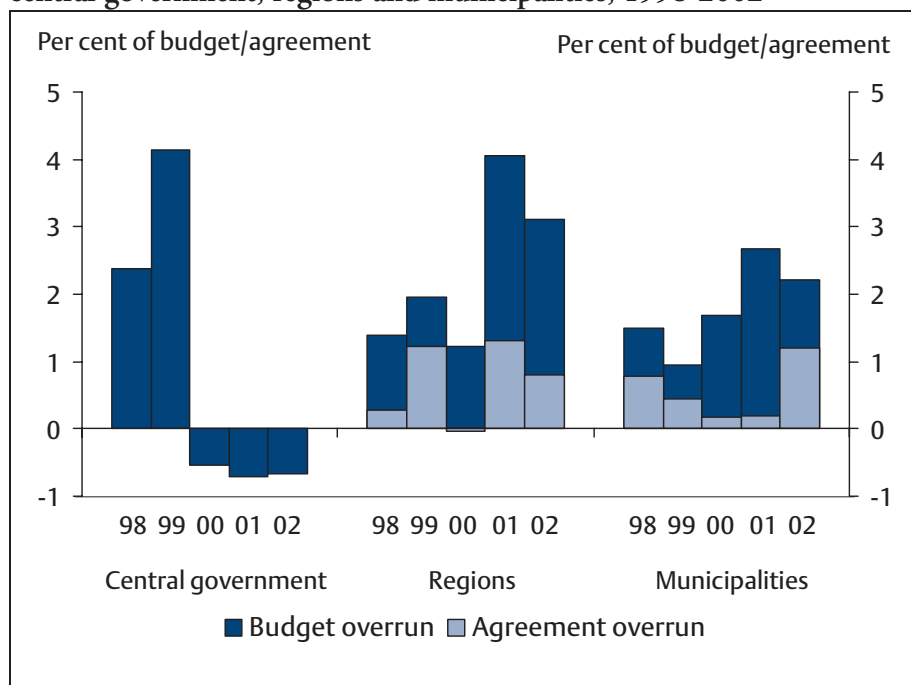
Nominal growth in public consumption expenditure has been closer to the targets over the period – though still higher. Moreover, the public consumption expenditure in proportion to GDP has not fallen as presupposed.

A sound expenditure management requires budget compliance. Budgets must represent a realistic assessment of the expenditure need in each area of the economy given present priorities and the macroeconomic framework.

An analysis of deviations between budgets and appropriation accounts – and also deviations between agreements with municipalities and regions and their ensuing budgets – over the latest five years shows, that budgets and agreements in both municipalities and regions have been overrun systematically, *cf. figure 6.* At the central government level budgets have

been met in the last three years, whereas there was considerable budget overruns in 1998 and 1999.

**Figure 6. Budget and agreement overruns for service expenditure in central government, regions and municipalities, 1998-2002**



From 1998 to 2002 budgets in municipalities and regions have exceeded the agreed levels of expenditure on services in practically every year – the only exception being the regions in 2000.

In addition, it has proved difficult for the municipalities and regions to comply with the adopted budgets. Combined agreements and budgets have annually been overrun with between 1 and 3 per cent of total service expenditure in the municipalities, and up to 4 per cent in the regions.

In 2003 and 2004 the municipalities and regions have drawn up budgets in accordance with the agreements. This indicates that expenditure management has improved.

## 1.2. Public spending in specific areas

With a tight overall expenditure policy allocating more resources to one policy area necessitates restraint in other areas. It is therefore necessary to keep a close watch on how public resources are allocated, and whether this corresponds to present priorities.

