An overview of the market for alcoholic beverages of potentially particular appeal to minors

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Acronyms

ABPPAMs	alcoholic beverages of potentially particular appeal to minors
ABV	alcohol by volume
ATL	alcopop tax law (Germany)
ESPAD	European School Survey Project on Alcohol and Other Drugs
EACA	European Association of Communication Agencies
HAPI	Health Action Partnership International
HS	high-strength (pre-mixed drinks)
NHF	National Heart Forum
RTDs	ready-to-drinks

Chapter 1 Introduction

This report has been commissioned by the European Commission to provide a European Union wide overview of the market and regulation regarding types of alcoholic beverages with potentially particular appeal to minors. This topic is important because minors are at disproportionately greater risk from the harmful effects of alcohol than their parents or adults in general, and harmful drinking patterns in early life can have lifelong consequences. Thus, if there are alcoholic beverages that particularly appeal to minors and contribute disproportionately to alcohol-related harm, it is important to know this. The report aims to provide better understanding of alcoholic beverages that appeal to minors and to inform those who have responsibility for advising on alcohol policy either at country or European levels.

Alcohol and minors

In the context of this report, the term 'minor' is used to mean under the legal age for purchasing alcohol. This, of course, has problems in that across the European Union there is no common age for the legal purchase of alcohol, with ages ranging from 16 years to 20 years. Because there is variation in published reports, we will sometimes use differing age ranges and different terms.

The consumption of alcohol by adolescents is of concern for a number of reasons. First and foremost, the brain undergoes enormous structural and development changes during adolescence, and there is evidence that alcohol is neurotoxic to the brain at this time (Anderson 2012a). It is not known whether this neurotoxicity itself explicitly impacts on educational achievement, but there is evidence that alcohol use, and in particular heavy use, can impair educational achievement, which in turn has consequences over the life course for human capital development and employment and job opportunities (Anderson 2012b). Secondly, alcohol has a differential impact on risk of death among young drinkers. In England, for example, although, in absolute terms, five times as many alcohol-related deaths occur among 55-64 year olds than among 15-24 year olds, more than 1 in 4 of all male deaths among 15-24 year olds are caused by alcohol as opposed to less than 1 in 12 of all deaths among 55-64 year old males (Jones et al. 2009). Finally, there is evidence that the later the age at which a young person starts to drink, the less likely they are to drink heavily or be identified as dependent on alcohol later in life (Anderson 2012a).

In a survey of 15-16 year olds in 24 EU countries carried out in 2007, the last year of available data, at least two-thirds of respondents reported having drunk alcohol at least once during their lifetime (see Chapter 3). Two-fifths had drunk on between 1 and 5 occasions during the previous 30 days, and 1 in 20 on more than 20 occasions. For the last drinking day, 40% of the average amount of actual alcohol consumed came from beer, 30% from spirits, 13% from wine, 11% from alcopops, and 6% from cider. Over the 12 years 1995-2007, whereas, in general, the proportion of 15-16 year olds reporting alcohol consumption in the last 12 months was relatively unchanged in all countries and for both genders, the proportion of 15-16 year olds who reported having had five or more drinks in one occasion during the last 30 days had, in general, increased. In other words, although there have been no trends in the proportions of 15-16 year olds who drink, among those who do drink there have been trends towards more risky patterns of drinking.

Alcoholic beverages that appeal to minors

In this report we focus on a range of products that are traditionally considered to be of particular appeal to minors. These include:

- **ready-to-drinks (RTDs)** – beverages that are in part a spirit, wine or malt and a non-alcoholic drink, served in a pre-mixed format ready for consumption, and colloquially referred to as **alcopops**
- **high-strength pre-mixes (HS)** – pre-mixed beverages with an alcohol by volume (ABV) content of 15% or above combined with juice or any other soft drink, and
- **ciders and perries**, made from apples and pears respectively.

In preparing this report, we looked for evidence for a differential impact of harm from alcoholic beverages that appeal to minors over and above their alcohol content, and could not convincingly find any. In previous years, alcopops had been claimed to be responsible for a number of alcohol-related negative effects in adolescents. Metzner and Kraus (2007) conducted a systematic analysis of studies stating an alcopop-specific effect. Due to methodological limitations, such as not controlling for total alcohol consumption, evidence of an association between the consumption of alcopops and the effects mentioned above is scarce. Results rather indicated a clear relationship between the quantity of alcohol consumed and alcohol-related negative consequences (Metzner and Kraus 2007).

