

# The effects of favouring lower alcohol content beverages: Four examples from Finland

ESA ÖSTERBERG

## ABSTRACT

**AIMS** – This paper studies the possibility of substituting the consumption of one alcoholic beverage category for another by changing alcohol control measures. It examines four Finnish examples: the waiving in 1952 of the requirement to show a special identity card issued by the alcohol monopoly Alko for buying fortified wines; again binding the sales of fortified wines to Alko's identity card in 1958; a 1960s alcohol price policy favouring wines and beer over vodka; and the change in alcohol legislation in 1968, which allowed selling medium beer in grocery stores but left the off-premise sales of all stronger alcoholic beverages to Alko's liquor stores. **DATA** – Data on recorded consumption of alcoholic beverages in terms of 100 per cent alcohol per capita according to beverage categories will be used together with the numbers of arrests for drunkenness according to beverage categories as well as different data sources on changes in alcohol control measures. **RESULTS & CONCLUSIONS** – The four examples from Finland show that strong alcoholic beverages can be substituted for lighter drinks, but this seems to work especially when the lighter beverages can be used for the same purposes as the stronger ones. It is much more difficult to persuade consumers to substitute strong alcoholic beverages for light ones by changing relative alcohol availability or by adjusting prices, if the consumers also have to change their drinking habits by, for instance, substituting bingeing with vodka for drinking light wines with meals. The Finnish examples also make it clear that changing from one beverage category to another does not automatically result in changing the way to use alcoholic beverages or the drinking habits themselves.

**KEYWORDS** – Substitution, addiction, alcohol control measures, alcohol consumption, arrests for drunkenness, Finland

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## Introduction

In 1959 the Finnish State Alcohol Monopoly (Alko) officially launched the policy of “rather wine (and beer) than strong alcoholic beverages”, but already at the beginning of the 1950s there had been changes in alcohol control measures that had affected the relative availability of light and strong alcoholic beverages. For many supporters of the new policy, the ultimate goal was to tame the Finnish boozing drinking habits by introducing a less harmful ‘Mediterranean type of drinking’, where light wine

was the most consumed alcoholic beverage, drunk mostly with meals (Kuusi 1952; 1956; Bruun 1972; Häikiö 2007).

There were also Finnish studies to support the policy of light alcoholic beverages. *The Effects of Distilled and Brewed Beverages*, published in 1957, showed that when drinking the same amount of ethyl alcohol in the form of distilled spirits or beer, beer drinkers became less aggressive than spirit drinkers (Takala et al. 1957). This seemed to indicate that there was a

chance to decrease alcohol-related problems by replacing strong alcoholic beverages with light alcoholic beverages even without changing drinking habits.

This article studies the process of substituting alcoholic beverages of different alcoholic beverage categories for other by changing alcohol control measures which affect both the physical and economic availability of alcohol. The main hypothesis is that changes in the relative availability of alcoholic beverages which belong to different alcoholic beverage categories lead to substituting one for other as measured by their consumption in 100 per cent alcohol per capita. In this context, the role and importance of unrecorded alcohol consumption will be discussed. The second research question is that if distilled spirits or more generally stronger alcoholic beverages are substituted for weaker alcoholic drinks, does this lead to changes in drinking habits, especially in binge drinking? If this is the case, substitution between different alcoholic beverages should be reflected in changes in the total number of arrests for drunkenness, and in the number or arrests for drunkenness connected to different alcoholic beverage categories.

My data consists of four Finnish examples of changes in alcohol control measures in the 1950s and 1960s which have affected the relative availability of distilled spirits, wine and beer. These examples are: (1) the waiving of the requirement in 1952 to show a special Alko-issued identity card when buying fortified wines in Alko's off-premise retail stores; (2) binding the sales of fortified wines again to Alko's identity card in 1958; (3) the alcohol price policy in the 1960s, which favoured wines

and beer over vodka; and (4) the change in alcohol legislation in 1968, which allowed off-premise retail sales of medium beer in grocery stores from the beginning of 1969 but left the off-premise sales of all stronger alcoholic beverages to Alko's liquor stores.

## Data

The effects of changes in the relative availability of strong and light alcoholic beverages on consumption will be looked at from the basis of recorded consumption of alcoholic beverages in terms of 100 per cent alcohol per capita according to beverage categories. The basic division into beverage categories is that of distilled spirits, wine and beer. In the following I will also use more detailed classifications.

The tables of this article which show alcohol consumption figures of distilled spirits are divided into vodka and gin and into other distilled spirits. In quantitative terms, vodka and gin equals vodka alone, as Finnish gin consumption is tiny. I will therefore use the term vodka, instead of "vodka and gin", in the text. The wine category is divided into fortified wines and light wines, which in Finland are also called table wines, natural wines, regular wines or just wines. "Wines" with whatever prefix is a difficult term, as it includes both wines made from grapes and those made from fruits and berries – which according to the current EU definition are not wines at all. This article makes use of "light wines", referring to all kinds of wines produced by fermentation with no added ethyl alcohol. From 1950 to the mid-1970s light wines in Finland contained on the average 12 per cent ethyl alcohol by volume (Österberg 1979). The share of domestically produced wines

from fruits and berries of the total domestic wine sales has fluctuated greatly. However, it has been clearly more important than in the other Nordic countries. For instance, at the turn of the 1950s into 1960s, this share was more than one third, while at the beginning of the 1970s, domestically produced wines from fruits and berries accounted for one fifth of the total sales of light wines in Finland (Alkon vuosikirja 1958; 1959; 1960; 1961; 1970; 1971; 1972). In this study, beer is divided into strong and medium beer, the dividing line being 4.7 per cent ethyl alcohol by volume.

