

# The transition from over-the-counter to self-service sales of alcoholic beverages in Norwegian monopoly outlets

Implications for sales and customer satisfaction

## ■ Introduction

One of the key instruments of Norwegian alcohol policy is the state-run retail monopoly for strong beer, wine and spirits (Vinmonopolet). Through the monopoly system the authorities want to curb the consumption of alcohol by regulating the number of sales outlets and preventing private interests from making a profit on retail trade in strong alcoholic beverages. Apart from Denmark, all the Nordic countries, i.e. Finland, the Faroe Islands, Iceland and Sweden, maintain a state-owned retail monopoly system for selling strong alcoholic beverages. No other European country has such retail alcohol monopolies (Örnberg & Ólafsdóttir 2007). In the USA for a long period 18 “control-states” maintained wholesale monopolies and retail monopolies on sales of spirits or spirits and wine by the bottle (Room 1987). In 2006, 12 control-states still had a retail monopoly on spirits, of which four had also monopolized retail sales of wine. All these states have maintained their wholesale monopolies (Miller et al. 2006). In Canada, there are governmental monopolies which run retail and wholesale monopolies in all provinces except Alberta, which privatized the alcohol trade in 1993 (Alcohol Policy Network 2006).

## ABSTRACT

Ø. Horverak: The transition from over-the-counter to self-service sales of alcoholic beverages in Norwegian monopoly outlets: Implications for sales and customer satisfaction

### ■ AIMS

To study the impact of the introduction of self-service at the Norwegian alcohol monopoly outlets.

### ■ DESIGN

Sales at outlets where self-service was introduced were compared with sales at outlets that remained over-the-counter. A regression model of the ARIMA type was used to estimate the gross effect on sales. Customer interviews were employed to correct for the effect on sales of purchases by new customers who were attracted to the self-service outlets. Changes in public opinion were gauged by means of nationwide interview surveys and by interview surveys of representative samples of the outlets' customers.

### ■ RESULTS

Sales rose by a net average of about 10 per cent in terms of pure alcohol. The change in method of sale was greatly appreciated by the customers, especially by customers patronizing the self-service shops. Among these, the sentiment in favour of self-service shifted from 61 to 96 per cent during the experiment. For many customers, the sentiment in favour of self-service was strong enough to result in changes in shopping habits. This was evident in towns where customers were allowed

to choose between the two forms of service. In these towns sales increased heavily in self-service outlets while it decreased in remaining over-the-counter outlets.

#### ■ CONCLUSIONS

The introduction of self-service in what were previously over-the-counter outlets led to an increase in alcohol sales, at the same time as self-service alcohol sales proved popular among the alcohol monopoly's customers. Despite the fact that the introduction of self-service brought a substantial increase in alcohol sales, there was a desire in political quarters to expand the scheme. By the end of 2006, 198 of Vinmonopolet's total of 211 shops had been converted to self-service.

#### KEYWORDS

■cohol policy, self-service, alcohol sales, customer satisfaction, Norway

The difference in the way that wine and spirits and other commercial goods are sold prevents these beverages from becoming as commonplace as other generally available products. The state-run monopoly system also makes it easier to ensure effective social control of the sale of strong alcoholic beverages, both because the earnings of those employed in Vinmonopolet's outlets in no way depend on turnover volumes and because state ownership makes it a simple matter to retain sales methods that are geared to keeping a check on who buys alcohol. In 2002 some 19 000 customers was denied the right to buy alcohol either because they were too young or under the influence of drink or passing alcohol to minors. However, during 2006 the number of denials of service had fallen to a little more than 13 000; and a recent study from Norway questions that the state monopoly shops maintain a more efficient control with minors than privately owned grocery stores and pubs and restaurants (Rossow & Storvoll 2007).

During the 1990s the perception of Vinmonopolet as an instrument of alcohol policy changed (Horverak 2001; Jacobsen 2005; Myklebust 2006). Whereas Norwegian politicians had previously given most emphasis to alcohol policy considerations when establishing new retail outlets, a consumer policy dimension now played a part in deciding where wines and spirits should be sold. Rather than assert the principle that wine and spirits should not be readily available, politicians now advocated that everyone should have a reasonable opportunity to buy wine and spirits. People should themselves be entitled to choose what to buy and consume in the way of wine and spirits; the state's task would not be to place obstacles in the way of consumers' freedom of choice. The crucial point for the politicians was no longer to prevent consumers from making wrong choices, but to enable them to make a choice.

In line with this political change, the Norwegian Parliament decided that a number of new state monopoly shops should be built, mainly to make sure that people all over the country had a possibility of buying wine and liquor without too high transaction costs. Consequently, while only 22 new shops were opened during the 17 years from 1980–1997; the Monopoly established 97 new outlets during the 9 years from 1997–2006. From 1997 to 2006, the number of outlets selling wines and spirits increased from 114 to 211. During the same

period the sales hours both at on-premises and off-premises outlets had been extended (Örnberg & Ólafsdóttir 2007), and the number of bars, cafés and restaurants selling alcoholic beverages increased from 5970 in 1997 to 7256 in 2006.

This new, consumer-oriented policy had strong support in the monopoly's new management. In 1987, Einar Joys was appointed new general manager, and he emphasised that the only way of surviving in the new, liberalistic economy, was to have satisfied customers. "Our task is not to sell as much as possible", he said, "but to sell what we sell in the best possible way".<sup>1</sup> The new, consumer-friendly policy succeeded. As a matter of fact the monopoly succeeded so well that Vinmonopolet for the year 2006 won the prize "Service Company of the Year" (Vinmonopolet 2006).<sup>2</sup> And, in line with what the management, according to Myklebust, had anticipated, selling in the best possible way did not hamper sales: from 1990 to 2006 gross sales increased by 40 per cent allowing for the increase in the price level.

The consumer-oriented policy was shared by the other Nordic monopoly countries (Örnberg & Ólafsdóttir 2007). Sutton and Tigerstedt (2000, 194) assert that consumer friendly policy forces were also active during the period of introduction of self-service in Finnish monopoly outlets. Then it was argued that "self-service, in contrast [to over-the-counter (ø.h)], is likely to respect the self-determination and independence of customers". In 1998, the Norwegian Parliament decided to let Vinmonopolet introduce self-service into some of its shops. Until 1998 sales of wine, spirits and strong beer had to be over-the-counter in Norway. The introduc-

tion of self-service was meant as an experiment and the first self-service shops were opened during the autumn of 1999. The Parliament should take a final decision after the effects of the change were evaluated by the Norwegian Institute for Alcohol and Drug Research.

In this article I examine three issues raised by the introduction of self-service sales:

- Did the introduction of self-service lead to a change in sales?
- Did the customers report that they preferred self-service or over-the-counter sales?
- Did the customers actually prefer self-service or over-the-counter sales?

### **Earlier studies of the introduction of self-service in alcohol shops**

A few studies have focused on changes in sales during a transition from over-the-counter to self-service outlets selling alcoholic beverages. The most important are Skog's studies of changes in sales at Sweden's state-owned alcohol monopoly, Systembolaget, when it introduced self-service sales of beer on a trial basis at some of its outlets in the 1980s (Skog 1991), and when it introduced self-service wine and spirits outlets at the start of the 1990s (Skog 2000).

Skog's studies did not enable him to draw any reliable conclusion on how the introduction of self-service had affected beer sales. However, he found that introducing self-service had probably led to a net increase of about 10 per cent in wine sales and 6 per cent in sales of spirits (Skog 2000). Our study uses the same design as Skog's to make the results comparable.

In addition to Skog's studies, Fiilin and Virtanen (1984) have conducted a study based on Finnish data, while Smart (1974) compared sales at an over-the-counter store in Toronto with sales at a self-service store in the same city. Both these studies have methodological weaknesses, and their results have little general validity.

Smart compared sales in two shops after the introduction of self-service in a shop in Toronto, and found that customers in the self-service store purchased more bottles per visit than customer who patronized the over-the-counter store. However, since we do not know anything about the pattern before the introduction of self-service, it is impossible to draw any conclusions about sales development from this study. Fiilin and Virtanen compared sales development in two Finnish towns where one introduced self-service while the other remained over-the-counter. They found no effect, but their time series cover only five observations and the study lacks a rigorous method.

