

# WORKING PAPERS IN ECONOMICS

---

No. 02/06

JON MAGNUSSEN, TERJE P. HAGEN AND  
ODDVAR M. KAARBØE

CENTRALIZED OR DECENTRALIZED? A  
CASE STUDY OF NORWEGIAN HOSPITAL  
REFORM



Department of Economics  

---

UNIVERSITY OF BERGEN

## **Centralized or decentralized? A case study of Norwegian hospital reform**

Jon Magnussen<sup>a\*</sup>, Terje P. Hagen<sup>b</sup> and Oddvar M. Kaarboe<sup>c</sup>

February, 2006.

<sup>a</sup> Department of Public Health and General Practice, NTNU, Medisinsk teknisk forskningscenter, NO-7489 Trondheim, Norway and Health Organization Research Program Norway (HORN). E-mail: [jon.magnussen@ntnu.no](mailto:jon.magnussen@ntnu.no)

<sup>b</sup> Institute of Health Management and Health Economics, University of Oslo, P.O.Box 1089 Blindern, NO-0317 Oslo, Norway, and Health Organization Research Program Norway (HORN). E-mail: [t.p.hagen@medisin.uio.no](mailto:t.p.hagen@medisin.uio.no)

<sup>c</sup> Health Economics Bergen (HEB), University of Bergen, Department of Economics, Fosswinkelsgt 6, NO-5007 Bergen, Norway. E-mail: [oddvar.kaarboe@econ.uib.no](mailto:oddvar.kaarboe@econ.uib.no)

\* Corresponding author

## **Abstract**

In recent years, decentralization of financial and political power has been perceived as a useful means to improve outcomes of the health care sector. Such reforms are often a result of fashion, rather than being based on knowledge of “what works”. If decentralization is the favored strategy in health care, studies of countries that go against the current trend will be of interest and importance as they provide information about the potential drawbacks of decentralization. In Norway, specialized health care has recently been recentralized. In this paper, we review some of the evidence now available on its economic effects. The most striking observation is that recentralization did not affect the variables related to cost containment and soft budgeting.

*Keywords:* Health care system, decentralization, recentralization, Norway.

## **1. Introduction**

The design of a health care system involves decisions about models of financing, producing and distributing services. Examination of OECD countries reveals large differences in the way health care systems are organized and financed. It is tempting to draw the conclusion that there is no clear “best” system.

In many countries, decentralization now seems to be the chosen management strategy (Saltman et al, 2005), although the rationale for choosing a decentralized model, as well as its practical implications, may vary. Reforms are often the result of fashion, rather than being based on knowledge of “what works”. If decentralization is the favored strategy in European health care systems, studies of countries that resist the current trend will be of interest and importance as they may provide information about potential drawbacks of decentralization.

One country that has moved against the decentralization trend is Norway, where specialized health care has recently been recentralized. Since the 1970s, the Norwegian health care system has been based on a belief that decentralization of both financial and policy authority to the county level would ensure cost-efficient and allocatively efficient solutions. In 2002, Norway abandoned this model and switched to one based on the belief that centralizing these powers to the state would facilitate the desired effects. In this paper, we examine more closely the processes leading to this reform, and review some of the evidence that is available on its economic effects.

Decentralization implies a transfer of financial or policy power from a central to a less central authority. Economists find arguments in favor of such a transfer in the fiscal federalism framework, of which the core argument is that public goods that are consumed locally should also be produced locally (Oates, 1999). Decentralized

solutions are believed to lead to increased welfare by allowing local authorities to act in accordance with local preferences and local cost structures. Adjusting to local cost structures ensures cost efficiency, adjusting to local preferences ensures allocative efficiency.

The pure fiscal federalism model is based on four assumptions: local goods, benefit taxation, mobility, and absence of spillovers (Tiebout, 1956; Musgrave, 1959). These assumptions are not always met in health care. In particular, spillovers may arise if variations in the availability and quality of services have adverse consequences for equity or if some locations neglect the public health consequences of their services. Moreover, medical education and clinical training are national public goods. Spillovers are frequently used to justify more centralized solutions in health care, which often include financial transfers from the central government to local governments (e.g., Gilbert and Picard, 1996; Seabright, 1996). With central funding, a *double common pool problem* might arise (Rattsø, 2002). That is, individuals will tend to claim excessive levels of local government services, and local governments will demand central funds from the common pool generated by general taxation. In such a situation, there will be extensive pressure on total costs, which is likely to result in soft budgeting (Kornai et al, 2003) and lower levels of efficiency. If in addition there is no benefit taxation on the local level, as in the Nordic context, these problems might be excessive (Lotz, 1998; Rattsø, 2002).