### Research and research-based education in Denmark

In 2001 total public expenditure on research and tertiary education in Denmark corresponded to just over 1.8 per cent of GDP. Only in Finland is public expenditure on research and tertiary education larger in relation to GDP, *cf. figure 7.a.* Private expenditure on research and tertiary education in Denmark amounted to approximately 1.7 per cent of GDP in 2001, which means that Denmark is trailing several OECD countries. To some extent this is due to relatively limited private spending on tertiary education, whereas private spending on research alone was at a level comparable to other OECD countries. The combined public and private expenditure places Denmark as one of the OECD countries with the largest investment in research and tertiary education in relation to GDP.

Figure 7.a. Total public and private expenditure on research and tertiary education in selected OECD countries, 2001

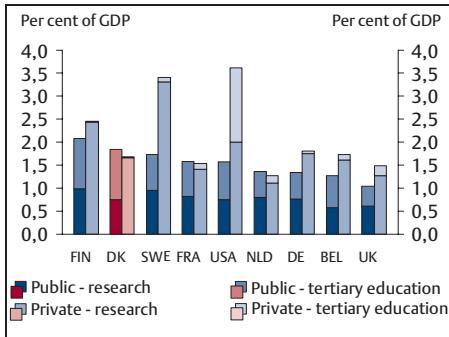
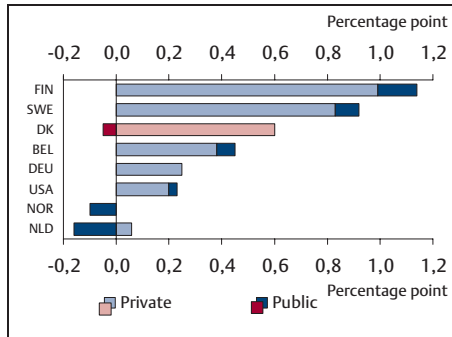


Figure 7.b. Trend in total public and private expenditure on research in selected OECD countries, 1995-2001



Source: OECD, *Education at a Glance*, 2003; OECD, *Main Science and Technology Indicators Database*.

In the period from 1995 to 2001 private investment in research in proportion to GDP has been increasing by approximately 0.6 percentage points in Denmark, *cf. figure 7.b.* Only Finland and Sweden have experi-



enced a larger increase. Public expenditure on research in Denmark has declined slightly in proportion to GDP.

Accordingly, in 2001 public expenditure on research in Denmark amounted to approximately  $\frac{3}{4}$  per cent of GDP, *cf. figure 8.a*. This places Denmark on the same level of public research spending as Germany and the US but well below Finland and Sweden.

Figure 8.a. Public expenditure on research in selected OECD countries, 2001

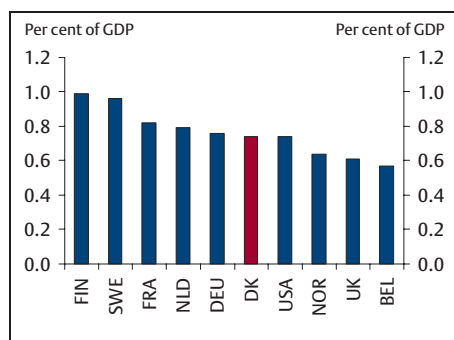
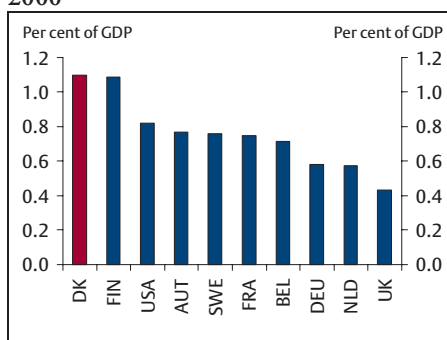


Figure 8.b. Public expenditure on tertiary education in selected OECD countries, 2000



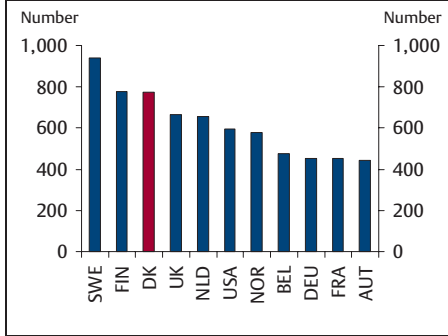
Source: OECD, *Education at a Glance*, 2003; OECD, *Main Science and Technology Indicators Database*.