Finally, Horverak (2002) looked at sales of strong beer in Norway after grocery stores selling strong beer by self-service had to place it behind the counter from July 1990 till January 1993, when it was confined to the state monopoly's shops. He found that the change from self-service to over-the-counter service resulted in a 40 per cent decrease in sales of strong beer during this period. However, the prognosis is uncertain due to lack of data;<sup>3</sup> and the results may also have been influenced by the fact that most of the grocery stores did little to organize sales of strong beer in a customer-friendly way after it was placed behind the counter.

## Data and method

### ■ Changes in sales

With respect to change in sales I carried out a study of the type used by Skog in Sweden. Skog employed a research design based on matched pairs of outlets. One outlet – the experimental shop – introduced self-service, while the other – the control shop – retained counter-service. Based on the difference between the trend in sales between the experimental shop and the control shop, it was possible to estimate the impact of self-service on turnover.

Skog's research design also leant itself to the Norwegian case, not least because using the same method would ensure optimal comparability between the results for Sweden and Norway.

In order for such a method to serve its purpose it is crucial that both the experimental shop and the control shop are as alike as possible in terms of the factors under consideration, and that the control shop is not affected in the period of the study by those factors that the experimental shop are exposed to, or vice versa.

Matching of the outlets was done in conjunction with Vinmonopolet. Hence, we did not receive a randomised selection of self-service shops as in the case of Sweden; rather, the shops were chosen on the basis of expediency. We discounted randomised shop pairings since we did not want the experimental category to contain shops that would need to be re-located in connection with a switch to self-service because the old premises were unsuited to the new method of sale. Neither did we want to risk including in the study those control shops that faced major planned changes in terms of location, opening hours and increased floorage. Finally, I wanted to

**Table 1.** Pearson correlations of sales volumes before introduction of self-service and travelling time by car from the self-service store to the nearest monopoly outlet. Monthly data, January 1995-June 1999.

| Shop pair          | Self-service introduced | Correlations in sales volume |      |             | Travelling time |
|--------------------|-------------------------|------------------------------|------|-------------|-----------------|
|                    |                         | Spirits                      | Beer | Table wine# |                 |
| Larvik/Horten      | 19 Oct 1999             | 0,90                         | 0,97 | 0,83        | 19 min          |
| Molde/Lillehammer* | 28 Nov 1999             | 0,99                         | 0,98 | 0,96        | 1h 12 min       |
| Fagernes/Gran      | 3 Nov 1999              | 0,81                         | 0,96 | 0,81        | 48 min          |
| Fauske/Mosjøen     | 24 Sep 1999             | 0,98                         | 0,98 | 0,99        | 1h 02 min       |
| Narvik/Steinkjer   | 24 Nov 1999             | 0,96                         | 0,99 | 0,99        | 1h 51 min       |

\*April 1995–June 1999 #Ordinary differences

make sure that none of the shops included in the survey were affected by new shops opened by Vinmonopolet in the two years the trial lasted. Such events might lead to uncertainties when evaluating the effect of self-service, outweighing the statistical-methodological benefits of employing a fully randomised sample.

Based on the criteria, we arrived at five pairs of outlets. Table 1 shows the location of the five pairs of outlets, the self-service shop being mentioned first; the date for introduction of self-service; the correlation between monthly sales in litres of beer and spirits in the period of January 1995 to June 1999, and the correlation between the differences in sales of wine in one month and the month before.<sup>4</sup> The table also shows estimated travelling time by car from the experimental shop to the nearest monopoly outlet. We see that the correlations both for volume of sales of spirits and beer and differences in volume of sales of wine are high. Based on this, sales at the control shops appear to be representative for sales at the experimental shops had they not switched to self-service.

With the introduction of self-service, we

expect turnover at the self-service shops to rise. Probably, after some irregularities during the opening month due to variation in the opening date, the introduction of self-service leads to a marked increase in sales in the period just after the change, after which it finds a new stable level. We are mainly interested in the lasting effect of the introduction of self-service, i.e. the effect on sales after the opening effect caused by curious customers who are not representative of the shop's customer base has faded. How long it will take for the full effect of the introduction of self-service to feed through to sales is uncertain. It is not likely that people will adopt new shopping habits immediately. Most people will probably take some time to establish a new shopping pattern. Since I found it important comparing the results of this study with the results of Skog's study from Sweden, I chose the same period as he did: 3 months are expected to pass after the opening month before a new shopping pattern is established. Skog chose this period because the effect of introducing self-service seemed to stabilize after about 3 months (Skog 2000, 96).

In order to compute the change in sales resulting from the introduction of self-service, I obtained monthly sales volumes for the period January 1995 to December 2001 for all experimental and control shops. I then employed a regression model in which monthly sales/difference in monthly sales at the self-service shop were the dependent variable and monthly sales/difference in monthly sales at the control shop plus three dummy variables were independent variables. The dummy variables were designed to capture, respectively, the changes in sales due to different opening date in the month self-service was introduced (dummy set to 1 in the opening month, else 0), the short-term effect of introduction of self-service due to new customers' curiosity represented by changes in sales in the three first months after the opening month (dummy set to 1 in the three months after the opening month, else 0) and the long-term or lasting effect, represented by changes in sales in the next two years (dummy set to 1 as from the fifth month after the month of introduction of self-service, else 0).

We assumed that the relationship between sales at the experimental shop and the control shop could be expressed by the following equation:

$$(1) E_t = A * K_t^\alpha * e^{\sum \beta_i d_i} * e^{N_t}$$

where  $E_t$  is sales at the experimental shop in period  $t$ ,  $A$  is a constant,  $K_t$  is sales at the control shop in period  $t$ ,  $\alpha$  and  $\beta_i$  are constants,  $d_i$  is the three dummy variables ( $i=1,2,3$ ) and  $N_t$  is a noise term.<sup>5</sup> The model (1) is logarithmically linear, and may be written:

$$(2) \ln E_t = a + \alpha \ln K_t + \sum \beta_i d_i + N_t$$

We used an ARIMA technique to take account of possible autocorrelation in the dataset (Box et al. 1994). ARIMA modelling entails inserting one or more filters such that the residual acquires a distribution known as "white noise". Vinmonopole's sales in a given month will primarily depend on sales in the previous month and on the time of the year. Sales of alcoholic beverages are markedly seasonal in Norway, peaking in holiday and festival periods. A "dual" autoregressive process is therefore present in which turnover depends on sales in the preceding month and in the previous season. The calculation programme employed in the analysis, TREND in the SPSS program package, enabled both types of autoregressive process to be taken into account.

If ARIMA models are to be employed the data have to describe a stationary process. One simple way to achieve this is to difference the data. In our case we needed to difference monthly sales of wine to get a stationary process (ordinary difference) while this was not necessary for beer and spirits.

The results of the ARIMA calculations provided estimates for the increase in sales after self-service was introduced. Part of this increase was due to an influx of new customers from other shops that retained over-the-counter service. However, our focal interest was what impact the introduction of self-service had on customers who patronized the shop both before and after it switched to self-service. Hence, gross turnover at the self-service shops needed to be reduced by the share of turnover derived from new customers.

To gain an impression of new customers' significance for sales in the self-service shops, we asked samples of customers in the experimental shops about their shopping habits one year after the introduction of self-service.<sup>6</sup> The interviews were done by staff members on every weekday during the last week of June 2000. The first customer entering the shop after a given hour was asked by a member of the staff whether he/she was willing to be interviewed.

The interviewers did not count the number of customers who refused to be interviewed but, according to reports from the interviewers, very few refused to participate in the study. However, it may be possible that some of the heaviest consumers were missing. The reason for this is two-fold: Firstly, since the interviewers were recruited from the staff, they might have a tendency to avoid interviewing customers they knew drank a lot. Secondly, people who drink a lot might not be willing to take part in alcohol studies; and especially when the study is carried out by people who usually sell them alcohol without any questions.