The possibility of local governments manipulating the system to obtain more than their fair share of the central funds depends on information asymmetry between the two levels of government about local production costs and local preferences. Gilbert and Picard (1996) argued that if central government has full information on production costs, then full centralization is optimal, whereas the reverse is true if the

central government has full information on local preferences (including the value attached to spillovers). If there is imperfect information on both costs and preferences, ambiguity arises. This ambiguity is reflected in the wide variety of health system solutions.

Put simply, health system design tends to be a trade-off between the value of possessing information about local production costs and local preferences and the value of internalizing spillovers. The current trend towards decentralization implies that focus is on the value of utilizing local information. However, distributional concerns are important in most countries, and are reaching the political agenda in several countries. Recent developments in, for example, Denmark and Sweden seem to support this view. Thus, systems are not “fully” decentralized, but remain a mixture of locally and centrally made decisions. With central government involvement in local actors, manipulation of decision-making might arise, and recentralization of financing powers and political powers might be considered. The Norwegian experience is an example of this, and provides useful information about what to expect of recentralization.

The rest of the paper is organized as follows. Section 2 describes the Norwegian health care system in more detail. In Section 3, we predict the effects of the recentralization, and contrast these with some empirical evidence. A concluding discussion is found in Section 4.

## **2. From de- to recentralization—a short history of the Norwegian health sector**

Norway has a population of about 4.5 million people, but in an area more than 1.5 times that of Great Britain. There are three political and administrative levels: the central state, 19 counties, and around 430 municipalities. The health care system is tax-based, gives universal access and is predominantly public. Historically, hospitals were built as the result of either private or public initiatives. No attempts were made to coordinate the distribution of hospital capacity until the Hospital Act of 1969. Following this Act, a few highly specialized hospitals became state-owned and thus the responsibility of the central government, and the remaining hospitals became county-owned and thus the responsibility of the 19 counties. General practitioners (GPs) and primary care were the responsibility of the municipal level. The Hospital Act of 1969 was an attempt to put the planning and running of a sector that previously had been subjected to few centralized decisions into a national perspective (Hansen, 2001). Thus, the Act laid out the dualism of the Norwegian health policy: a decentralized responsibility within a system of centralized planning.

The choice of the counties as the level of government responsible for hospitals was based primarily on a wish to place the responsibility for hospitals at one administrative level. This was also reflected in the financing system, as the central government reimbursed the counties retrospectively for actual expenses related to hospital services. The financing system changed in the 1980s, when counties received reimbursement through population-based block grants. By then, the county model was more clearly based on the rhetoric of fiscal federalism: Counties would presumably be more responsive to the needs and preferences of the population and be better suited to

run hospitals efficiently because of better information about local costs. Cross county differences would in this setting imply cross-country variations in preferences or cost structures. The county tax rate on individuals was fixed by parliament, implying a centralized financing system. This is in contrast to the pure model of fiscal federalism. The role of the state was limited to financing and planning.

In the period up to the hospital reform in 2002, the simple decentralized model was both challenged and modified along two dimensions: regionalization and financial reforms.

*Regionalization:* The small size of the population in some counties combined with large geographical distances provided opportunities for economies of scale through centralization. The country was divided into five health regions in 1974, with one teaching hospital in each region. The regional level did not have any formal authority, but was merely a way of identifying larger geographical areas that needed to exploit scale effects. Regional cooperation was for many years limited, and the hospital sector was characterized by duplication of services (Magnussen, 1994). In recognition that counties would not voluntarily cooperate, regional cooperation was deemed mandatory in 1999 (Ministry of Health and Social Services, 1998).