Denmark has chosen to direct a relatively large share of its total public spending towards tertiary education, *cf. figure 8.b*. Among the OECD countries only Finland was spending a comparable share of GDP on public tertiary education in 2000.

The societal return to public investment in research and tertiary education is typically seen as consisting of a scientific return, a technological return and an educational return.

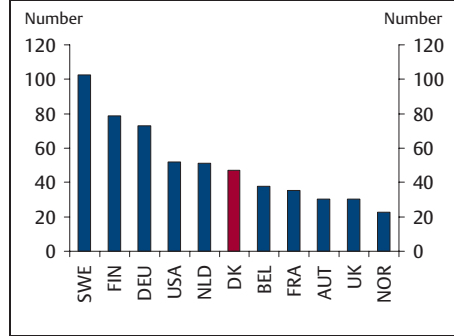
The scientific return on research investment is frequently assessed by different indicators for scientific publications and citation indices. In 2000 Denmark published roughly 800 scientific publications per million inhabitants. This is only exceeded by Sweden and is on a par with Finland, *cf. figure 9.a*. A similar result is obtained when focusing on the number of citations in scientific publications.

Figure 9.a. Scientific publications per million inhabitants in selected OECD countries, 2000



Source: OECD, *Science, Technology and Industry Outlook*, 2002.

Figure 9.b. Number of global patent applications per million inhabitants in selected OECD countries, 1999



Source: OECD, *Compendium of Patent Statistics*, 2003; OECD, *Main Science and Technology Indicators Database*.

The technological return to research investment can be evaluated by the number of patents. In 1999 Denmark applied for just short of 50 patents per million inhabitants. This is significantly fewer than Sweden, Finland and Germany, but on a level comparable to the number of patent applications in the US and the Netherlands, *cf. figure 9.b.*

The research capacity of a country is among other things a function of the human resources available for research. The educational return on investment in research and tertiary education can thus be assessed by the number of graduates from institutions of higher education.

In 2000 Denmark produced just under 55 graduates from institutions of higher education per 1,000 inhabitants in the age group from 20 to 29 years. Compared to most other OECD countries this is a relatively high number of graduates, *cf. figure 10.a.*

Figure 10.a. Number of graduates from institutions of higher education per 1,000 inhabitants aged 20-29 years in selected OECD countries, 2000

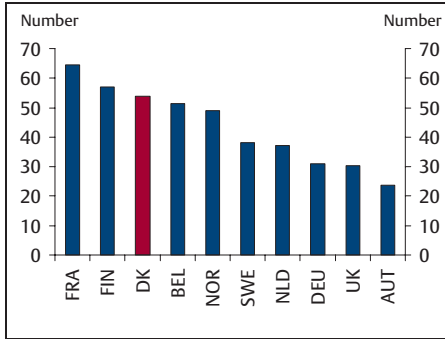
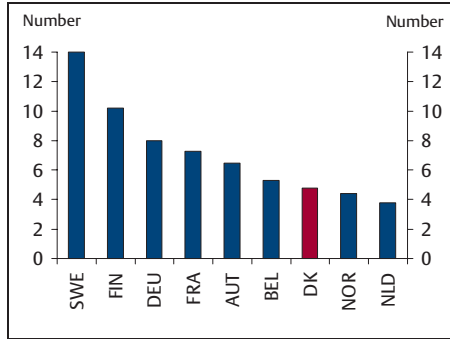


Figure 10.b. Number of Ph.D. graduates in the natural and technical sciences per 10,000 inhabitants aged 25 to 34 years in selected OECD countries, 2001



Source: Eurostat.