Once the interview with the first customer who said "yes" was completed, another interview was conducted with the next person willing to be interviewed. This continued until a predetermined number of interviews had been completed.<sup>7</sup> Based on their responses, the interviewees were divided into four categories: Old regular customers, new regular customers, old random customers and new random customers.

The customers were also asked how often they frequented the actual shop and the till-person, who gathered the questionnaires, noted the value of the purchase. As-

**Table 2.** Estimated shares of total sales accounted for by new customers

|           | Average share | Lci 95% | Uci 95% |
|-----------|---------------|---------|---------|
| Larvik    | 10.9          | 9.7     | 12.1    |
| Fagernes  | 11.0          | 8.7     | 13.3    |
| Molde     | 1.9           | 1.7     | 2.2     |
| Fauske    | 13.4          | 12.4    | 14.4    |
| Narvik    | 0.0           | 0.0     | 0.0     |
| All shops | 7.4           | 7.1     | 7.7     |

suming that the different group's estimated purchase during a year was representative of their part of the turnover at the actual shop, it was possible to calculate the share of total turnover that was accounted for by the new customers.<sup>8</sup> This share was deducted from the shop's total sales volume in order to estimate the actual significance of introducing self-service.

The new customers' estimated shares of the turnover after the introduction of self-service are shown in Table 2. Assuming that the alcohol content on average was the same in all groups' purchases, Table 2 represents at the same time the share of total alcohol sales by customers who did not frequent the shop before it changed to self-service. We see that the outlets in Narvik and Molde, which were located most far away from a neighbouring monopoly, had less visits from new customers.

**■ Customers' views on the introduction of self-service**

Two interview surveys were conducted to ascertain the population's views on the introduction of self-service at Vinmonopolet. First, an opinion poll was carried out among a representative sample of the Norwegian population. The first poll was carried out in June 1999, the second two

years later, in August 2001. The samples contained 1,012 and 1,000 persons respectively. Interviewees were asked whether they were in favour of, or opposed to, self-service at Vinmonopolet.

Second, samples of customers at self-service and over-the-counter shops were questioned on their views on the introduction of self-service.<sup>9</sup> The polls were carried out immediately prior to the start-up of the self-service experiment, and were repeated after about one year of self-service operation. A total of 3,700 to 3,800 customers were interviewed in each of the two years. Rather less than half comprised customers at over-the-counter shops, the remainder were customers at self-service shops.

The customers in the experimental and control shops were also asked to give the shop a score according to how satisfied they were with the shop and the shopping conditions. They were asked to rank the shop on a scale from 0 to 6, where 6 was the highest possible score.

#### ■ Customers' actual choice of method of sale

With a view to ascertaining how far customers' opinion on the introduction of self-service were matched by their actual behaviour, I examined sales in two large towns – Kristiansand and Trondheim – where self-service had been introduced at half of the shops, while the other half retained over-the-counter service. The citizens of these two towns had a genuine choice between shopping at a self-service or over-the-counter shop, and the trend in sales showed the adjustment actually adopted by customers in a situation in which they were able to choose between these two forms of shopping.

In Kristiansand, Vinmonopolet had two shops in the town centre, one of which was converted to self-service. In Trondheim there were four shops, two in the town centre and two in shopping centres in the outskirts. The two shopping centres were situated about 10 kilometres from each other on either side of the town, while the shops in the town centre were only a few hundred metres from each other. Two self-service shops were opened, one in one of the shopping centres and one in the town centre.

To ascertain the extent to which sales at the over-the-counter shop had transferred to the self-service shop, I calculated what sales would have amounted to had self-service not been introduced. The sales forecasts were computed on the basis of data for the period prior to the introduction of self-service. I employed a Box-Jenkins approach of the same type as when computing the effect of the introduction of self-service to estimate expected sales. Horten was employed as the control area for Kristiansand, and Lillehammer as the control area for Trondheim. The forecasts were based on sales in the period January 1995 to September 1999. For all alcoholic beverages sales in Horten and Lillehammer showed a high correlation with, respectively, sales in Kristiansand and Trondheim prior to the introduction of self-service ( $R^2$  from 0.88 to 0.96).

The forecasting model can be described by:

$$(3) \ln E_t = a + \alpha \ln K_t + N_t$$

where  $a$  and  $\alpha$  are constants,  $E_t$  and  $K_t$  are sales in, respectively, the experimental area and the control area in period  $t$ , while



$N_t$  is the noise term which is modelled using an ARIMA technique.

## Results

### ■ Changes in sales as a result of the introduction of self-service

I first calculated how the introduction of self-service affected gross turnover at the self-service shops and overall sales at all five shops. All the models contained the following ARIMA terms: MA1, AR1, SMA1 and SAR1. A presentation of all intervention model estimates including AR and MA-estimates, and Box-Ljung diagnostics for lag 12 and 24 are given in Table 3.

Table 3 shows that the introduction of self-service had a significant and positive effect on gross sales (sales before we adjust for sales accounted for by new customers) in all shops, and both for beer, wine and spirits. For the opening month the effect varied due to differences in length of closure time in connection with reconstruction and date of reopening. The differences between the effect on sales in the three months following the opening month and the following two years were relatively modest and, except for beer where the long-term effect were systematically larger than the short-term-effect, without any specific pattern. This means that the customers changed their shopping habits quickly; during a couple of months they had adapted to the new way of shopping for strong beer, wine and spirits.

Table 3 also shows the Box-Ljung statistics for lag 12 and 24, i.e. for sales lagged by one and two years. It does not indicate significant departures from white noise in the residual correlations.

Table 4 shows percentage change in gross sales during the years 2000 and 2001 and the adjusted  $R^2$  and the Durbin-Watson statistic for the regression of actual sales on estimated sales using the ARIMA model. For all shops and for all kinds of beverages there was a substantial and significant increase in gross sales due to the introduction of self-service ( $p < 0.01$ ). The values of  $R^2$  in Table 4 indicate that the model seems to “explain” 84 to 99 per cent of the variance in sales, and – as indicated by the Box-Ljung statistics in Table 3 – the value of the Durbin-Watson statistics confirm that there is no significant autocorrelation in the residuals.

In his study from Sweden, Skog estimated the average increase in gross sales of wine to 21 per cent, for spirits 13 per cent, and for beer 19 per cent. The estimated increase in beer sales was higher in Norway than in Sweden. A reason for this may be that the sale of strong beer in Norway is very modest, and a little increase in sales volume may lead to a relatively strong increase. At the Swedish monopoly, beer is the main item, because there is no sale of medium strong or strong beer in grocery stores, as in Norway. For wine and spirits our results match those from Skog’s study relatively well, even if we find a somewhat larger increase in sales of spirits and a somewhat smaller increase in sales of wine.

However, we are not primarily interested in the effect of the introduction of self-service on gross sales, but the impact the introduction of self-service had on sales to customers who patronized the shop both before and after it switched to self-service, i.e. what we call net sales. Hence, gross turnover at the self-service shops had to be