*Financial reforms:* From 1980, counties and hospitals were given annual global budgets. The transfers of funds from the state to the counties were sector specific until 1986, when counties were given a general grant in line with the (central) political goal of local prioritization of different tasks. By the early 1990s, central financial involvement increased, with parliament repeatedly providing extra funds. At the same time, there was increased frustration with the counties' inability to cope with long waiting lists. In 1997, activity-based financing (ABF) was implemented in the Norwegian hospital sector on a full-scale basis. A portion of the block grant from the



state to the county councils was replaced by another grant proportional to the number and composition of hospital treatments (cf Biørn et al, 2003).

The introduction of ABF was followed by a substantial increase in the number of patients treated and a reduction in waiting time: from 1997 to 2001 the average yearly increase in the number of treated somatic inpatients was about 2.2%, an increase from the average yearly growth of about 1% between 1990 and 1997 (Biørn et al, 2003; Kjerstad, 2003). Furthermore, Biørn et al (2003) found a 2% increase in technical efficiency because of the reform. Another effect of the change in the financing system was that the counties' share of total hospital expenses decreased substantially and in 2001 fell as low as 41% of total hospital expenses (Samdata sykehus, 2002). Finally, counties started to run deficits, partly because the ABF did not fully cover marginal costs (the reimbursement rate was between 40% and 50% of the standard national cost per diagnosis-related group [DRG]). The net operating surplus as share of county revenues increased from a 3.1% surplus in 1995 to a 1.8% deficit in 2001 (Ministry of Local Government and Regional Development, 2003).<sup>1</sup>

A central characteristic of the county model was vertical fiscal imbalance: while demand decisions were decentralized, financing remained centralized. Counties could not levy any taxes to fund their health services; income was given in the form of a fixed tax base, activity-based financing of hospital services and a block grant from the central government. Moreover, increased production led to larger deficits and claims for supplementary funds. In particular, both the opposition party in parliament and shifting minority governments responded positively to these claims. County councils and hospitals interpreted the supplementary funds as a signal of softer budget

---

<sup>1</sup> The net operating profit shows how much the counties have at their disposal after working expenses, interest and repayments are paid.

constraints and the central government provided supplementary funds in annual budgets. It has been argued that increased intervention led to lack of transparency in the financing system and a blame game over the responsibility for increasing deficits at county level. This eroded the trust between central authorities and the county councils (Hagen and Kaarboe, 2005).

Thus, at the turn of the century little was left of the original decentralized model. Regional cooperation had been made mandatory, the introduction of ABF meant that most funds came directly from the state, and soft budgeting seemed to be the prevailing model. Finally, rather than variations between counties being regarded as the result of local governments' responses to variations in local preferences, these were increasingly viewed as an undesirable feature of the system. The chosen policy was to recentralize.

The 2002 Hospital Reform consisted of two main elements (Ministry of Health and Social Service, 2001). First, and most importantly, the central government assumed responsibility for all somatic and psychiatric hospitals and other parts of specialist care. As a result, about 100,000 employees or 60,000 person-years and nearly 60% of county councils' budgets were transferred from the counties to the state. Second, specialized health care was organized in five regional health enterprises (RHE), under the Minister of Health.

These two elements of the hospital reform imply a recentralization of the hospital sector. Ownership was transferred to the state, the minister assumed responsibility and the organizational unit for coordination and steering is now one of five bodies (as opposed to the 19 counties). However, the second element of the reform represents elements of decentralization. Both the health regions and the hospitals are now organized as health enterprises. In the terminology of the public

administration literature, this implies a change from devolution (to a lower political level) to bureaucratization (to an independent lower administrative level). The argument for choosing enterprises and not the directorate model is related to the aim of having politicians at arm's length. The hospitals and clinics were merged into 42 (local) enterprises. This number was later (in 2003) reduced to 32. At the time of writing, both the number of regional and local enterprises is still under consideration.

### **3. Reform effects**

Three reform goals were very clearly stated: to harden budget constraints by reducing or removing supplementary funds granted by parliament during the fiscal year, to improve technical and cost efficiency, and to reduce waiting times (Ministry of Health and Social Service, 2001). In this section, we discuss the extent to which the hospital reform seems to have been an efficient policy tool for reaching these goals.