Compared to most other OECD countries Denmark has given higher priority to the humanities and social sciences relative to natural and technical sciences. This is reflected in the fact that Denmark is among the OECD countries that educate the smallest number of Ph.D. graduates in the natural and technical sciences, *cf. figure 10.b.*

## The economic consequences for the public sector of new EU regulation

The importance of EU regulation for Danish legislation has been increasing during the past 20 years. However, over the last five years only a small part of total EU regulation has had direct consequences for public expenditure in Denmark.

Whereas expenditure decisions in Denmark are typically made only for the following year, proposals in the EU are often adopted several years before they result in public expenditures in the individual member countries, *cf. box 1.* Consequently, particular attention is needed to ensure that they enter the annual prioritisation process as other expenditure proposals. Furthermore, once a EU proposal has been adopted, very little flexibility is normally left for the national implementation. Therefore it is important to ensure that the consequences of EU proposals are critically examined already during the discussions in the EU.

A systematic use of impact assessments – particularly quantitative impact assessments – can contribute to clarifying the economic consequences for

the public sector of new EU regulation. Thereby a better basis for the inclusion of proposals for new EU regulation in the overall prioritisation of public expenditure can be ensured.

### Box 1. The Danish EU-procedure

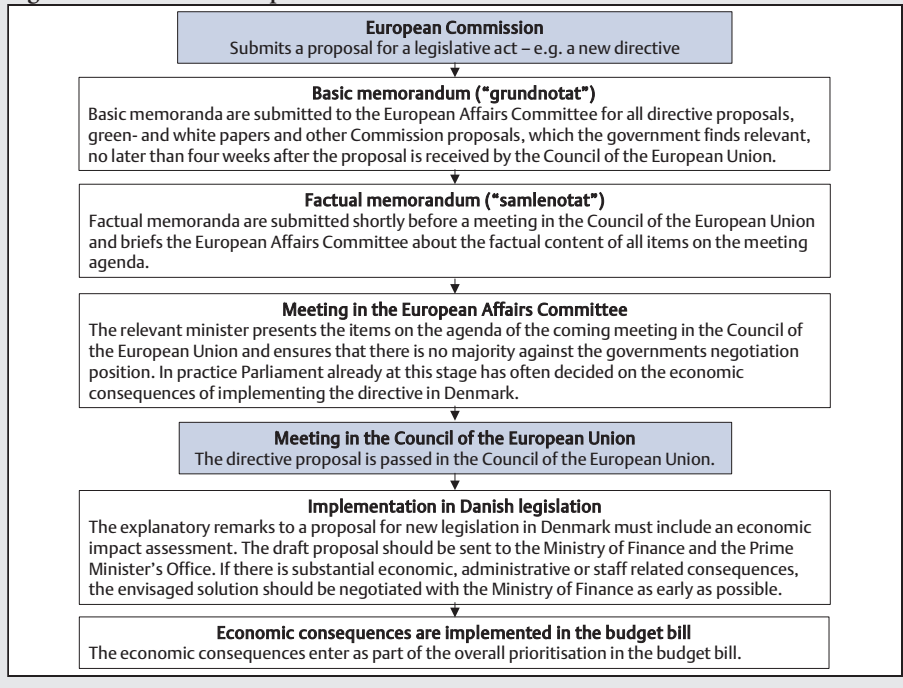
Passing new EU secondary legislation – for instance regulations or directives – often takes several years from the submission of a proposal by the Commission to full implementation in Member States.

During the negotiations within the EU institutions, the Danish government informs Parliament about the content of a new proposal, including the economic consequences for the public sector.

This is done in a “basic memorandum”, which must be submitted to the Parliament’s European Affairs Committee no later than four weeks after a new proposal is received by the Council of the European Union. Basic memoranda are submitted for directive proposals, green- and white papers and other Commission proposals, which the government finds relevant.