**Table 3.** Intervention model estimates and Box-Ljung diagnostics

|                                   | Larvik* |      | Molde |      | Fagernes |      | Narvik |      | Fauske |      |
|-----------------------------------|---------|------|-------|------|----------|------|--------|------|--------|------|
|                                   | B       | p    | B     | p    | B        | p    | B      | p    | B      | p    |
| <b>Beer</b>                       |         |      |       |      |          |      |        |      |        |      |
| Control town                      | 0.29    | 0.00 | 0.10  | 0.17 | 0.60     | 0.00 | 0.95   | 0.00 | 1.16   | 0.00 |
| Opening month                     | 0.24    | 0.27 | -0.28 | 0.15 | 0.58     | 0.01 | -0.36  | 0.15 | 0.34   | 0.15 |
| Next 3 months – short-term effect | 0.47    | 0.01 | 0.59  | 0.00 | 0.75     | 0.00 | -0.16  | 0.32 | 0.44   | 0.01 |
| Next 2 years – long-term effect   | 0.70    | 0.00 | 0.68  | 0.00 | 0.93     | 0.00 | 0.30   | 0.00 | 0.52   | 0.00 |
| Constant                          | 3.82    | 0.00 | 5.65  | 0.08 | 1.81     | 0.00 | 0.26   | 0.18 | -1.46  | 0.00 |
| AR1                               | 0.90    | 0.00 | 0.97  | 0.00 | -0.66    | 0.00 | -0.68  | 0.12 | 0.56   | 0.31 |
| MA1                               | 0.54    | 0.00 | 0.53  | 0.00 | -0.92    | 0.00 | -0.78  | 0.04 | 0.41   | 0.48 |
| SAR1                              | 0.99    | 0.00 | 1.00  | 0.00 | 0.91     | 0.00 | -0.50  | 0.55 | 0.40   | 0.63 |
| SMA1                              | 0.67    | 0.00 | 0.59  | 0.00 | 0.52     | 0.00 | -0.60  | 0.67 | 0.26   | 0.76 |
| Box-Ljung 12                      | 12.9    | 0.38 | 10.2  | 0.60 | 3.7      | 0.93 | 6.8    | 0.87 | 3.8    | 0.99 |
| Box-Ljung 24                      | 21.3    | 0.62 | 19.0  | 0.75 | 16.1     | 0.89 | 19.6   | 0.72 | 18.0   | 0.80 |
| <b>Wine</b>                       |         |      |       |      |          |      |        |      |        |      |
| Control town                      | 0.97    | 0.00 | 0.82  | 0.00 | 1.26     | 0.00 | 0.90   | 0.00 | 0.97   | 0.00 |
| Opening month                     | -0.39   | 0.00 | -0.17 | 0.00 | 0.47     | 0.00 | 0.03   | 0.47 | 0.07   | 0.17 |
| Next 3 months – short-term effect | 0.15    | 0.00 | 0.21  | 0.00 | 0.34     | 0.00 | 0.20   | 0.00 | 0.35   | 0.00 |
| Next 2 years – long-term effect   | 0.15    | 0.00 | 0.19  | 0.00 | 0.39     | 0.01 | 0.18   | 0.00 | 0.31   | 0.00 |
| Constant                          | 0.00    | 0.74 | 0.00  | 0.93 | -0.01    | 0.80 | -0.00  | 0.00 | -0.00  | 0.83 |
| AR1                               | 0.29    | 0.04 | -0.27 | 0.07 | -0.03    | 0.91 | 0.07   | 0.57 | -0.12  | 0.46 |
| MA1                               | 0.85    | 0.00 | 0.51  | 0.00 | 0.3      | 0.10 | 0.97   | 0.00 | 0.59   | 0.00 |
| SAR1                              | 0.92    | 0.00 | 0.99  | 0.00 | 1.00     | 0.00 | 0.26   | 0.71 | 0.91   | 0.00 |
| SMA1                              | 0.44    | 0.01 | 0.61  | 0.00 | 0.81     | 0.00 | 0.07   | 0.92 | 0.62   | 0.00 |
| Box-Ljung 12                      | 11.6    | 0.48 | 4.6   | 0.97 | 13.3     | 0.35 | 11.1   | 0.52 | 14.1   | 0.29 |
| Box-Ljung 24                      | 17.0    | 0.85 | 16.6  | 0.87 | 18.4     | 0.78 | 35.5   | 0.06 | 32.9   | 0.11 |
| <b>Spirits</b>                    |         |      |       |      |          |      |        |      |        |      |
| Control town                      | 0.91    | 0.00 | 0.88  | 0.00 | 1.04     | 0.00 | 0.78   | 0.00 | 0.93   | 0.00 |
| Opening month                     | -0.49   | 0.00 | -0.16 | 0.00 | 0.42     | 0.00 | 0.05   | 0.16 | -0.01  | 0.87 |
| Next 3 months – short-term effect | 0.11    | 0.05 | 0.21  | 0.00 | 0.17     | 0.01 | 0.23   | 0.00 | 0.32   | 0.00 |
| Next 2 years – long-term effect   | 0.16    | 0.01 | 0.13  | 0.00 | 0.17     | 0.00 | 0.22   | 0.00 | 0.29   | 0.00 |
| Constant                          | 1.06    | 0.01 | 1.15  | 0.00 | -0.31    | 0.52 | 1.95   | 0.00 | 0.65   | 0.02 |
| AR1                               | 0.83    | 0.00 | 0.89  | 0.00 | 0.53     | 0.01 | 0.98   | 0.00 | 0.74   | 0.00 |
| MA1                               | 0.24    | 0.10 | 0.50  | 0.00 | 0.04     | 0.94 | 0.77   | 0.00 | 0.43   | 0.06 |
| SAR1                              | 0.87    | 0.00 | 0.93  | 0.00 | 0.91     | 0.00 | 0.81   | 0.00 | 0.89   | 0.00 |
| SMA1                              | 0.44    | 0.04 | 0.50  | 0.00 | 0.13     | 0.34 | 0.17   | 0.30 | 0.47   | 0.01 |
| Box-Ljung 12                      | 9.2     | 0.69 | 11.8  | 0.46 | 9.6      | 0.65 | 8.6    | 0.74 | 5.0    | 0.96 |
| Box-Ljung 24                      | 13.8    | 0.95 | 20.7  | 0.66 | 13.3     | 0.96 | 21.7   | 0.60 | 13.0   | 0.97 |

\* The model for Larvik includes a dummy representing the summer months.

**Table 4.** Percentage increase in gross sales in connection with introduction of self-service. Long-term effect. Standard deviation in parenthesis\*

| Shop      | Beer    | Wine    | Spirits | R <sup>2</sup> |      |         | DW   |      |         |
|-----------|---------|---------|---------|----------------|------|---------|------|------|---------|
|           |         |         |         | Beer           | Wine | Spirits | Beer | Wine | Spirits |
| Larvik    | 101(18) | 16 (4)  | 17 (6)  | 0.88           | 0.99 | 0.95    | 1.88 | 1.90 | 1.92    |
| Fagernes  | 153 (7) | 48 (14) | 19 (5)  | 0.84           | 0.98 | 0.98    | 1.74 | 2.13 | 2.07    |
| Molde     | 98(16)  | 20 (5)  | 14 (4)  | 0.87           | 0.91 | 0.86    | 1.94 | 1.77 | 1.80    |
| Narvik    | 35 (7)  | 20 (2)  | 25 (3)  | 0.92           | 0.99 | 0.97    | 1.91 | 2.03 | 2.02    |
| Fauske    | 68 (8)  | 36 (5)  | 34 (3)  | 0.93           | 0.99 | 0.98    | 2.03 | 2.04 | 2.01    |
| All shops | 43 (6)  | 16 (2)  | 20 (2)  | 0.97           | 0.98 | 0.99    | 2.05 | 1.79 | 1.86    |

\*The percentage increase is calculated by  $(\text{antln}(\text{the regression coefficient}-1)*100$  (Halvorsen & Palmquist 1980). The standard deviation refers to the size of the estimated standard error of the regression coefficient multiplied by 100.

reduced by the share of turnover derived from new customers, who – if self-service had not been introduced – would have continued to do their purchases in another of the monopoly’s shops.

Table 5 shows the estimated increase in sales during the years 2000 and 2001 after I have corrected for the effect of new customers’ purchases as it was shown in Table 2. I have assumed that new customers’ share of total sales was identical for beer, wine and spirits respectively. The table shows the estimates for percentage changes in sales in litres for beer, wine and spirits, and in litres of pure alcohol.

Table 5 shows that the introduction of self-service sales at Vinmonopolet appeared to have led to a long-term increase in sales of beer, wine and spirits to customers who traditionally patronized the self-service shops. For all shops combined, beer sales increased by 35 per cent, while sales of wine rose by 10 per cent and sales of spirits by 13 per cent. As already mentioned beer sale at Vinmonopolet is very modest and play little part in total alcohol consumption. In terms of pure alcohol, the

increase in consumption resulting from the introduction of self-service was estimated to about 11 per cent.