*Budget constraints.* The problems of fiscal irresponsibility and soft central budget constraints are covered by a growing literature (Kornai, 1986; Kornai et al, 2003). The soft budget constraint (SBC) phenomenon occurs if a payer organization is ready to provide financial support to its subordinate in case of financial trouble. The problem is addressed in several contexts, both for state-owned enterprises, as in Kornai's work, and for federations (Wildasin 1997, Inman 2001).

Theoretically, soft budget constraint implies that the hospitals' profitability constraint is not binding. If one assumes that hospitals, or their decision-making agents, (partly) care about patients' benefits from treatment, a soft budget constraint implies that hospitals face incentives to provide treatments to patients as long as their benefits are positive. Given that (most) patients on waiting lists receive an expected positive benefit from treatment, all hospitals that face a soft budget constraint will

respond by increasing their production without caring for costs. One corollary is thus that the softer the budget constraint, the larger the increase in production. Given that the marginal costs are increasing (e.g., because of capacity constraints), the rise in input prices should be larger, and thus the smaller the improvement in cost-efficiency, the softer the budget constraint.

According to the SBC theory, inefficiency can be reduced if the payer can credibly commit (ex ante) not to bail out. Much of this literature is therefore engaged in investigating methods for hardening budget constraints (see e.g., Kornai et al, 2003). To our knowledge, none of the suggested methods supports centralization of ownership as a method for providing harder budget constraints. The question is whether combined centralization of ownership and reorganization of hospitals as enterprises may be such an avenue. The argument is as follows.

One important element of the hospital reform was the removal of the regional politicians as hospitals were organized as enterprises. Leaders at the regional level are not recruited in local election processes, but are professionally trained leaders recruited by the boards of the regional enterprises, which in turn are appointed by the Ministry of Health. As the new leaders' local electoral responsibility is weakened, they may be more willing to comply with central government policy than the former regional political elites. If this is the case, goal conflicts between the central government and the hospital sector (or at least the regional enterprises) may be reduced. This may weaken the demand for supplementary funds. On the other hand, enterprises run by professional administrators may have low political legitimacy. If this is the case, national politicians may overturn the (structural) decisions these administrators take, which will maintain the goal conflicts.

Empirically, the effects of the reform on budget constraints can be revealed by

looking at four parameters: the extent of resource growth, the amount of extra funding, the relationship between actual and planned activity, and the extent and size of budget deficits. These are presented in Table 1. Three year averages for “before” and “after” the reform are shown in Figure 1.

Table 1 about here,

Figure 1 about here

We note that real growth in resources is higher in the period after the reform, as is the share of total costs coming from extra funding. Projected activity growth is lower, reflecting that the drive for activity increase was no longer in the system when the reform took place. Interestingly, however, actual activity growth is higher in the period after the reform, indicating that the regional enterprises are less responsive to the stated policy goals for activity growth than the counties were. We have no information about deficits before the reform, but note that there were deficits in all three years after the reform. Four out of five RHEs are running deficits, while one has had an approximately balanced budget every year after the reform. This indicates that there might have been different management focus in the RHEs. Second, the size of the deficits is large. Accumulated deficits are now around 7% of total income. On top of this comes a substantial accumulated debt used to finance new investments. The main conclusion so far is that the total costs increase (at least) at the same rate as before the reform, and budgets are even softer now than they were before.

*Efficiency.* A goal of increased efficiency was primarily intended to be reached by a more efficient hospital structure. Theoretically, there are three potential sources

of scale economics. Larger firms (or hospitals) often have a cost advantage because they can spread fixed costs across a greater volume of output. Larger firms can also enjoy lower costs through superior inventory management. Finally, larger firms can also enjoy cost savings by securing purchasing discounts from suppliers.

Although there clearly is a scale economics rationale for mergers, merging hospitals are unlikely to realize the benefits unless they integrate operations. Several studies have shown that mergers did not result in substantial clinical integration and thus failed to generate substantial saving (Kjekshus and Hagen, 2003). Yet, mergers combined with a reduction in the number of acute hospitals may lead to higher efficiency, measured both in terms of technical and cost efficiency.