In addition, a so-called “factual memorandum” is submitted to the European Affairs Committee ahead of every meeting in the Council of the European Union. Shortly before the Council meeting, the attending minister presents the meeting agenda before the Committee and obtains Parliament’s mandate for the negotiations, *cf. figure a.*

Figure a. The Danish EU-procedure



### 1.3. Improving public sector efficiency

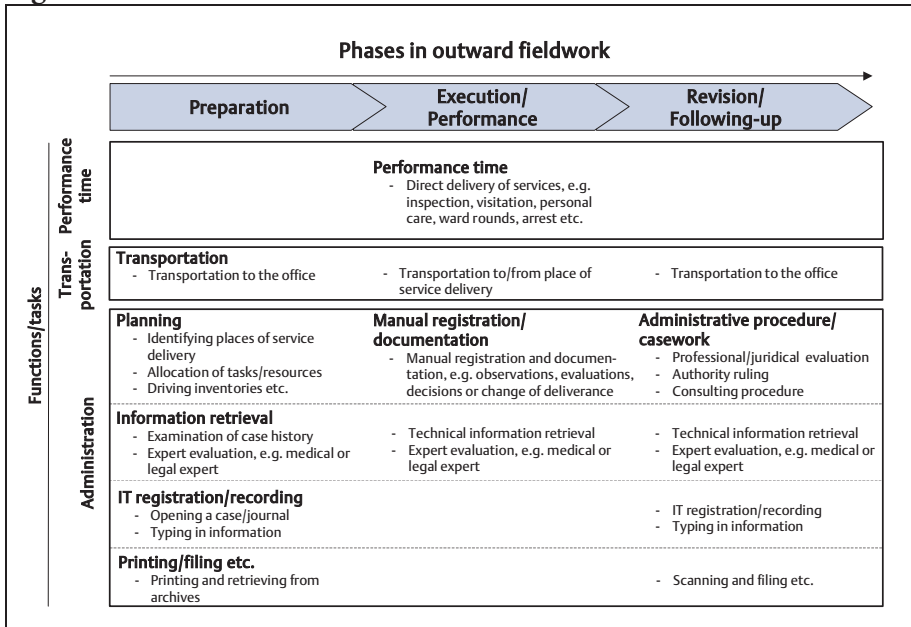
Sound public expenditure management also implies using resources as efficiently as possible. This entails continuous reflections in all parts of the public sector as to whether objectives can be accomplished better or cheaper by a changed organisation of tasks or by use of other instruments and new technology.

#### Technological assistance for outward fieldwork

The technological progress in mobile and wireless technology is creating new possibilities for making relevant data available to public employees engaged in *outward fieldwork* – i.e. different forms of service, inspection or control functions, that are performed in private homes, at private companies, or at infrastructure facilities etc. In this view outward fieldwork includes for instance police work, home care for the elderly and environmental inspections.

The outward fieldwork can be described by a generic framework consisting of three phases and three functions, *cf. figure 11*.

Figure 11. Phases and functions in outward fieldwork



Source: Ministry of Finance in collaboration with Accenture.

## ➤ Budget Review 2004

Whereas the essential element in outward fieldwork is the actual *execution* or *performance* of the outward effort, the work also includes a phase of *preparation* and a phase of *revision* or *following up*. Each phase is characterised by a number of activities. The preparation typically includes different forms of general and case specific planning of the outward work, while the following up to varying degrees includes reporting and possibly case work. The performance phase of the outward work is characterised by a combination of direct delivery of the service, registration and transportation.

The three different functions are the actual *performance* of the service, *transportation* and different forms of *administrative* work (planning, documentation, case work, information retrieval etc.).

Different analyses – carried out for the Budget Review 2004 – indicate that the introduction of mobile, digital assistance for the outward fieldwork related to work environment inspection and food control as well as local government home care for the elderly, can free between 8 and 15 per cent of the time involved in preparing, executing and following up on individual inspections and home care visits. These findings are confirmed by experiences in the public and private sector from both Denmark and abroad.