When Skog estimated the net increase in alcohol sales, using a somewhat different method than the one applied in this study, he found that the new customers constituted approximately half of the increase in gross sales. Our estimates for the new customers’ share of the increase in gross sales were about 30–40 per cent. The difference may in some part be due to different methods for estimation and in some part to the difference in the density of monopoly outlets in the two countries. In Sweden none of experimental shops were located more than 31 kilometres from another monopoly shop, and 5 out of 7 of the experimental shops were located less than 20 kilometres from the nearest neighbouring shop. In Norway one had to travel for more than one hour by car to reach the nearest neighbouring monopoly outlet for 3 out of 5 of the experimental shops (Molde, Fauske, Larvik); while the last two (Larvik, Fagernes) were located respectively 18 and 49 kilometres from the

**Table 5.** Estimated increase in net sales (per cent)\*

|           | Beer |     |     | Wine |     |    | Spirits |     |    | Pure alcohol |     |    |
|-----------|------|-----|-----|------|-----|----|---------|-----|----|--------------|-----|----|
|           | Lci  | Uci |     | Lci  | Uci |    | Lci     | Uci |    | Lci          | Uci |    |
| Larvik    | 79   | 42  | 117 | 3    | -6  | 13 | 4       | -9  | 17 | 5            | -6  | 15 |
| Fagernes  | 123  | 104 | 141 | 30   | 0   | 60 | 5       | -7  | 17 | 26           | 0   | 52 |
| Molde     | 94   | 62  | 126 | 18   | 8   | 28 | 12      | 4   | 20 | 18           | 8   | 28 |
| Fauske    | 45   | 28  | 63  | 18   | 7   | 29 | 16      | 9   | 23 | 18           | 8   | 28 |
| Narvik    | 35   | 21  | 49  | 20   | 16  | 24 | 25      | 19  | 31 | 21           | 17  | 26 |
| All shops | 35   | 23  | 47  | 10   | 5   | 14 | 13      | 9   | 18 | 11           | 7   | 15 |

\*The Lci and Uci refer to an interval which is somewhat wider than a 95% confidence interval.

nearest neighbouring shop. Consequently fewer customers were tempted to visit the nearest self-service outlet in Norway than in Sweden.

Even if the estimated share of sales by new customers varied somewhat between Sweden and Norway, our estimates of changes in net sales tallied well with those produced by Skog. He calculated a net increase averaging between 7 and 13 per cent in terms of pure alcohol (Skog 2000). I found that a 95 per cent confidence interval for the increase in terms of pure alcohol covered the values from 7 to 15 per cent.

#### ■ Customers' views on self-service sales

The interview surveys of a representative sample of the Norwegian population carried out just before Vinmonopolet opened its first self-service shop showed that a clear majority were in favour of introducing self-service, 72 per cent of the men and 56 per cent of the women were in favour of self-service.

Among the sample of Vinmonopolet's customers opinions were less clear-cut. Before the transformation to self-service, customers at shops converted to self-service were more favourably disposed to the

introduction of self-service than customers at stores that remained over-the-counter. Among customers at shops that remained over-the-counter, customers in favour of introduction of self-service constituted a minority. Both customer groups were less positively disposed to self-service than the national sample.

The seeming discrepancy between the attitude to the introduction of self-service among the population as a whole and the monopoly's customers may be due to sampling errors. However, they may also be the result of the customers' wish to please the interviewers. Since the interviewers were recruited from the staff, it is easy to imagine that they were not in favour of self-service, since this may put their job at stakes (Hamran & Myrvang 1998, 380). The customers were well aware of this, and this fact may have influenced their answers. If so, this could also explain the difference between the opinion of customers of shops which should remain over-the-counter and of shops which should turn to self-service.

One year later, when the self-service was carried through, the share in favour of self-service had risen significantly in all of the groups shown in Table 6 ( $p < 0.01$ ). There

**Table 6.** Percentage share in favour of self-service sales at Vinmonopolet's shops

|                                     | Men  |      | Women |      |
|-------------------------------------|------|------|-------|------|
|                                     | 1999 | 2000 | 1999  | 2000 |
| Population*                         | 72   | 81   | 59    | 72   |
| Customers at self-service shops     | 63   | 97   | 60    | 96   |
| Customers at over-the-counter shops | 46   | 65   | 46    | 62   |

\*The second survey was conducted in August 2001

was now a majority in favour of introducing self-service among all groups. Among customers at shops that had become self-service, as much as 96–97 per cent reported being in favour of self-service sales of strong beer, wine and spirits after the experiment had been under way for one year. It seemed that customers were pleased with self-service sales of wine and spirits, and that their experience from self-service shopping strengthened the support for this way of shopping alcoholic beverages. This is in accordance with a conclusion drawn by Fiilin and Virtanen on the basis of an interview with a sample of Finnish alcohol monopoly customers in 1973 (Fiilin & Virtanen 1984, 45).

However, as Romanus (1984) mentioned in his comment to the study of Fiilin and Virtanen, the positive attitude to self-service among customers who patronize self-service stores may be due to the fact that these customers had deliberately chosen these shops because they prefer self-service. This may be the case in the Finnish

study since the data were from shops in the Helsinki region, i.e. from a region where the customers could choose between patronizing an over-the-counter and a self-service outlet. In our study very few of the customers had the possibility to make such a choice; either they had to shop in a self-service shop, or they had to patronize an over-the-counter outlet. This sustains the conclusion from Fiilin and Virtanen that people who are able to experience self-service shopping for alcoholic beverages come to prefer this form of service.

This conclusion is also supported by the results from the consumer satisfaction part of our study. The customers of the self-service shops reported a significantly higher satisfaction level after the introduction of self-service than before, while the satisfaction level among customers in the over-the-counter shops seemed to have moved in the opposite direction (t-test;  $p < 0,001$ ). This is shown in Table 7. The main reason for the increased satisfaction level among customers who patronized the self-service

**Table 7.** Satisfaction level scores (0=bottom, 6=top)

| Shop   | 1999 | 2000 |
|--|------|------|
| 5 experimental shops                                   | 5,14 | 5,36 |
| 5 control shops  | 5,27 | 5,14 |
| 3 self-service shops in Trondheim and Kristiansand     | 4,89 | 5,26 |
| 3 over-the-counter shops in Trondheim and Kristiansand | 4,84 | 4,66 |

shops was that they had to spend less time in a queue. In addition, many customers also reported that the self-service shops looked nicer than the traditional over-the-counter outlets.

Customers who patronized self-service shops also reported a significantly higher satisfaction level than customers in over-the-counter outlets. This is in accordance with studies of Norwegian customer's satisfaction made every year by the Norwegian Business School (BI). According to these studies customers who patronize self-service monopoly shops are significantly more satisfied than customers who patronize over-the-counter monopoly shops (Silseth 2005).

**■ Customers' preferred method of sale**

What people say they would do in a situation where they can choose between different alternatives is not always matched by their actual behaviour. A positive attitude towards self-service shopping is not necessarily followed by patronage of self-service shops. However, studies have shown that when people form their attitudes on the basis of behaviour-relevant information, such as shopping in a self-service store, the link between attitude and behaviour becomes strongest (Glasman & Albarracín 2006). To study if there was a discrepancy between the types of shops people

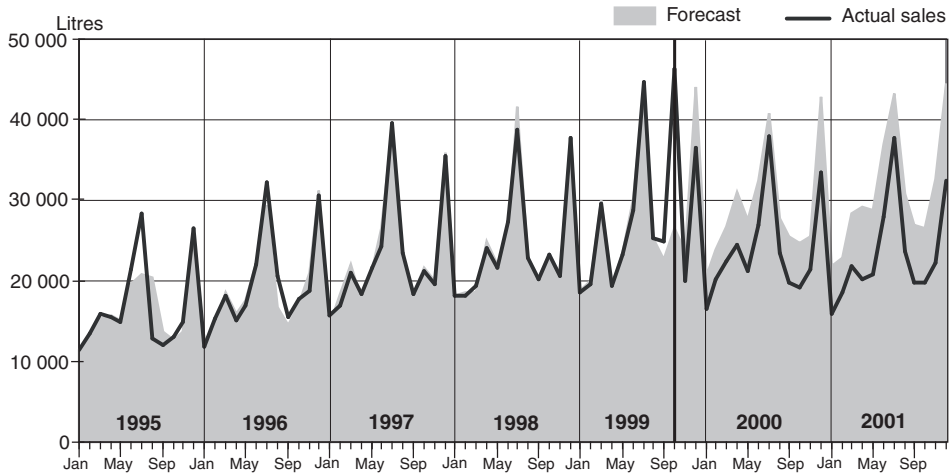
reported they would like to patronize and where they actually did their shopping, the population of Kristiansand and Trondheim were given a genuine choice between shopping at a self-service (and form their attitudes on behaviour relevant information) or an over-the-counter shop. Based on the figures in Table 6, customers in the two towns could be expected to abandon the over-the-counter shops in favour of the self-service shops.