Measures of technical efficiency and cost efficiency are calculated in Norway on an annual basis. Figure 2 shows the development in these measures for the period 1999–2004.

Figure 2 about here

Comparing the period 1999–2001 (“before”) with 2002–2004 (“after”), we see that whereas cost on average efficiency fell by 0.7% per year before the reform, it increased by an annual average of 2.3% after. Similarly, technical efficiency increased by an annual average of 0.4% before the reform compared with 2.5% after. Efficiency certainly seems to have increased after the reform.

There may be several factors behind the change in efficiency. We cannot conclude that this is due to structural changes, because the study period is too short and this is a purely descriptive measure of efficiency. It is tempting to speculate, however, that the change in efficiency may be related to the change in the share of ABF in this period. This share was set at 50% in 1999, increasing to 55% in the

period 2000–2002, then to 60% in 2003; it fell to 40% in 2004. An increased share of ABF is likely to lead to higher levels of measured efficiency for two reasons. First, a high share of ABF will give stronger incentives to perform efficiently, so technical efficiency should increase (Biørn et al, 2003). Second, a high share of ABF will give incentives both to increase DRG-creep and to select patient groups with a high price/cost ratio. There is strong evidence in Norway of DRG-creep in the period after the reform (Petersen, 2003), and this may explain a substantial proportion of the changes in measured efficiency.

*Waiting times.* The third goal was related to waiting times. These are shown in Figure 3.

Figure 3 about here

According to the National Patient Register, the reduction in waiting time in the somatic section in recent years is caused by several factors: (i) increased activity, (ii) cleaning up (e.g., removing patients already being treated) the waiting lists, and (iii) a new and improved way of reporting waiting list data. A closer look at the data (Figure 4) reveals that the main reduction in waiting time for somatic treatment took place between June/July 2002 and June/July 2004. The figure also reveals that the reduction in waiting time started before the hospital reform of 2002, probably as early as the last quarter of 2000. By the second quarter of 2004, the waiting time seems to have stabilized. There can be several reasons for this. First, seasonal adjustments may account for the stabilization, as the summer is a low activity period. Second, the government decided to reduce the share of activity based financing from 60% to 40% from January 2004 to reduce the overall growth in somatic care.

For psychiatric care, the picture is more fragmented. The waiting time for

children requiring psychiatric hospital care has fluctuated somewhat and was at the same level in mid 2004 as in the autumn of 2002. This trend is explained by (i) a large increase in the number of referrals for children, and (ii) more complete registration at the psychiatric institutions. For adult patients awaiting elective psychiatric care the pattern is relatively similar to that of somatic care.

#### **4. Concluding comments**

We have argued that the degree of (de-)centralization will be a trade-off between the value of adjusting production to local costs and preferences and the costs associated with spillovers and soft budgeting. The recentralization of the Norwegian specialized health care services can be interpreted as a reaction to years of playing the blame game and frustration with the lack of coordination between counties. Thus, the benefits of local decision-making were clearly viewed as smaller than the costs of spillovers and soft budgeting. The question is whether recentralization is an effective strategy to obtain control over health care costs and improve efficiency.

Little of the evidence presented here suggests that the reform has had an immediate effect on the key economic variables. Instead, deficits continue to grow, the extra funds from parliament remain substantial, and only recently has there been an indication that the RHEs are adjusting their activity to the level intended by parliament. Efficiency seems to have increased, but there are questions raised about how much this is the result of increased DRG-creep and how much is a real increase in efficiency.

An interesting observation is that the blame game seems to have stopped. When the central government is the sole owner of hospitals, this implies that the continuous deficits are the responsibility of the management and boards appointed by



the same government. In theory, there should be no fiscal imbalance; in practice, demand decisions are still taken on a hospital (departmental) level, and the bill passed on to the RHEs and subsequently to parliament.

The discussion in this paper is based on the years 2002–2004. Evidence from 2005 is not yet available, but it is already clear that there was also a substantial deficit and that realized activity growth was higher than planned growth. However, one interesting change is being implemented in 2006. Politicians are being “reinstated” on the boards of both the regional and local health enterprises. This change is initiated by the newly elected majority government (consisting of The Labor Party, the Socialist Left Party and the Centre Party). It is interesting to note that politicians are appointed with an eye to both their party affiliation and to the district they represent. Two scenarios seem possible: either the reinstatement of politicians will lead to the RHEs acting more as cooperating counties, limiting the potential for efficiency enhancing decisions, or local politicians will act in congruence with central politicians, and enforce a regime with stricter budget control.