During the study period, arrests for drunkenness in cities and towns were recorded by the police according to the category of the alcoholic beverages the arrested persons had drunk when becoming intoxicated. For licit alcoholic beverages the categories used in police records were vodka and gin, other distilled spirits, wines, beer and different licit beverages. In this categorisation, wines included both fortified wines and light wines. Likewise, beer included both strong and medium beer. From 1970, the records of arrests for drunkenness were published separately for strong beer and medium beer. The data of arrests for drunkenness according to the beverage category were published in the Statistical Yearbook of Alko until 1984 (Alkon vuosikirja 1984).

From the beginning of the 1950s until 1958, the total number of arrests for drunkenness slightly decreased (Österberg 1983). The numbers then rose somewhat until 1969 when they reached the same level as in 1950. In the first half of the 1970s, the figures of arrests for drunkenness doubled. After the peak in the mid-1970s they began to decrease. In cities and

towns the trend in the number of arrests for drunkenness was similar to the course in the whole country (Österberg 1983).

In the period 1950–1975, arrests for drunkenness were mostly made in cities and towns. In 1950, about one third of the population lived in cities and towns, while the share of cities and towns as the place where arrests took place was 82 per cent (Ahlström & Österberg 1981; Österberg & Karlsson 2002). One explanation for this high percentage is that until 1969, Alko's off-premise retail stores could only be located in cities and towns. Restaurants situated in rural municipalities were to serve only or mostly tourists or other visitors. It was only in 1969 that Alko was allowed to open liquor stores in rural municipalities. Medium beer sales started in grocery stores all over the country the same year, and it became much easier to get restaurant licenses in rural municipalities. In 1975 the share of arrests for drunkenness in municipalities where Alko had at least one liquor store was 87 per cent. It is therefore reasonable to assume that arrests for drunkenness in cities and towns represent arrests for drunkenness in the whole country in the 1950–1975 period.

Public drunkenness was criminalised in Finland until the late 1960s. Its decriminalisation in 1969 did not, however, change the grounds of arrests for drunkenness and affected the police practices in arresting drunken persons only slightly (Ahlström & Österberg 1981). In the wake of the decriminalisation of public drunkenness, which was a part of the general societal process of the 1960s – also making the Finnish alcohol attitudes more permissive and liberal overall – the arresting practices of the police became more

lenient in the late 1960s (Österberg 2007). This trend, came to a halt and even took a turn in the opposite direction in the early 1970s when the consequences of the new liberal alcohol legislation were seen in the huge increase in alcohol consumption and related harm (Ahlström & Österberg 1981).

The decriminalisation of drunkenness does not therefore really jeopardise the comparability of statistical data on arrests for drunkenness as an indicator of the trend in the number of cases of drunkenness in 1950–1975. From 1968 to 1975, the number of arrests for drunkenness increased from 149,057 to 276,206. Contrary to the 1960s, when the numbers of arrests for drunkenness decreased relative to alcohol consumption, this relation stayed about the same in the first half of the 1970s (Ahlström & Österberg 1981). Only after the mid-1970s did the numbers begin to decrease slowly but constantly, when the arresting of drunken persons got lower and lower priority in police work in the next decades.

During the period 1950–1975, the share in cities and towns of arrests for drunkenness by licit alcoholic beverages was usually over 95 per cent (Ahlström & Österberg 1981). The share of illicit or surrogate alcohol was thus usually quite small (see also Mäkelä 1979; Österberg 1987). It is important to note that illicit alcohol is not the same as unrecorded alcohol. For instance, bottles of alcoholic beverages imported by tourists clearly fall under the category of unrecorded alcohol, but have most certainly been recorded by the police as licit alcoholic beverages connected to drunkenness.

The trend of arrests for drunkenness in cities and towns connected to the use

of licit alcoholic beverages is almost the same as the trend for all arrests for drunkenness in cities and towns and all arrests for drunkenness in Finland (Ahlström & Österberg 1981). There are some minor exceptions such as the epidemic of drinking T-spirits, a window cleaner containing denatured but not poisonous alcohol, in the late 1960s and early 1970s. In its heyday in 1968, arrests for drunkenness caused by T-spirits rose to over 12,688, which represented more than 10 per cent of all arrests for drunkenness in cities and towns.

According to Klaus Mäkelä's analysis of unrecorded alcohol consumption in 1950–1975, the consumed amounts did not change between the early 1950s and the late 1960s (Mäkelä 1979). Based on the Finnish Drinking Habits surveys in 1968 and 1976, the amount of unrecorded alcohol remained on the same level also from the late 1960s to the mid-1970s. However, while there was an increase in the recorded alcohol consumption, the share of unrecorded alcohol consumption of total alcohol consumption decreased in 1950–1975. The share of unrecorded alcohol consumption was between 20–40 per cent of the recorded alcohol consumption in the 1950s. In 1968 this share was 13 per cent and in 1976 about 8 per cent (Österberg 1987).