To investigate this further, taking into account the methodological limitations of the previous studies, Kraus et al. (2010) set out to determine whether the share of alcopops in total alcohol consumption has a differential effect on problematic drinking and behavioural outcomes. Using the data from the 2003 German ESPAD (the European School Survey Project on Alcohol and Other Drugs) and assessing alcohol consumption with beverage-specific quantity measures, individuals were categorised into 'non-alcopop consumers' and 'alcopop consumers'. Age of first alcohol use and first drunkenness, frequency of drinking, episodic heavy drinking and drunkenness and alcohol-related problems were used to measure the investigated effect. The results showed that alcopop consumption is not more likely to lead to problematic drinking and harmful behavioural outcomes. Analyses of the drinking behaviour of alcopop consumers and that of consumers of other beverages showed few differences with respect to the outcome measures. It was therefore established that there is no indication of an alcopop-specific effect (Kraus et al. 2010).

Therefore, alcoholic beverages that appeal to minors could only be of additional concern (i.e. beyond the concerns arising from alcohol in general) if, through their appeal, they cluster as a unique product, have different drivers of use or are used disproportionately by minors. The fact that over four-fifths of the total alcohol consumed by 15-16 years olds comes from beer, spirits and wine suggests that this is not the case. The rest of this report examines this question in more detail. Our conclusion is that such beverages do not form a distinct category of minors' drinking separate from other alcoholic beverages – in other words, it is alcohol that appeals to minors.

On the next page we describe the content and main findings of the following five chapters and the Annexes.

Chapter 2 – Sales

We accessed sales data for alcohol in the European Union from the Euromonitor International Passport Alcohol Database, which included data on sales for the years 1997-2010, split into the categories of total alcohol, beer, spirits, wine, cider/perry and ready-to-drink (RTD) and high-strength pre-mixes (HS). Unfortunately, the readily available data are not segmented by age group, so we can say nothing about minors. Chapter 2 shows that between 1997 and 2010 sales of RTD/HS grew on average in the EU from a baseline of €10 per head of population of legal drinking age per year and 1% of total alcohol sales to a small peak in 2003, after which it decreased and then stabilised during the six years 2005-2010 at sales of about €15 per head of population of legal drinking age per year and 2% of total alcohol sales. There is wide variability between EU countries, which our own analysis for 15-29 year olds shows is partly explained by price; the cheaper the relative price of RTD/HS drinks compared with other drinks, the greater the amount of pure alcohol that is consumed from RTD/HS drinks per head of population. Over the period 2001-2010, there has been a gradual increase in sales for ciders and perries, reaching €28 per head of population of legal drinking age per year, and just over 2.5% of total alcohol sales in 2010. Using a similar methodology to a US estimate of the size of the overall alcohol market among 12-20 year olds, we find broadly the same findings. For example, for the UK, the market value of 12-20 year olds is between €5.2 billion and €6.4 billion, depending on the methodology applied. In the other large European countries for which data are available (France, Germany and Italy), the value of the youth market is substantially smaller than that of the UK market, although it still exceeds €2 billion in Italy, and €3 billion in both France and Germany. In most countries, the estimates show that the commercial value of the alcopops market is relatively large compared to that for beer, wine, spirits and cider, but this comparatively high value is driven to a large extent by the high price of alcopops, for example, compared to beer.

Chapter 3 – Drinking patterns and their drivers

Although ESPAD (the European School Survey Project on Alcohol and Other Drugs) provides some of the best data across Europe on the use of alcohol by 15-16 year olds, it is hampered by being undertaken cross-sectionally only once every four years. Thus, although the last survey year was 2011, results are not yet available, and so in this report we are reliant on data from 2007. ESPAD provides self-reported consumption data for beer, spirits, wine, alcopops and cider. Chapter 3 summarises the ESPAD data referred to above, and considers whether or not drinking alcopops clusters differently from other beverages. In three of four countries studied (Germany, Italy and the UK), we found that alcopops had no distinguishing features different from alcoholic beverages in general. In the fourth country, the Netherlands, to a small extent, alcopops had a minor distinguishing feature, in that one of four clusters was characterised as medium consumers composed of 15-16 year olds who tend to consume comparatively more spirits and alcopops than other beverages. We also consider whether or not there are any specific determinants of alcopop and cider use over and above alcohol use in general. The analyses confirm the findings of systematic reviews of drivers of drinking among young people and do not distinguish between alcopops and other beverage categories. In general, young people from homes with greater incomes and higher educational attainment are likely to drink more. Young people who have parents who drink more are also likely to drink more. And, young people who have friends who drink more are likely to drink more. Over and above these family and social network influences, young people who are more exposed to commercial communications, for whom alcohol is cheaper and who have easier access to alcohol all drink more. The chapter finishes with a brief summary of what is known about the impact of specific policy responses for the group of beverages that this report considers. The basic conclusion is that there is little evidence, and what evidence is available shows little or no impact for policy measures targeted to specific product categories.