The sales forecast is based on equation (3). As a measure of the forecast's reliability I calculated the size of the variance prior to the introduction of self-service that was explained by the regression model. The standard error of the regression model multiplied by 100 can be interpreted as an estimate of the uncertainty of the forecast reckoned in percentage points. Table 8 gives a summary of the adjusted R<sup>2</sup> and standard error of the regression model. The table shows that the model seems to "explain" between 80 to 93 per cent of the variance in sales, and that the uncertainty varies from 1 to 7 per cent. This means that the regression model may give relatively precise predictions of what sales would have been, had self-service not been introduced.

Figure 1 shows actual wine sales at the over-the-counter shop in Kristiansand and the sales forecast. The figure shows that

**Table 8.** The forecast model's explanatory power

|                               | Beer           |      | Wine           |      | Spirits        |      |
|-------------------------------|----------------|------|----------------|------|----------------|------|
|                               | R <sup>2</sup> | SE   | R <sup>2</sup> | SE   | R <sup>2</sup> | SE   |
| Kristiansand over-the-counter | 0.82           | 0.06 | 0.91           | 0.02 | 0.85           | 0.02 |
| Kristiansand self-service     | 0.80           | 0.07 | 0.93           | 0.01 | 0.91           | 0.01 |
| Trondheim                     | 0.84           | 0.06 | 0.91           | 0.01 | 0.88           | 0.02 |

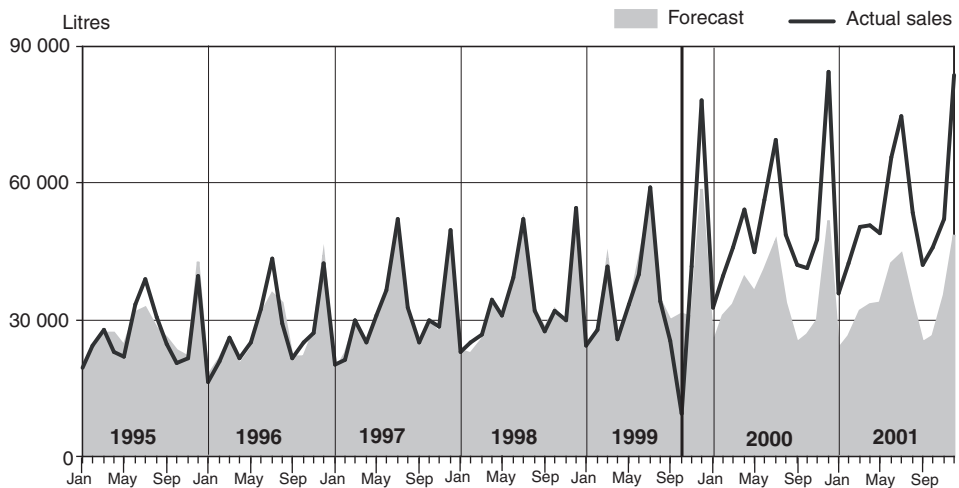


**Figure 1.** Forecast and actual wine sales at the over-the-counter shop in Kristiansand

the sales forecast closely shadows actual sales right up to October 1999 when the other shop switched to self-service (shown by the vertical line in the figure). After self-service was introduced at the other shop in Kristiansand, the forecast consistently diverged from actual sales. I found overall wine sales in the two years 2000 and 2001 at the over-the-counter shop to be 150 000 litres lower than expected due to the intro-

duction of self-service at the other shop. This was equivalent to a 21 per cent decline compared with expected sales.

Figure 2 shows wine sales at the self-service shop in Kristiansand and a forecast for expected sales. The figure shows that after the shop switched to self-service, actual sales consistently exceeded the sales forecast. In the two years 2000 and 2001 actual wine sales at the self-service



**Figure 2.** Forecast and actual wine sales at the self-service shop in Kristiansand

**Table 9.** Increase in total sales in two towns where customers could choose between alternative sales forms

|              | Kristiansand |          | Trondheim |          |
|--------------|--------------|----------|-----------|----------|
|              | Litres       | Per cent | Litres    | Per cent |
| Table wine   | 275 000      | 18       | 250 000   | 7        |
| Strong beer  | 13 000       | 76       | 21 000    | 48       |
| Spirits      | 42 000       | 15       | 134 000   | 17       |
| Pure alcohol | 50 000       | 17       | 85 000    | 11       |

shop were a good 425 000 litres higher than expected sales, corresponding to a sales increase of 50 per cent. During these two years the sales increase for wine at the self-service shop was accordingly 275 000 litres larger than the decline in sales at the over-the-counter shop. For both shops combined sales of wine increased by 18 per cent compared to expected sales. This is a gross figure which does not take into account the influx of new customers from other shops.

I carried out the same calculations for spirits and beer as for wine and the results are shown in Table 9. For spirits the increase in sales was 15 per cent of expected sales in the years 2000 and 2001, while the calculated increase in total beer sales came to 76 per cent. In terms of pure alcohol, the additional gross sales resulting from the introduction of self-service were 17 per cent of the expected quantity of pure alcohol that would have been sold if the shops had remained over-the-counter. If we assume that 35 per cent of the increase in sales was due to an influx of new customers, we reach the same estimate – 11 per cent – for the increase in net sales in Kristiansand as for the 5 experimental shops together.

In Trondheim two self-service shops were opened, one in a shopping centre on

the outskirts of the town and one in the town centre. Two shops remained over-the-counter and, here too, one was situated in a shopping centre on the outskirts of town and the other in the town centre.

Figure 3 gives an overview of actual wine sales at the two outlets in the shopping centres in the outskirts. The figure shows that sales varied in the same way from month to month at the two outlets right up until self-service was introduced in one of the shops. When self-service was introduced wine sales in the self-service shop in the first half of 2000 increased by 46 per cent compared to the same period the previous year. At the same time, sales were 3 per cent lower at the over-the-counter shop. Thus wine sales at the over-the-counter shopping centre outlet in the outskirts of the town remained approximately unchanged, even after self-service was introduced at the shop in the other shopping centre.

Looking at the two shops in the town centre, the picture is somewhat different. Here too actual wine sales at the two shops varied in approximately the same way from month to month before self-service was introduced, but the trend in sales showed wider variation for these two shops than for the shopping centre shops. This was not only due to the introduction



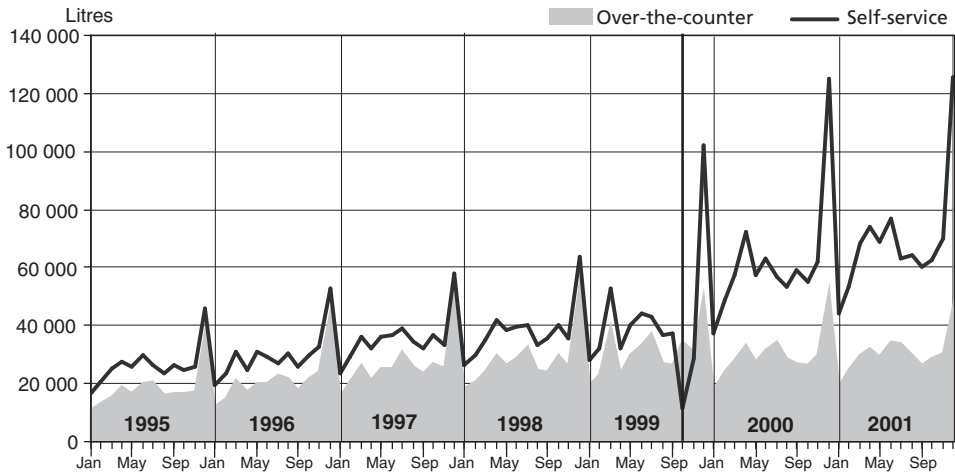


Figure 3. Actual wine sales at two shopping-centre outlets in the outskirts of Trondheim

of self-service, however. In January 1997 the control-shop was relocated (marked by the dashed vertical line on Figure 4), and as a result its turnover surpassed that of the other shop in the town centre. However, when self-service was introduced at the experimental shop, also this shop was re-located, moving into a shopping mall in the town centre. Hence, it was difficult to know how much of the increase in turnover was due to the introduction of self-

service and how much was due to the fact that the shop acquired a better location and was assigned to a shopping mall. All in all these changes led to an increase in wine sales of 89 per cent from the first half of 1999 to the first half of 2000, while sales at the over-the-counter shop fell by 31 per cent. This is shown in Figure 4.