It is essential that the establishment of mobile, digital solutions are advantageous and cost-effective, when both the potential savings and expenses are considered. Costs generally vary from one solution to the next, but conservative estimates indicate that investments in mobile, digital solutions will often be cost-effective in less than 1-2 years.

This means that in a number of instances it will be possible to either improve services without additional cost or provide the same services cheaper. In addition public employees will be able to target their time on core functions. Both possibilities hold considerable perspective – particularly in home care, where the demographic trend is creating an increased pressure on public expenditure over the coming 10 to 20 years.

In relation to work environment inspection the analysis in the Budget Review 2004 indicates, that the introduction of mobile, digital assistance can free on average approximately 15 per cent of the total time that today

is spent on preparation, execution and revision of inspections, *cf. figure 12.a.*

Just short of 60 per cent of the potential freeing of resources is related to a reduction in time spent on the following up, whereas approximately 40 per cent concerns time spent on preparation. Only 10 per cent of the potential freeing of time relates to the actual execution of the outward tasks.

Figure 12.a. Total time spent today and potential freeing of time on an average work environment inspection, divided into phases

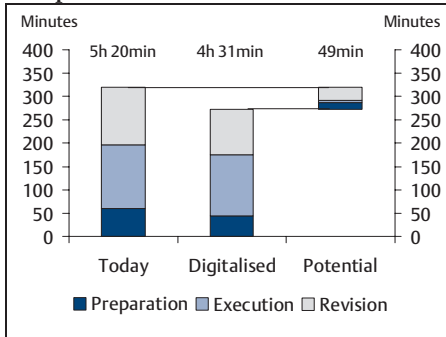
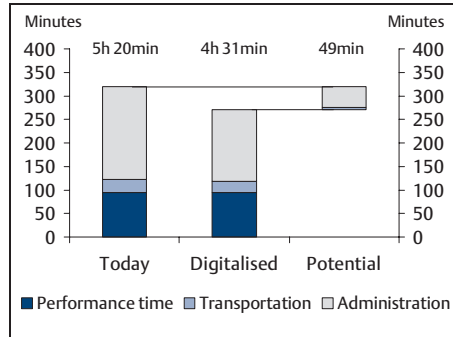


Figure 12.b. Total time spent today and potential freeing of time on an average work environment inspection, divided into functions



Source: Accenture, *Analyse af potentialet ved øget digitalisering relateret til udgående arbejder i arbejdstilsyn og fødevarekontrol*, 2003.

The potential freeing of time after the introduction of the technological assistance is primarily related to a reduction in time spent on administrative functions, although roughly 10 per cent concern transportation, *cf. figure 12.b.* The administrative functions include filing, printing, and manual and IT registration.

The findings of the analysis are comparable to results from a pilot project of the National Working Environment Authority concerning inspections of lifts.

Also in relation to food control the analysis in the Budget Review 2004 indicates, that the introduction of mobile, digital assistance can free on average approximately 15 per cent of the total time that is presently spent on preparation, execution and revision of inspections, *cf. figure 13.a.* Again almost 60 per cent of the time freed is related to revision, whereas

just short of 40 per cent concerns preparation and only a small part the outward task itself.

Figure 13.a. Total time spent and potential freeing of time on an average food control inspection, divided into phases