Unrecorded alcohol consumption also underwent great qualitative changes in 1950–1975. Purified spirits, alcohol containing substances and contraband came to play a much smaller role in unrecorded alcohol consumption while tourist imports of alcoholic beverages became more significant. With the exception of light wine, home-made alcohol lost its importance. Finally, as already mentioned, whilst not

**Table 1.** Alcohol consumption in litres of 100 per cent alcohol per capita by beverage categories, 1950–1960.

Beverage category	Year										
	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Vodka and gin	0.73	0.66	0.62	0.59	0.69	0.77	0.73	0.72	0.77	0.85	0.86
Other distilled spirits	0.66	0.71	0.68	0.59	0.54	0.53	0.48	0.43	0.38	0.38	0.45
Total distilled spirits	1.39	1.36	1.30	1.18	1.23	1.30	1.21	1.15	1.15	1.23	1.30
Fortified wines	0.07	0.08	0.23	0.35	0.31	0.31	0.26	0.20	0.10	0.10	0.13
Light wines	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.05	0.06
Total wines	0.08	0.10	0.25	0.37	0.34	0.34	0.29	0.23	0.15	0.15	0.18
Long drinks	-	-	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01
Strong beer	0.01	0.01	-	0.01	0.06	0.10	0.08	0.08	0.07	0.08	0.09
Medium beer	0.25	0.31	0.32	0.30	0.25	0.22	0.24	0.25	0.24	0.25	0.26
Total beer	0.26	0.32	0.32	0.31	0.31	0.32	0.32	0.33	0.32	0.33	0.35
Total alcohol consumption	1.73	1.79	1.87	1.85	1.88	1.97	1.83	1.72	1.62	1.72	1.85

Sources: Alkon vuosikirjat 1950–1960

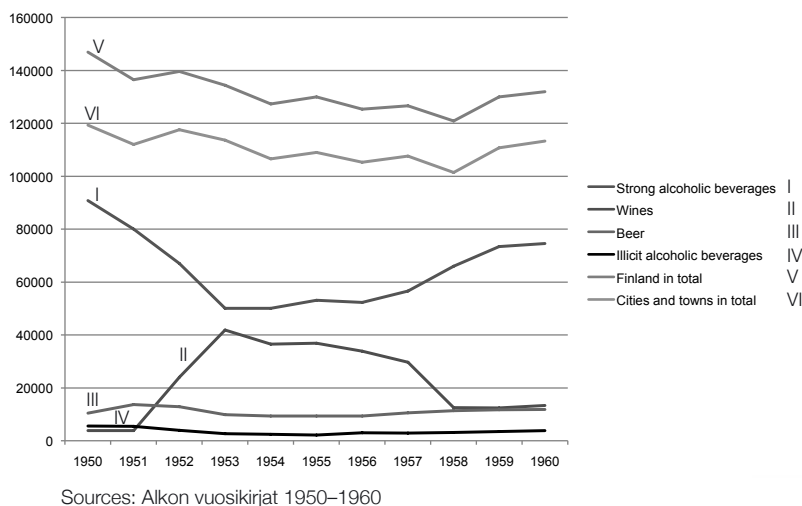
many people drank denatured alcohol in the 1950s and early 1960s, things changed in the late 1960s and early 1970s. All in all: the minor role of illicit alcohol in arrests for drunkenness and the amount and changes in unrecorded alcohol consumption from 1950 to 1975 means that the relation between the number of arrests for drunkenness in cities and towns and the amount of recorded alcohol consumption in the whole of Finland is a good indicator of changes in the relationship between cases of drunkenness and alcohol consumption.

### Purchasing fortified wines without the Alko-issued identity card

At the beginning of 1944 Alko began to issue a specific identity card of its own in larger cities and towns. The system spread to the whole Finland in 1946. The identity card was used as a tool of an extensive system of individualised sales control (see, for example, Bruun 1972; Häikiö 2007). The Finnish system was not a rationing scheme like the Swedish Bratt system,

which assigned a quantitatively defined upper limit for spirits purchases per person with different rations for males and females and partially also for different age groups for a given time period (Bruun & Frånberg 1985). Nor was it a ration card ensuring that all people got a reasonable chance to buy at least a certain amount of alcohol in a given time period. However, for purposes of social policy motivated individualised alcohol control, all purchases of alcoholic beverages in Alko stores were recorded on the card from the year 1947 onwards. If the customer was deemed to buy too much, the Alko identity card could be withdrawn and the customer would lose his or her possibility to buy alcoholic beverages from Alko stores. In 1949, the identity card was waived for beer and light wines but kept for fortified wines and distilled spirits. In May 1952 the identity card requirement was waived also for fortified wines but was kept for distilled spirits.

The consumption of beer and light wines did not change at all during 1951–1953 (Table 1). The consumption of forti-



**Figure 1.** The number of arrests for drunkenness in Finland and in cities and towns in total as well as according to the beverage drunk when becoming intoxicated, 1950–1960.

fied wines increased by 0.27 litres counted in 100 per cent alcohol per capita. During the same time period the consumption of distilled spirits decreased by 0.18 litres. The decrease in the consumption of vodka was 0.07 litres and for other distilled spirits 0.12 litres. Thereby the total alcohol consumption increased from 1951 to 1953 by 0.06 litres.

The increase in the consumption of fortified wines from 1951 to 1953 was the outcome of waiving the requirement to show Alko's identity card when purchasing fortified wines. This change in alcohol control increased the availability of fortified wines in many ways. First, the act of buying became more simple and speedy. Second, the amount of fortified wines was no longer recorded, while this was still the case with distilled spirits. Therefore, there was less of a chance that the customers were seen as having problematic purchases and drinking habits by the personnel controlling the customers. Third,

those who did not possess Alko's identity card found that fortified wine was a clear substitute for distilled spirits as a source of intoxication.