Can we, based on the Norwegian experience, draw conclusions about the merits of recentralization? The most striking observation would seem to be that recentralization did not affect the variables related to cost containment and soft budgeting. We propose three factors that can explain this. First, choosing an enterprise model has arguably preserved the double pool problem. There is still excessive local demand, and local health enterprises tend to expect funds from the regional health enterprises, which in turn are funded from the common tax pool. Second, there is an element of activity-based financing from the central government to the regional health enterprises, so the costs of increased activity are not fully internalized in the RHEs. Thirdly, there have been minority governments since the

reform, so the opposition will tend to increase the government's initial health budgets.

Inman (2001) has noted that in situations with pressure on costs, the only line of defense is hard budget constraints. The Norwegian experience suggests that recentralization in itself will not be sufficient to hold that line.

## References

- Biørn E, Hagen TP, Iversen T, Magnussen J. The effect of activity-based financing on hospital efficiency: A panel data analysis of DEA efficiency scores 1992–2000. *Health Care Manage Sci* 2003;6(4):271–83.
- Gilbert G, Picard, P. Incentives and optimal size of local jurisdictions. *Eur Econ Rev* 1996;40(1):19–41.
- Hagen TP, Kaarboe O. The Norwegian Hospital Reform of 2002: Central government takes over ownership of public hospitals. *Health Policy*. Forthcoming.
- Hansen FH. Sykehusstruktur i historisk perspektiv. In FH Hansen (ed): *Sykehusstruktur i endring*. SINTEF report STF78 A015017. Trondheim, Norway, 2001. (Hospital Structure in a historical perspective).
- Inman R. Hard and soft budget constraints in the United States. In J Rodden, G Eskeland and J Litvack (eds.) *Fiscal federalism: quantitative studies*. Chicago: University of Chicago Press, 2001.
- Kjekshus LE, TP Hagen. Ga sammenslåinger av sykehus bedre effektivitet? Erfaringer fra Norge i 1990-årene. *Tidsskrift for velferdsforskning*, 2003;6(1):3–16. (Did mergers of hospitals increase efficiency? Evidence from Norway in the 1990s.)
- Kjerstad E. Prospective funding of general hospitals in Norway—Incentives for higher production? *Int J Health Care Finance Econ* 2003;4:231–51.
- Kornai J. The soft budget constraint. *Kyklos* 1986;39(1):3–30.
- Kornai J, Maskin E, Roland G. Understanding the soft budget constraint. *J Econ Lit* 2003;42(4):1095–136.
- Lotz J. Local government reforms in Nordic countries; theory and practice. In J Rattsø

- (ed.): Fiscal federalism and state–local finance. The Scandinavian experience. Cheltenham: Edward Elgar, 1998.
- Magnussen J. Hospital efficiency in Norway. A non-parametric approach. PhD dissertations in Economics no 6. University of Bergen 1994.
- Ministry of Health and Social Services. Om lov om spesialisthelsetjenesten m m Ot.prp. nr. 10 (1998–99), 1998. (Specialized Health Care Act.)
- Ministry of Health and Social Services. Om lov om helseforetak m.m. Ot.prp. nr. 66, (2000-01), 2001.(Act of State Owned Health Enterprises Act.)
- Ministry of Local Government and Regional Development. Rapport fra Det tekniske beregningsutvalg for kommunal og fylkeskommunal økonomi. Rundskriv H-8/03 April 2003. (Circular letter. Counties' economic situation.)
- Musgrave, R. The theory of public finance, New York: McGraw Hill, 1959.
- Petersen SØ. Endring i DRG-indeks 2001–2003. Report STF78 A045803, SINTEF Health Research, Trondheim, 2003. (Change in DRG index 2001–2003.)
- Oates WE. An essay on fiscal federalism. J Econ Lit 1999;XXXVII:1120–49.
- Rattsø J. Fiscal controls in Europe. A summary. in B Dafflon (ed.), Local Public Finance: Balanced Budget and Debt Control in European Countries, Cheltenham: Edward Elgar, 2002.
- Saltman R, Bankauskaite V, Vrangbæk K. Decentralization in health care—strategies and outcomes. European Observatory on Health Systems and Policies, 2005. [http://www.euro.who.int/observatory/Studies/20031112\\_1](http://www.euro.who.int/observatory/Studies/20031112_1)
- Samdata Sykehus Somatikk. 2002. Trondheim, Sintef Unimed. (Samdata hospital reports.)
- Seabright, P. Accountability and decentralization in governments: an incomplete contracts approach. Eur Econ Rev 1996;40(1):61–89.