Even if part of the difference between the trends in sales in the two shops in the city centre is a consequence of the new

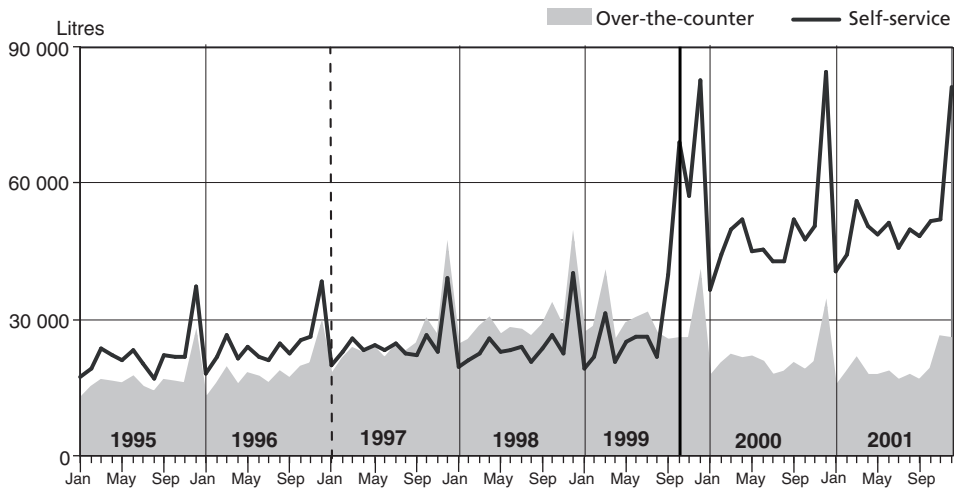


Figure 4. Actual wine sales at two town-centre shops in Trondheim

and better location of the self-service store, there is no reason not to believe that the introduction of self-service has resulted in a remarkable flow of customers from the over-the-counter to the self-service store. The reason why we do not find the same picture at the two shops in the outskirts of the town, is, firstly, that they do not compete closely with one another since they are located 10 kilometres from each other. Secondly, it is a much longer way to the nearest monopoly store from the shops in the outskirts than from the shops in the city centre. Therefore, customers who patronize the shops in the outskirts tend to be more loyal to these shops than customers who shop wine and spirits in the city centre.

Hence, there was no doubt that the introduction of self-service in a locality featuring more than one outlet led to higher sales at the self-service shops, and that part of the increase was due to the fact that the self-service shops captured turnover from the over-the-counter shops. This shows that a number of customers actually changed their purchasing patterns as a result of the availability of self-service shopping. Neither was there any doubt that the introduction of self-service led to a net increase in sales at Vinmonopolet in localities in which self-service was introduced.

I produced for the shops in Trondheim, in the same way as for the shops in Kristiansand, a forecast of expected sales had self-service not been introduced at any of the shops. In view of the many changes witnessed at the shops in Trondheim, I estimated total sales at the town's four shops, rather than for each shop. Figure 5 shows the trend in actual and forecast sales of spirits throughout Trondheim between January 1995 and December 2001.

After self-service was introduced at two shops in Trondheim, actual sales clearly exceeded the forecasts. The estimated differences between actual sales and forecasts are shown in Table 8. In the course of the years 2000 and 2001 actual sales of spirits measured 17 per cent more than expected sales, and there is little doubt that the introduction of self-service in Trondheim led to an increase in total sales of spirits. The same applies to wine and beer. In the case of wine, the estimated increase in sales caused by the introduction of self-service was 7 per cent and, in the case of beer, 48 per cent. In terms of pure alcohol the estimated increase in gross sales resulting from the introduction of self-service was 11 per cent.

The estimated increase in alcohol sales for Trondheim is lower than for Kristiansand and the 5 experimental shops together. This may be due to the localization of the shops. The choice between the shops in the shopping centres in the outskirts of the town is less genuine than the choice in the city centre, since they were located 10 kilometres from each other. Customers who patronize these shops seemed to be more loyal and, consequently, the introduction of self-service affected them less. Another reason may be that less new customers from the districts visited Trondheim than Kristiansand.

## Discussion

Our study showed that the introduction of self-service clearly increased sales volumes – the average net increase in sales was approximately 10 per cent in pure alcohol. These results are well in line with Skog's analysis of the consequences of the introduction of self-service in Sweden.

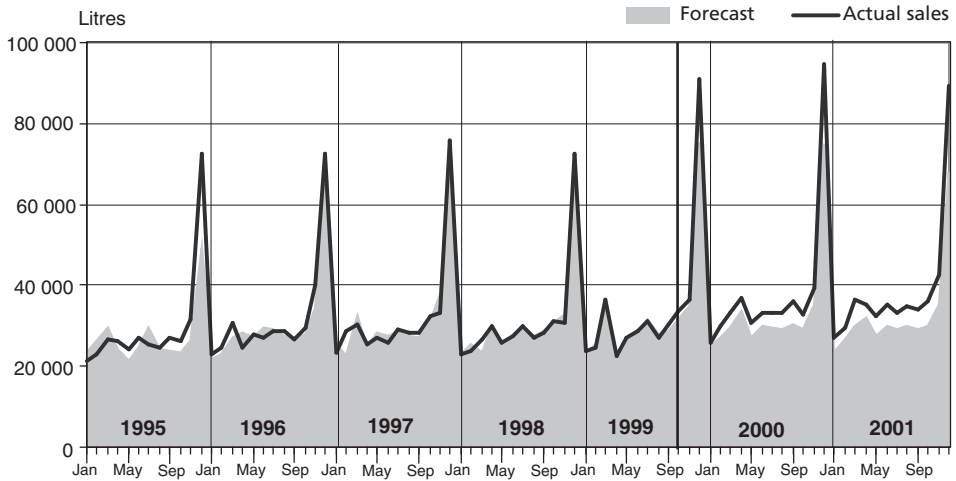


Figure 5. Forecast and actual sales of spirits in Trondheim

The estimated increase may, however, be too small. This is due to that the heaviest consumers may be underrepresented in our study, at the same time as their consumption seems to be more affected by liberalisation (and tightening) of the restriction system than for those who consume less (Mäkelä et al. 2002). This is supported by a study of Horverak (2004), who analyzed changes in alcohol consumption when Vinmonopolet opened a new outlet in a rural municipality near the Swedish border. He found that the tenth that were reported to drink most (4.5 litres of pure alcohol a year or more) increased their average consumption by 17 per cent. For the rest of the sample he found no effect on average consumption.

The reason for the increase in sales caused by the introduction of self-service may be due to many factors, of which Skog put weight on three. First, the fact that wines and spirits were so expensive generated a latent pressure to buy more alcohol than was actually bought. By bringing the

customer closer to the products this latent pressure translated more readily into actual purchases. Second, the buyer's opportunity to decide his tempo of purchase himself may lead him to peruse more products than those he would have asked for over the counter. And, third, the introduction of self-service may help to make alcohol products a more commonplace item; they are less select than when only available over the counter, and this would tend to increase the demand for them.