The increase in the consumption of fortified wines mostly applied to cheap domestically produced wines from fruits and berries. As Table 1 shows, most of the increase in the purchases of fortified wines substituted the consumption of distilled spirits. However, the increase was not only a substitution of distilled spirits for fortified wines but also some addition because of greater total alcohol availability.

The number of arrests for drunkenness due to wines increased from 3,958 in 1951 to 41,861 in 1953. This is an increase of 37,903 arrests (Figure 1). During the same period, the number of arrests for drunkenness due to distilled spirits decreased from 80,078 to 50,071 or by 30,007 arrests. For vodka, the decrease was 21,147 and for other distilled spirits 2,860 arrests. The number of arrests for drunkenness due to

**Table 2.** Arrests for drunkenness according to the beverage drunk related to the consumption of corresponding beverage category, arrests per thousand litres of 100 per cent alcohol, 1950–1960.

Beverage category	Year										
	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Vodka and gin	24.9	22.0	17.5	12.9	12.0	11.8	12.5	14.0	16.4	16.9	16.6
Other distilled spirits	6.9	7.4	8.0	7.7	6.7	6.5	6.5	6.9	6.4	6.1	5.7
Total distilled spirits	16.4	14.4	12.5	10.2	9.7	9.6	10.1	11.3	13.1	13.6	12.9
Total wines	11.6	9.7	23.1	27.1	25.1	25.1	26.4	28.8	18.8	17.5	15.5
Total beer	10.2	10.3	9.8	7.7	7.3	6.8	6.9	7.3	8.2	8.1	7.7
Total alcoholic beverages	16.4	14.6	14.7	14.3	13.0	12.7	12.9	13.9	13.7	13.9	13.1

Sources: Alkon vuosikirjat 1950–1960

either beer or various illicit alcoholic beverages or surrogates decreased from 1951 to 1953 by 3,771 for beer and by 2,343 for various illicit beverages or surrogates. This may mean that binge drinkers substituted some of these beverages for fortified wines.

In 1951, the consumption of light wines was only one fourth of the consumption of fortified wines, and the consumption of light wines did not increase from 1951 to 1953 (Table 1). It can therefore be concluded that changes in the number of arrests for drunkenness where wines were recorded as the beverage used when becoming intoxicated reflect changes in the number of arrests for drunkenness because of an increased consumption of fortified wines (see also Bruun 1972; Kuusi 1967). Seemingly, because fortified wines were more readily available, some of those drinkers aiming to get drunk shifted from distilled spirits to fortified wines. The motive to use alcoholic beverages did not change; only the beverages used for becoming drunk did.

While fortified wines gained ground rapidly in 1951–1953 as alcoholic beverages used to become drunk, the majority

of those arrested for drunkenness in 1953 had still been drinking distilled spirits (Figure 1). One reason for this was that in the years 1951–1953 price relations between different beverage categories did not change (Kuusi 1967; Nyberg 1969). Table 2 shows, however, that related to the amount of alcohol consumption there were more arrests for drunkenness in 1951 per litre of ethyl alcohol consumed as wines than as distilled spirits. As the share of light wines in 1953 was only 5 per cent of the total wine consumption, the high value in the number of arrest for drunkenness related to wine consumption comes from the consumption of fortified wines. Certainly, there had not been any changes in the harm-producing properties of fortified wines but the change in the relative alcohol availability had shifted binge drinking from vodka to fortified wines.

### Binding the purchases of fortified wines again to the Alko-issued identity card

Table 1 and figure 1 show that after 1953 there were changes in alcohol consumption and in the number of arrests for drunkenness where wines and especially



fortified wines had been the intoxicating beverage. These changes were the opposite from those in 1951–1953. Partially this also applied to distilled spirits. The fluctuations are explained mostly by changes in alcohol control measures.

In the 1950s, the number of arrests for drunkenness was the most important indicator of developments in the alcohol field, and these figures were also carefully followed. The switch from distilled spirits to fortified wines and the role of fortified wines in arrests for drunkenness was quickly recognised, and countermeasures were taken. In January 1954, the prices of fortified wines were raised by 12 per cent, followed by a 7 per cent increase in August 1955 (Alkon vuosikirja 1954; 1955), and in March 1958 purchases of fortified wines were again tied to the showing of the Alko identity card.

In 1953–1958, the number of arrests for drunkenness due to wine drinking decreased by 29,347, while those arrests where the intoxicating beverage was distilled spirits increased by 15,950. There were some changes already in the period 1953–1957, but the greatest changes took place from 1957 to 1958. The consumption of fortified wines decreased by 0.25 litres between 1953 and 1958, whereas the consumption of distilled spirits increased by 0.03 litres. At the same time, the consumption of light wines increased by 0.02 litres. Beer consumption remained stable. Recorded consumption of alcoholic beverages decreased by 0.23 litres from 1953 to 1958.