Chapter 4 – Country case studies
Three country case studies were carried out, in Germany, the Netherlands and Italy. The German case study focused on the alcopops tax, a specific tax designed to protect minors. Unfortunately, as the case study describes, the tax failed because of its specificity – it was a simple matter for beverage producers to adjust their products to be exempt from the tax. This is demonstrated by the sales data: after the introduction of the tax in 2004, although there was a slight reduction in spending on RTD/HS drinks per population of legal drinking age, this had recovered by 2006. The Dutch case study considered pre-mixes in supermarkets. Although, as the case study points out, pre-mixes have specific characteristics that might make them appealing to a young age group (sweet taste, colourful design and ready-to-drink packaging) and there has been comprehensive marketing of the products, sales of pre-mixes have been decreasing over the last five to ten years, and alcohol consumption among young people, in general, has stabilised in the Netherlands. The third case study from Italy documented trends in drinking among young people. It found that, in general, drinking by 11-16 year olds has been decreasing over the past ten years. And, for those with a risky pattern of drinking, there was no obvious relationship with any specific beverage type, including alcopops.

Chapter 5 – Product case studies
Product case studies focus on: a vodka-based ready-to-drink and a beer mixed beverage with differing flavours. The case studies demonstrate that the marketing strategies – including price, promotion and packaging – are similar across products and are highly sophisticated, glamorous and appealing. Social media and websites dominate marketing strategies, and these are often difficult to regulate and monitor. Furthermore, even when a particular communication strategy is ruled as inappropriate, the marketing strategy may live on when advertisements remain widely available on media outlets such as YouTube.

The purpose of the case studies is not to single out specific brands but to illustrate broader trends through concrete case examples. Therefore, *according to the request of the European Commission*, brand names have been removed from Chapters 4 and 5 of this report.

Chapter 6 – Conclusions
Bringing all the material together, our overarching view is that alcoholic products do appeal to minors, and that their marketing is appealing to minors. However, how the products are packaged and marketed does not seem to depend too much on the characteristics of the product.

Annexes
In preparing this report, we generated many tables and figures. To avoid interfering with the flow of reading, we have placed some of these in Annexes A-D, ordered by chapter. Also, during the production of the report, we came across many data difficulties and deficiencies. We have documented these, with some suggested solutions, in Annex E. In particular, we recommend that commercial data, in particular with age segmentations including minors, need to be more easily accessible to researchers and policy monitors; and that survey data collection, such as ESPAD, needs to be undertaken much more regularly, and also needs to be made much more accessible to researchers and policy monitors. We are publishing a report in 2012 – and, we can only report on data for minors across the European Union that was collected five years ago, in 2007.

References

Anderson P (2012a). The impact of alcohol on health. In Anderson P, Møller L and Galea G, eds. *Alcohol in the European Union*. Copenhagen, Denmark: World Health Organization.

Anderson P (2012b). Alcohol and the workplace. In Anderson P, Møller L. and Galea G, eds. *Alcohol in the European Union*. Copenhagen, Denmark: World Health Organization.

Jones L, Bellis MA, Dedman D, Sumnall H and Tocque K (2009). *Alcohol-attributable fraction for England. Alcohol-attributable mortality and hospital admissions*. England: Northwest Public Health Observatory.

Kraus L, Metzner C and Piontek D (2010). Alcopops, alcohol consumption and alcohol-related problems in a sample of German adolescents: Is there an alcopop-specific effect? *Drug and Alcohol Dependence* 110: 15-20.

Metzner C and Kraus L (2007). The impact of alcopops on adolescent drinking: A literature review. *Alcohol and Alcoholism* 143: 230-239.

Chapter 2
Sales

Summary

This chapter reports the analysis of the sales data taken from the Euromonitor International Passport Alcohol Database in order to provide an overview of the market in alcoholic beverages of potentially particular appeal to minors (ABPPAMs). We present and discuss data on those categories that we have subsumed under the category of ABPPAMs, that is RTD/HS and to a lesser degree cider/perry. On the whole, RTD/HS and cider/perry sales account for a comparatively small, but on average growing proportion of overall alcohol sales with, however, important variations across countries. At first glance, prices appear to account for some of the variations across countries and over time. The nature of the sales data in Euromonitor is such that it does not allow for a disaggregation by age groups, which is an obvious limitation in the context of this report, which has an explicit youth focus. Future work is needed to track more specifically the age profile of sales. This chapter also presents estimates of the commercial value of the youth market in alcopops for a subset of countries, drawing on both the ESPAD data and some of the Euromonitor data. For the UK, the value of the youth market is between €5.2 billion and €6.4 billion, depending on the methodology applied. In the other large European countries for which data are available (France, Germany and Italy), the value of the youth market is substantially smaller than the UK market, although it still exceeds €2 billion in Italy, and €3 billion in both France and Germany. The commercial value of the alcopops underage market is always relatively large compared to that for beer, wine, spirits and cider, but this comparatively high value is driven to a large extent by the high price of alcopops, for example, compared to beer.