Tiebout, C. A pure theory of local government expenditures, *J Polit Econ* 1956;64:416–24.

Wildasin DE. Externalities and bailouts: hard and soft budget constraints in intergovernmental fiscal relations. World Bank policy research papers 1843. Washington DC: World Bank, 1997

Table 1: Development in a number of economic variables three years before and three years after the reform.

	1999	2000	2001	2002	2003	2004
Real growth in resources %	4.4	1.5	4.8	4.4	4.8	2.6
Extra funding, % of income	2.1	4.3	1.9	4.1	4.1	1.7
Actual vs. projected activity growth	3.2	0	2.5	4.7	5.6	1
Deficits, % of income				-1.5	-3.2	-2.9

Figure 1: Economic variables: “before” and “after”.

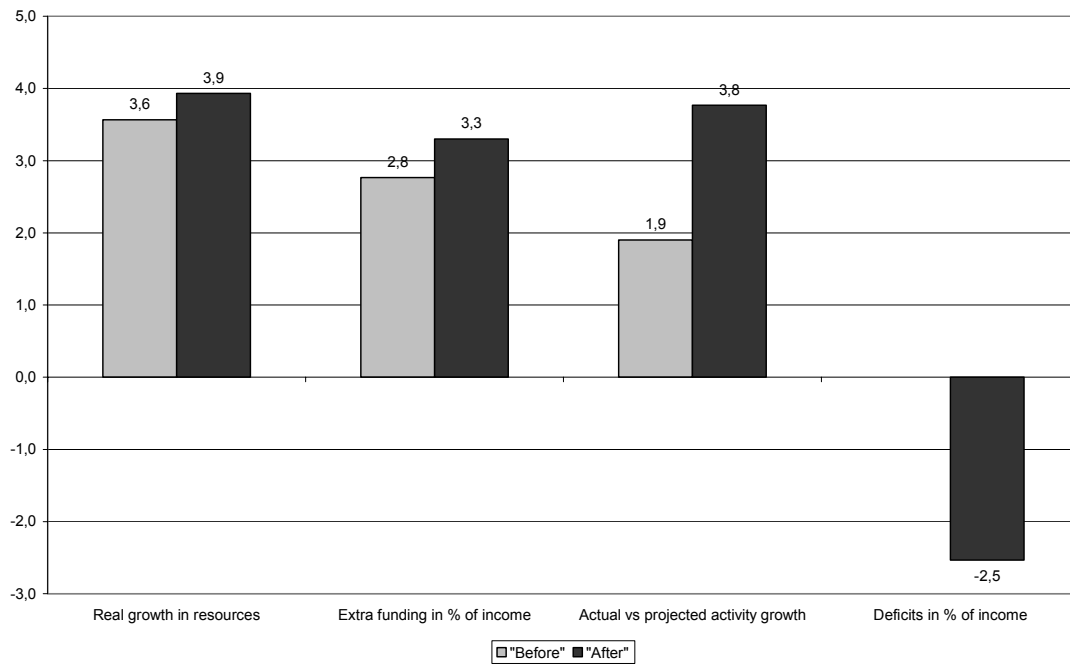


Figure 2: Annual changes in efficiency “before” and “after”.