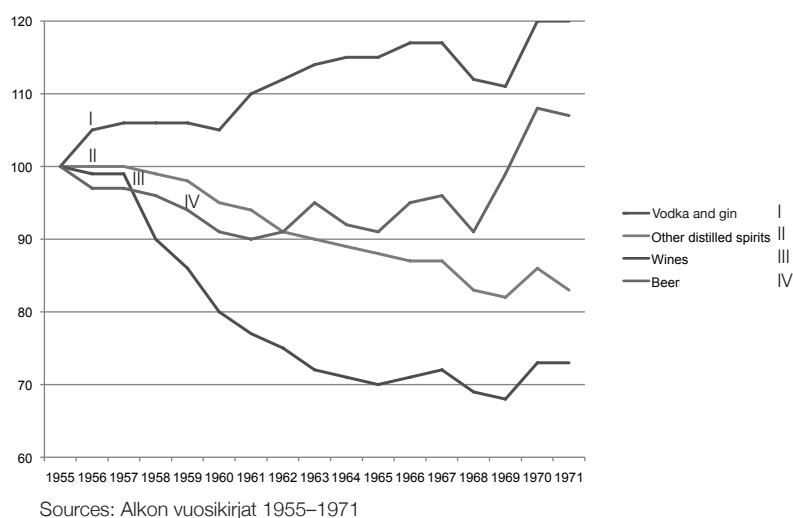
In 1958, Finland was in the middle of an economic recession. It was the second year in a row of decreasing real gross domestic product and of decreasing recorded

alcohol consumption. Without the recession, the decrease in the consumption of fortified wines would have been smaller and the increase in the consumption of distilled spirits greater than they actually were from 1957 to 1958. There was clearly substitution between fortified wines and distilled spirits also from 1957 to 1958. Data on arrests for drunkenness show that a part of those who used alcoholic beverages as intoxicants had in the 1953–1958 period shifted from fortified wines to vodka. Despite this substitution, fortified wines in 1958 still caused more arrests for drunkenness than did distilled spirit when the arrests are related to the amount of alcohol consumption (Table 2).

### **Price policies favouring light alcoholic beverages**

Alko's Board of Administration officially took the policy line of "rather wine than strong alcoholic beverages" in 1959 (Backström 1966; Bruun 1972; Häikiö 2007). The basic idea was to create interest in wine consumption among the general population through three different means. First, wines should be favoured in the pricing of alcoholic beverages. This was easy to do, because Alko's Board of Administration was directly responsible for both the off- and on-premise prices of alcoholic beverages at the time. Second, the customers should be able to see wines in the Alko stores: wines should be prominently displayed, and bigger stores should even have special wine departments. Third, Alko stores should have posters and booklets on the properties of wines and their proper uses (Backström 1966). The motivation behind, and the defence for, such policies was that Alko did not seek to influence the





**Figure 2.** Real price indices of vodka, other distilled spirits, wine and beer, 1955–1971, 1955 = 100.

general population; the only target were those customers who had already entered the Alko store.

The Finnish alcohol monopoly reasoned that knowledge of a product was likely to increase its demand as well as its appreciation. They also pointed out that similar measures had been taken in Sweden already in 1957. Finland, a country with 4.5 million inhabitants, printed 3.5 million brochures on wines by 1965 and launched a designated periodical *Viiniposti* (Wine post) in 1964 (Backström 1966).

In 1956 and 1957, distilled spirits and wines became more expensive in equal measure. When the purchasing of fortified wines was again tied to the showing of Alko's identity card in March 1958, prices of fortified wines came down by 20 per cent as a compensation for extraordinary price increases after 1952 (Alkon vuosikirja 1959, 12). In May 1959, as proof of favouring light alcoholic beverages, the price tag of some fortified wines was lowered by 3 to 7 per cent, and the price of light wines

bottled by Alko dropped by 15 per cent. At the same time, the cheapest vodkas came to be 5 per cent more expensive (Alkon vuosikirja 1959, 12). The prices of domestic vodkas were raised again in November 1959, and those of light wines decreased (Alkon vuosikirja 1960, 14). Increases in the vodka prices continued by about 5 per cent in November 1960 (Alkon vuosikirja 1961), and distilled spirits became dearer also in June 1962. The policy continued in 1963 when the general increases in alcohol prices left wines untouched (Alkon vuosikirja 1963, 12). After July 1963, price increases for vodka and wines have been equal (Figure 2). Figure 2 also shows that beer prices decreased in the late 1950s and early 1960s. The decrease in real prices of beer in the 1957–1961 period happened not by lowering the nominal price of beer but through inflation. Likewise the decrease in real prices of other distilled spirits in the 1960s was based on constant nominal prices or smaller nominal increases than the inflation rate.

**Table 3.** Alcohol consumption in litres of 100 per cent alcohol per capita by beverage categories, 1958–1968.

Beverage category	Year										
	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Vodka and gin	0.77	0.85	0.86	0.86	0.81	0.78	0.74	0.75	0.76	0.80	0.85
Other distilled spirits	0.38	0.38	0.45	0.53	0.61	0.62	0.61	0.64	0.66	0.63	0.58
Total distilled spirits	1.15	1.23	1.30	1.39	1.42	1.41	1.35	1.39	1.41	1.43	1.43
Fortified wines	0.10	0.10	0.13	0.15	0.18	0.22	0.25	0.28	0.29	0.30	0.32
Light wines	0.04	0.05	0.06	0.07	0.07	0.08	0.09	0.10	0.13	0.14	0.16
Total wines	0.14	0.15	0.19	0.22	0.25	0.30	0.34	0.38	0.42	0.44	0.48
Long drinks	0.00	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03
Strong beer	0.07	0.08	0.09	0.12	0.15	0.17	0.21	0.25	0.29	0.33	0.46
Medium beer	0.24	0.25	0.26	0.27	0.27	0.28	0.29	0.31	0.34	0.40	0.48
Total beer	0.31	0.33	0.35	0.40	0.43	0.45	0.49	0.56	0.63	0.73	0.94
Total alcohol consumption	1.62	1.72	1.85	2.01	2.11	2.17	2.21	2.35	2.49	2.64	2.88