I would mention a fourth reason which may have played a part, i.e. that over-the-counter sales bring customer and vendor into closer contact with one another than in the case of self-service. Taking articles out of a shopping basket and paying for them at the till is somewhat impersonal compared with paying at the desk for goods that the shop assistant has been asked to pick out. Over-the-counter sale therefore represents a measure of social control not found in the case of self-service. This mechanism is particularly likely to make itself felt in

smaller localities where tongues may start wagging if the wine and spirits shop is frequented far too often.

The study showed that the introduction of self-service was popular among the customers. One year after the introduction of self-service, the majority in favour of self-service on a population basis had increased from 59 to 72 per cent among women and from 72 to 81 per cent among men. Among the customers in the self-service shops, almost everyone (96–97 per cent) reported that they preferred self-service shopping for alcoholic beverages. It seemed that the experience with self-service in itself strengthened the support of this way of shopping for alcohol and customers that patronized self-service stores reported a significantly higher level of satisfaction with the monopoly store than did customers in over-the-counter shops. The main reason for the increased satisfaction was that the customers spent less time queuing.

The introduction of self-service in some of Vinmonopolet's outlets was meant as an experiment subject to scientific evaluation. Together with other factors of relevance the result of the evaluation should be part of the basis for the Government's final judgement. The Government brought forward its decision to the summer of 2001, that was one year before the evaluation study was to be finished. Yet, at the time the decision was taken, the Government already knew from preliminary results that the introduction of self-service would probably lead to an increase of about 10 per cent in alcohol sales. Nevertheless, the Government decided to continue introducing self-service, a decision that was followed up with enthusiasm by the monopoly. During 2002

the monopoly converted 71 of their 176 shops into self-service, and at the end of 2006, some 198 outlets – or 94 per cent – of Vinmonopolet's 211 shops were practising self-service. The reason for the Government's decision, despite the significant increase in alcohol sales which followed the introduction of self-service, was mainly the change in political climate during the last decades of last century. In this new and more liberal political climate, alcohol policy arguments had to give way to a consumer policy.

Nowadays a majority of the Norwegian politicians are more concerned with reasonably easy access to alcohol as a right to be enjoyed by all consumers in Norway than they are with restricting access to alcohol as a means of curbing alcohol consumption. There is a tendency among today's politicians to give greater emphasis to consumer policy issues and customer satisfaction, and less to alcohol policy considerations. It is in the wake of this policy development, with its weight on consumer freedom and the right to choose, that we have to consider the introduction of self-service at Vinmonopolet's shops.

Also Skog's analysis of the effect of introducing self-service in Sweden was carried out to learn more of the consequences of self-service before a final decision were taken on whether or not to introduce self-service at Systembolaget's outlets. Despite the increase in alcohol sales that accompanied the introduction of self-service in Sweden, the Swedish monopoly was given leave to open further self-service shops. At the end of 2006, some 250 of a total of 410 outlets were practising self-service. Thus, the Government considered the benefits of the new sales method as outweighing

the drawbacks of higher alcohol consumption.

However, this may not be the whole story. Long before the experiment in self-service, the management in Vinmonopolet maintained that if the alcohol monopoly system should have any chance to survive, it had to become more consumer-friendly and strengthen its legality among the customers (Myklebust 2006). Such considerations seem to prevail among the politicians in the other Nordic alcohol monopoly countries, too (Norström & Ramstedt 2006; Örnberg & Ólafsdóttir 2007). Supposing that the politicians compared the results of the introduction of self-service with the assumed consequences on alcohol sales of a non-monopoly and privatized system, there may be reason to assert that such a system would lead to a greater increase in alcohol sales than the introduction of self-service into the monopoly's shops.

The politicians' concern of the monopoly was – among other things – due to a series of studies based on representative samples of the Norwegian population, who were asked if they wanted wine to be sold in grocery stores or not. For the years 1991, 1994 and 1999 an increasing share of, respectively, 47, 57 and 65 per cent wanted wine to be sold in grocery stores (Østhus 2005). So, the important question for those who were in favour of the monopoly was not so much if self-service increased sales, but whether a majority of the customers wanted self-service. In that case, introduction of self-service in monopoly stores could lead to a strengthening of the monopoly's position among its customers and – not least – the press, and accordingly to a reduction in the share of the population that wanted wine in grocery stores.

Thus, even if the introduction of self-service into Vinmonopolet's shops seems to fit nicely into the liberal development of alcohol policy in Norway during the last decades, this need not be the case. This view is strengthened by the fact that a study based on a representative sample of the Norwegian population in 2004 showed that the share that wanted wine to be sold in grocery stores had fallen from 65 per cent in 1999 to 56 per cent in 2004 (Østhus 2005). Also, among the press, and especially among the large national newspapers that traditionally have opposed the monopoly system, there has been a change of attitude. The wine-journalist of the leading liberalistic newspaper in Norway, *Dagens Næringsliv* (Today's Business), who for years has been a stifled enemy of the monopoly, has for example made the following statement about the new and modernized Vinmonopolet: "Under his [general manager Knut Grøholt (ø.h.)] era the monopoly has changed from being an antiquarian remnant to become a top modern wine store with an assortment no foreign store can match" (Vinmonopolet 2005:3).

It seems that the increased number of monopoly outlets, the introduction of self-service and the enormous assortment of wine and liquor brands have led to an increased support for the monopoly system among Norwegians. It is still too early to know if this is a lasting tendency, but if this is true, the introduction of self-service in the monopoly's stores may be seen as a part of a long-term strategy of keeping the state monopoly, where the opinion of its customers and the press becomes a stronghold of the monopoly system itself. However, it remains to see if a monopoly which, to use Joys' phrase from the 1990s,

“sells wine and liquor in the best possible way”, may at the same time be able to act as an effective tool of Norwegian alcohol policy.

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## NOTES

- 1) However, Myklebust (2006, 28) maintains that Joys' "main goal was that Vinmonopolet should sell more goods".
- 2) The prize was mainly the result of the changes which were carried out during the period 1996–2005, i.e. in the 10 years when Knut Grøholt was general manager. Due to troubles with shop managers who were accused of taking bribes from a supplier and later controversies with the staff, Grøholt decided to send in his resignation at the end of 2005. He was replaced by Kai Henriksen in August 1996.
- 3) The prognosis was made on the basis of monthly sales in the period January 1988 to June 1990, i.e. 30 months.
- 4) I had to difference wine sales because of a positive trend. For sales of spirits and beer there was no need of differencing.
- 5) For wine I used  $(E_t - E_{t-1})$  and  $(K_t - K_{t-1})$  instead of  $E_t$  and  $K_t$ .
- 6) The exact number of customers that were interviewed in the 5 experimental shops after self-service was introduced was 125, 178, 181, 195 and 303. The main part of the interviews were carried out between 11 a.m.–1 p.m. and 3–5 p.m. except on Saturdays, when the interviews were conducted between 10–12 a.m. and 1–3 p.m. since the shops closing time is at 3 p.m. on Saturdays. On the other weekdays the shops close at 5 p.m. (Monday-Wednesday) or 6 p.m. (Thursday and Friday). The opening time is 10 a.m. Monday-Thursday and 9 a.m. Friday and Saturday. Some more persons were interviewed on Fridays and Saturdays than on the other weekdays, since these days are the main shopping days at Vinmonopolet.
- 7) The limits were set to 30 interviews on Monday-Thursday and 40 on Friday and Saturday, but the interviewers did not always succeed in getting the adequate number of interviews.
- 8) If customer no.  $i$  in group  $j$  spent  $X_{ij}$  on the last purchase, and reported that (s)he used to visit the shop  $Y_{ij}$  times a year, the  $j$ -the group's – consisting of  $N_j$  persons – share of the turnover was  $\sum_i X_{ij} * Y_{ij} / \sum_i X_{ij} * Y_{ij}$  ( $i=1,2,\dots,N_j$ ;  $j=1,2,3,4$ ).
- 9) The customers were picked out by the same procedure as mentioned in note 4.
- 10) The alcohol content in beer, wine and spirits are set to 6.5, 12 and 38 per cent by volume, respectively.

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