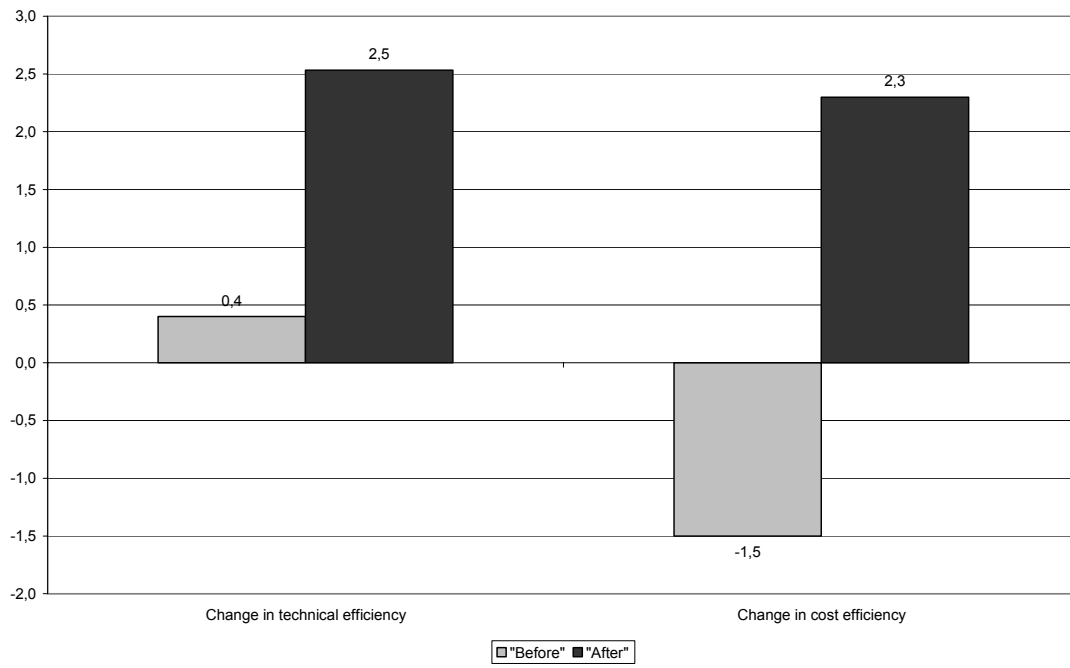
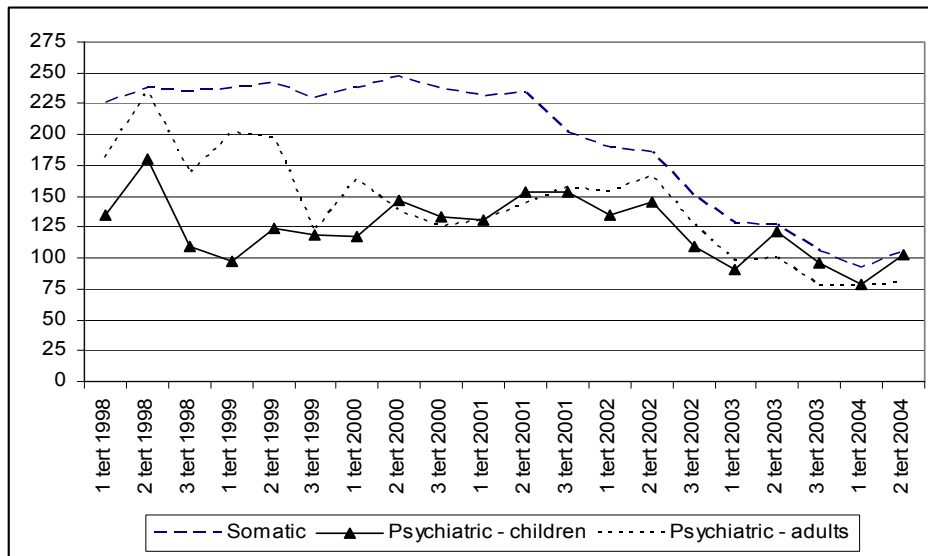




Figure 3: Average waiting time (days) for elective treatment of major patient groups, 1998–2004.



Department of Economics  
University of Bergen  
Fosswinckels gate 6  
N-5007 Bergen, Norway  
Phone: +47 55 58 92 00  
Telefax: +47 55 58 92 10  
<http://www.svf.uib.no/econ>