Sources: Alkon vuosikirjat 1958–1968

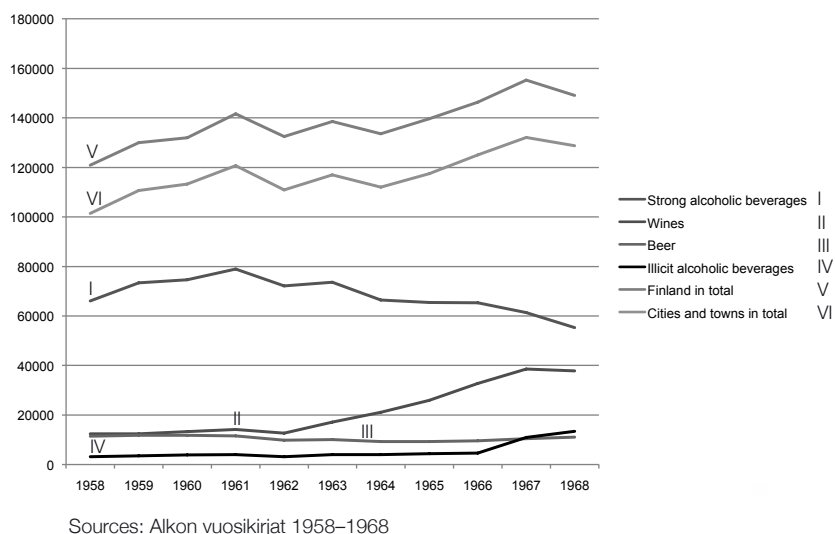
In the 1958–1964 period when wine prices dropped in relation to the prices of distilled spirits, total wine consumption increased from 0.14 to 0.34 litres alcohol per capita or by 0.20 litres (Table 3). Of this increase, 0.15 litres came from fortified wines and 0.05 litres from light wines. Consequently, while the consumption of wines doubled, the increase in the consumption of fortified wines was even faster with a rise of 150 per cent. During the same time period the consumption of distilled spirits also increased by 0.20 litres alcohol per capita. The consumption of vodka decreased by 0.03 litres and that of other distilled beverages rose by 0.23 litres. Even the consumption of beer increased from 1958 to 1964 by 0.18 litres alcohol per capita.

Alcohol prices are not the only factor affecting alcohol consumption. It is in fact difficult to see any bigger substitution from vodka to wines during 1958–1963 which would have resulted from a policy favouring wines over distilled spirits. It is also interesting to note that it was only the real

price of vodka which was increasing while the real prices of other distilled spirits decreased even more than the real prices of beer. Moreover, even if the policy line of light alcoholic beverages emphasised the favouring of light wines, real prices of fortified wines also decreased (Nyberg 1969).

As figure 3 shows, the number of arrests for drunkenness due to wines did not change much in the 1958–1963 period. After 1963, arrests for drunkenness where wine was the intoxicating beverage started to increase while those where drunkenness was caused by distilled spirits were on their way down (Figure 3).

Table 4 shows that for vodka and other distilled spirits the number of arrests for drunkenness related to alcohol consumption decreased slightly in the 1958–1964 period, and even faster after 1964. For wines, there was a clear decrease in the corresponding relation up to 1964 but the number of arrests for drunkenness related to alcohol consumption began to increase for wines. These changes and trends cannot be explained by any clear changes in



**Figure 3.** The number of arrests for drunkenness in Finland and in cities and towns in total arrests as well as according to the beverage drunk when becoming intoxicated, 1958–1968.

alcohol control measures. Pekka Kuusi suggested in 1967 that the increased consumption of light wines as intoxicants could explain the growth in arrests for drunkenness since 1962. His candidates were cheap semi-sweet white wines such as Bordeaux Blanc.

### Medium beer to grocery stores

Finland allowed the retailing of medium beer in 17,431 grocery stores and 1,521 cafés on January 1, 1969. This was beer with an alcohol content of at most 4.7 per cent ethyl alcohol by volume. Until then, it had been sold like other alcoholic beverages in Alko's 132 off-premise retail stores and 1,968 licensed restaurants. There were also other changes in Finnish alcohol controls in 1969. The new alcohol act allowed Alko to open liquor stores also in rural municipalities, and it became much easier to obtain restaurant licences both in towns and cities and in rural municipalities. From the beginning of 1969 on, the

legal age limit for selling light alcoholic beverages, beer, light wine and fortified wine was lowered from 21 to 18 years, and the age limit for selling distilled spirits came down from 21 to 20 years (Mäkelä & Österberg & Sulkunen 1981). Alko's own identity card was abolished in 1971.

The consumption of other distilled spirits, fortified wines, light wines, long drinks and strong beer stayed more or less stable from 1968 to 1969 (Table 5). The consumption of vodka increased by 0.13 litres in terms of 100 per cent alcohol per capita, while the consumption of medium beer increased from 0.46 to 1.62 litres of 100 per cent alcohol per capita or by 1.14 litres (Österberg 1979; see also Mäkelä 2002). In the 1970–1975 period, the consumption of all other alcoholic beverage categories increased except that of medium beer.

We can conclude that the changes in alcohol consumption were additive after medium beer sales began in grocery stores and in "medium beer cafés". There was no

**Table 4.** Arrests for drunkenness according to the beverage drunk related to the consumption of corresponding beverage category, arrests per thousand litres of 100 per cent alcohol, 1958–1968.