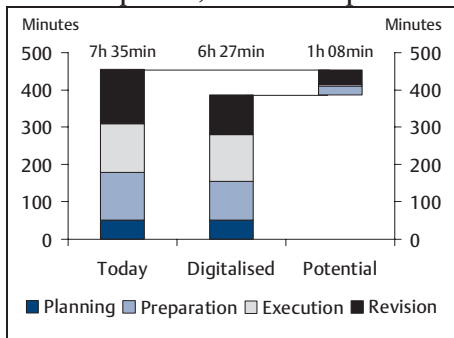
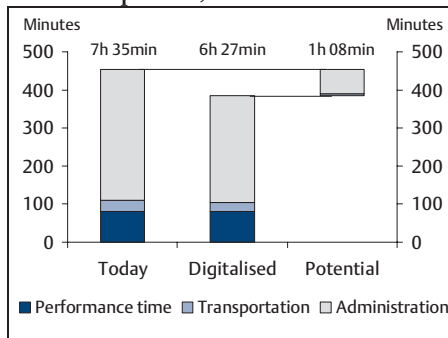


Figure 13.b. Total time spent and potential freeing of time on an average food control inspection, divided into functions



Source: Accenture, *Analyse af potentialet ved øget digitalisering relateret til udgående arbejde i arbejdstilsyn og fødevarerkontrol*, 2003.

As in the case of work environment inspection approximately 90 per cent of the freed time is explained by less time spent on administrative functions, whereas roughly 10 per cent is attributed to reduced transportation, cf. figure 13.b.

In 2003 the Danish Veterinary and Food Administration has initiated the project “The Digital Inspection”, which is meant to attain many of the benefits identified by the analysis in the Budget Review 2004.

Home care is by far the policy area with the greatest number of public employees engaged in outward fieldwork. In total what approximates 68.000 full time equivalent posts are employed in the public home care in Denmark.

The analysis in the Budget Review 2004 indicates, that the introduction of mobile, digital assistance can free in the vicinity of 8-15 per cent of the total time that is at present spent on the most common visitation functions and service provision.

According to the analysis the introduction of mobile, digital assistance can reduce the time per visitation by approximately 15 per cent. This



potential relates to less time spent on the revision phase, including an eliminated need for repeated information typing, cf. figure 14.a.

Figure 14.a. Total time spent and potential freeing of time related to visitation, divided into phases

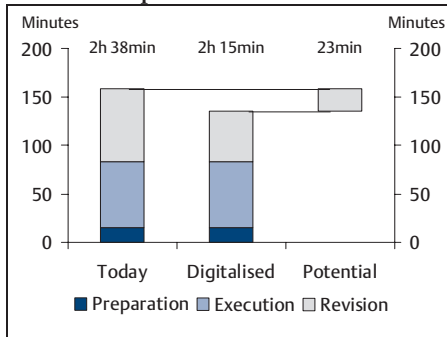
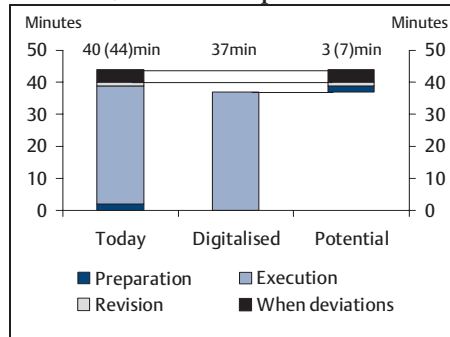


Figure 14.b. Total time spent and potential time freed on practical help and personal care, divided into phases



Source: Connector/Devoteam Fischer & Lorentz, *Analyse af potentialet ved anvendelse af håndholdt teknologi i hjemmeplejen*, 2003.

Most of the visits of the home care provider are related to the daily delivery of practical help, personal care and home nursing to approximately 200,000 users of public home care.

The analysis finds that the introduction of mobile, digital solutions permits the freeing of approximately 8 per cent of the time used, cf. figure 14.b. The potential is firstly due to the possibility of distributing schedules to the individual home care assistant without them having to show up at the office. Secondly, the individual home care assistant is able to access a question/answer-function and regulations etc. in the home of the user, whereby questions that may arise can be resolved directly in connection to the individual visit.