Beverage category	Year										
	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Vodka and gin	16.4	16.9	16.6	17.0	15.4	15.9	14.9	14.5	14.2	12.8	11.2
Other distilled spirits	6.4	6.1	5.7	5.7	5.7	6.0	5.5	5.2	5.1	4.7	3.9
Total distilled spirits	13.1	13.6	12.9	12.6	11.2	11.5	10.7	10.2	10.0	9.2	8.3
Total wines	18.8	17.5	15.5	14.0	10.8	12.0	12.7	14.0	15.8	17.4	15.9
Total beer	8.2	8.1	7.7	6.5	5.1	4.9	4.1	3.6	3.3	3.0	2.5
Total alcohol beverages	13.7	13.9	13.1	12.7	11.1	11.3	10.5	10.3	10.3	9.7	8.4

Sources: Alkon vuosikirjat 1958–1968

switch from stronger alcoholic beverages to medium beer. In fact the only substitution that can be found in 1969 was from malt beverages containing less than 2.8 per cent ethyl alcohol by volume to medium beer (Alkon vuosikirja 1969). All beverages which contain more than 2.8 per cent ethyl alcohol by volume are defined as alcoholic beverages in Finland. Malt beverages containing less than 2.8 per cent ethyl alcohol by volume have therefore been sold in ordinary grocery stores since 1932. When in 1969 medium beer was given the same status in grocery stores as

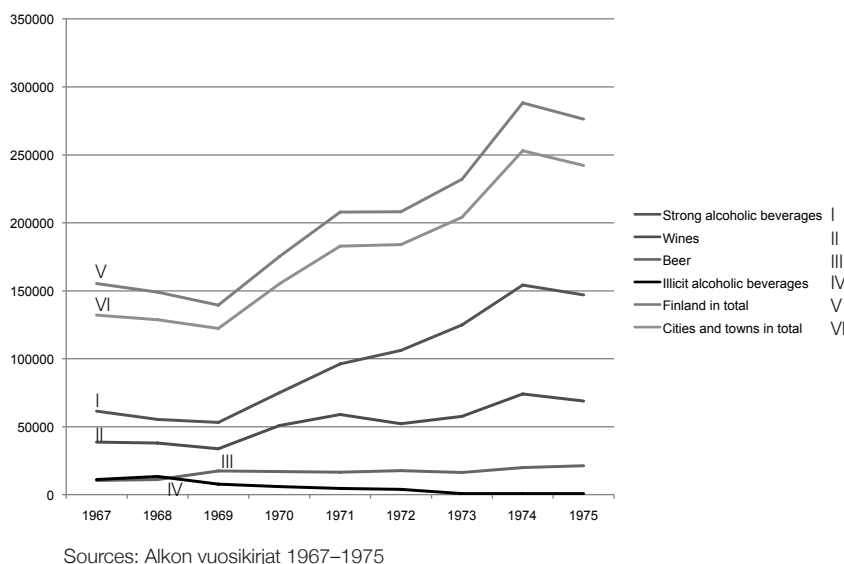
weaker beers, it soon ruined the demand for weaker malt beverages (Mäkelä & Österberg 1975). This substitution was most certainly based on the use of malt beverages and beer as thirst quencher in general and in the sauna bath in particular (Simppa 1983).

Figures 3 and 4 show that the number of arrests for drunkenness due to illicit alcoholic beverages began to rise after the mid-1960s. This reflects the increased use of denatured T-spirits in particular. T-spirits came on the market in 1967, and the data proves that drunkenness arrests peaked

**Table 5.** Alcohol consumption in litres of 100 per cent alcohol per capita by beverage categories, 1967–1975.

Beverage category	Year								
	1967	1968	1969	1970	1971	1972	1973	1974	1975
Vodka and gin	0.80	0.85	0.98	1.09	1.25	1.25	1.41	1.74	1.66
Other distilled spirits	0.63	0.58	0.60	0.66	0.82	0.94	1.05	1.16	1.15
Total distilled spirits	1.43	1.43	1.58	1.75	2.07	2.19	2.46	2.90	2.81
Fortified wines	0.30	0.32	0.32	0.34	0.35	0.34	0.39	0.46	0.40
Light wines	0.14	0.16	0.16	0.19	0.20	0.23	0.30	0.43	0.37
Total wines	0.45	0.48	0.48	0.53	0.56	0.57	0.69	0.89	0.77
Long drinks	0.03	0.03	0.04	0.04	0.04	0.06	0.10	0.18	0.20
Strong beer	0.33	0.46	0.49	0.56	0.60	0.67	0.73	0.76	0.78
Medium beer	0.40	0.48	1.62	1.42	1.45	1.61	1.62	1.71	1.63
Total beer	0.73	0.94	2.11	1.98	2.05	2.28	2.35	2.47	2.41
Total alcohol consumption	2.64	2.88	4.21	4.30	4.72	5.10	5.60	6.45	6.19

Sources: Alkon vuosikirjat 1967–1975



**Figure 4.** The number of arrests for drunkenness in Finland and in cities and towns in total as well as according to the beverage drunk when becoming intoxicated, 1967–1975.

in 1968. The number of arrests for drunkenness on illicit alcoholic beverages and surrogates then began to decrease when different measures to control the sales of T-spirits started to take effect. The production of T-spirits was discontinued in June 1972, and by 1974 the use of surrogates as an intoxicant nearly disappeared (Ahlsström & Österberg 1981). Most certainly the former users of T-spirits and other surrogates or illicit alcoholic beverages did not stop their drinking but they rather took to licit alcoholic beverages (Figure 4).