Moreover in the vicinity of 8-15 per cent of the visits include a further potential. When a visit involves deviations from the planned service – for instance changing needs of the home care user due to illness or practical circumstances – it may be necessary to make adjustments and registrations in schedules, notes etc. In these instances the analysis indicates a potential for freeing up time corresponding to on average 16 per cent of total time spent, cf. figure 14.b.

The results of the analysis in the Budget Review 2004 are confirmed by experiences in the home care for the elderly in Sweden.

In addition to the freeing of resources involved in work environment inspection, food control and home care, the introduction of mobile, digital assistance for outward fieldwork potentially involves benefits such as improved quality of data, better services for the users, a better work environment and greater employee satisfaction, a better division of labour, a faster administrative procedure, and greater flexibility when deviations from schedules occur.

### **Administrative expenditure in the labour market system**

The institutional setup also has a significant impact on the efficiency of the public sector. In Denmark the employment effort is organised in three different systems: The unemployment insurance funds that pay out unemployment benefits to insured unemployed, the Public Employment Service (PES) which is responsible for the active labour market policy directed towards insured unemployed, and the municipalities that are in charge of the active labour market policy directed towards the unemployed on social assistance and those that are outside the labour market.

There is great variation in the administrative cost per unemployed and other recipients of labour market related public benefits – both between the three systems and within each system.

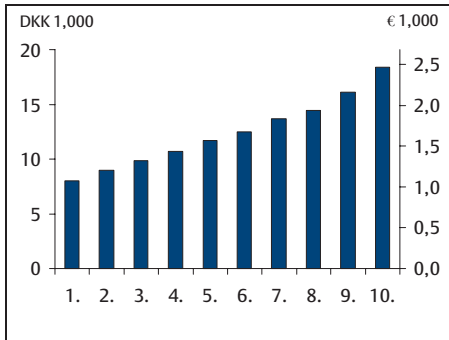
In the municipalities the expenditure on administration per recipient of social assistance and other labour market related public benefits varies from on average DKK 8,000 (€1,072) in the cheapest ten per cent of the municipalities to approximately DKK 18,500 (€2,480) in the most expensive ten per cent, *cf. figure 15.a*.

Having high administrative costs per unemployed does not necessarily imply a less efficient effort, since the differences in expenditure could correspond to differences in the effects of the effort. However, there does not appear to be any systematic correlation between a summary measure of the cost-effectiveness of the employment effort and administrative expenditures.

Even if there is substantial uncertainty in the figures for expenditure as well as effect, the considerable variation indicates a potential for increased cost-effectiveness in the municipalities.

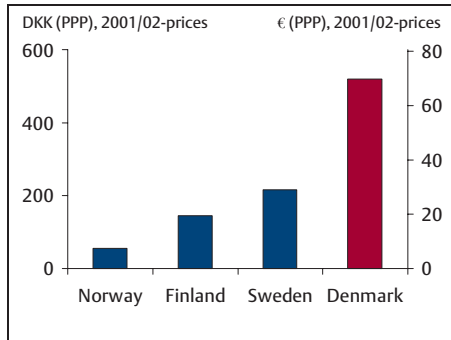
The same general conclusion can be drawn in relation to the PES-system.

Figure 15.a. Standardised administrative costs in municipalities per recipient of labour market related public benefits, 2003



Source: Survey on human resources in the employment effort of the municipalities, and the Directorate General for Employment and Placement.

Figure 15.b. Administrative cost per transaction in the Nordic unemployment insurance funds, 2001/2002



Source: The respective ministries of employment in Norway, Finland, Sweden and Denmark.

A considerable variation in the administrative costs can be detected also concerning the unemployment insurance funds – even after allowing for differences in the volume and complexity of work. Furthermore, no systematic correlation between administrative costs and quality in the effort can be found, which indicates that a number of the unemployment insurance funds could perform the same functions cheaper while keeping quality constant. Finally, an international comparison suggests that the administrative costs in the Danish unemployment insurance funds are substantially higher than in the other Nordic countries, *cf. figure 15.b.*