There were no decreases in the category of distilled spirits and wines in 1968–1975 in the relation of the number of arrests for drunkenness to alcohol consumption (table 6). For beer, this relation decreased after 1968, and was clearly smaller than for vodka and wines. From 1971 on it is possible to compare strong beer and medium beer. The number of arrests for drunkenness related to alcohol consumption is

somewhat smaller for medium beer than for strong beer. In 1971 this relation was 1.6 arrests for drunkenness per thousand litres of 100 per cent alcohol for medium beer and 1.9 for strong beer. In 1975 the corresponding figures were 1.5 and 2.7.

## Conclusions

This article has looked at the possibility of substituting the consumption of alcoholic beverages of a certain alcoholic beverage category with the consumption of beverages belonging to another beverages category by changing alcohol control measures. The four Finnish examples of changes in alcohol control measures in the 1950s and 1960s which affected the relative availability of distilled spirits, wines and beer give quite a different picture of the effects of changes of alcohol control measures on alcohol consumption and arrests for drunkenness.

The first case entailed the waiving in

**Table 6.** Arrests for drunkenness according to the beverage drunk related to the consumption of corresponding beverage category, arrests per thousand litres of 100 per cent alcohol, 1967–1975.

Beverage category	Year								
	1967	1968	1969	1970	1971	1972	1973	1974	1975
Vodka and gin	12.8	11.2	9.8	13.9	15.6	17.1	17.8	17.9	17.7
Other distilled spirits	4.7	3.9	2.8	1.0	1.3	1.3	1.3	1.2	1.4
Total distilled spirits	9.2	8.3	7.1	9.1	9.9	10.3	10.8	11.2	11.1
Total wines	17.4	15.9	13.9	19.1	20.8	17.5	15.3	14.7	15.0
Total beer	3.0	2.5	1.8	1.8	1.7	1.6	1.5	1.7	1.9
Total alcohol beverages	9.7	8.4	5.7	7.3	7.9	7.4	7.6	8.2	8.2

Sources: Alkon vuosikirjat 1967–1975

1952 of the requirement to show an Alko-issued identity card when buying fortified wines in Alko’s off-premise retail stores. This led to an increased consumption of fortified wines which was mostly substitution from distilled spirits to fortified wines. There was also some addition in the consumption of fortified wines and in total alcohol consumption because of greater total alcohol availability. Related to the amount of alcohol consumption, there were after 1951 more arrests for drunkenness per litre of ethyl alcohol consumed as fortified wines than as distilled spirits. Certainly there had not been any changes in the harm-producing properties of fortified wines but the change in relative alcohol availability had shifted binge drinking from distilled spirits to fortified wines.

The second example dealt with re-binding the purchases of fortified wines to Alko’s identity card in 1958. This change led to a decreased consumption of fortified wines which was clearly bigger than the increase in the consumption of distilled spirits. However, Finland was in the middle of a severe economic recession in 1958, and there was a 6 per cent decrease in recorded alcohol consumption. We can

therefore conclude that without the recession the decrease in the consumption of fortified wines would have been smaller and the increase in the consumption of distilled spirits greater. In 1958, too, then, fortified wines and distilled spirits were substituting each other. The data on arrests for drunkenness show that a part of those who used alcoholic beverages as intoxicants had in the 1953–1958 period switched from fortified wines to vodka.

The third example examined 1960s alcohol price policies, which favoured wines and beer over vodka. It is difficult to see any bigger substitution from vodka to wine during the 1958–1964 period when wine prices decreased in relation to prices of distilled beverages, especially to vodka. During these years, total wine consumption increased by 0.20 litres per capita in terms of 100 per cent alcohol as did the consumption of distilled spirits and beer.

The last example pertains to the change in alcohol legislation in 1968 which allowed the selling of medium beer in grocery stores from the beginning of 1969 but left the off-premise sales of all stronger alcoholic beverages to Alko’s liquor stores. From 1968 to 1969, the consumption of

other distilled spirits, fortified wines, light wines, long drinks and strong beer stayed more or less constant, while the consumption of vodka increased by 0.13 litres per capita measured in 100 per cent alcohol. The consumption of medium beer increased from 0.46 to 1.62 litres in terms of 100 per cent alcohol per capita or by 1.14 litres. Nor were there any shifts in arrests for drunkenness between medium beer and other licit alcoholic beverages. We can thus conclude that the changes in alcohol consumption were additive in nature after medium beer was brought to grocery stores and medium beer cafés. There was no substitution from stronger alcoholic beverages to medium beer.

The four examples from Finland show that strong alcoholic beverages can be substituted for lighter drinks, and this substitution seems to work especially when lighter alcoholic beverages can be used for the same purposes as strong alcoholic drinks. It is much more difficult to persuade consumers to switch from strong alcoholic beverages to lighter alcoholic

drinks by changing relative alcohol availability by alcohol control measures or by adjusting prices if they also have to change their drinking habits by, for example, substituting bingeing with vodka to drinking light wines with meals. The Finnish examples also make it clear that changing from one beverage category to another does not automatically mean that the uses of alcoholic beverages or drinking habits themselves will change.

Substitution will take place more likely when the availability of strong alcoholic beverages is restricted than when just the availability of light alcoholic beverages is increased. In cases of availability increases, addition is a more likely outcome than substitution.

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**Esa Österberg**, senior researcher  
National Institute for Health and Welfare (THL)  
Helsinki, Finland  
E-mail: esa.osterberg@thl.fi

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