Introduction

This chapter reports the analysis of the sales data taken from the Euromonitor International Passport Alcohol Database in order to provide an overview of the market in alcoholic beverages of potentially particular appeal to minors (ABPPAMs). The available sales data includes sales in litres of alcohol in those 24 EU countries for which data were available in the Euromonitor database[1], typically covering the years 1997-2010, split into the following categories: total alcohol; beer; spirit; wine; cider/perry; and ready-to-drink and high-strength pre-mixes. The latter sub-category is split further into ready-to-drink pre-mixes (RTDs) and high-strength (HS) pre-mixes for most variables, and RTDs are sub-divided into four categories: malt-based, spirit-based, wine-based and other RTDs[2]. We present and discuss

1 This includes all EU-27 countries except Cyprus, Luxembourg and Malta.

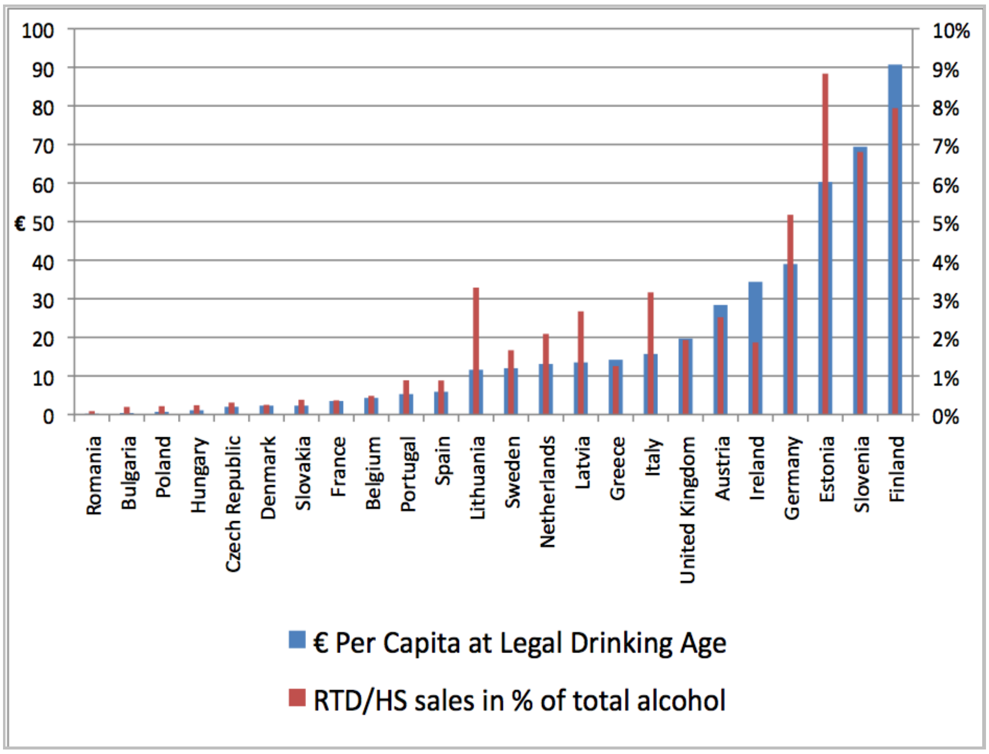
2 Euromonitor gives the following definitions: “RTD stands for ready-to-drink. Other terms which may be used for these products are FABs, alcopops and premixes. The RTDs sector is the aggregation of malt-, wine-, spirit- and other types of premixed drinks. These drinks usually have an alcohol content of around 5% but this can reach as high as 10% abv. Premixes containing a high percentage of alcohol of around 15%+ combined with juice or any other soft drink are included in the category “high strength pre-mixes”. These are usually marketed as a product to be drunk with ice, to mix with an energy drink and/or to make cocktails. Fruit-flavoured, vodka-based spirits with an alcohol content of between

data on those categories that we have subsumed under the category of ABPPAMs, that is, especially RTD/HS and to a lesser degree on cider/perry. We confine the discussion of cider/perry to small verbal descriptions in the text, and give the graphical analysis in Annex A, Figures A1 to A8. In a separate sub-section, this chapter also presents estimates of the commercial value of the youth market in alcopops, drawing on both the ESPAD data and some of the Euromonitor data.

Sales of ready-to-drinks (RTDs) and high-strength (HS) pre-mixes and cider/perry

Sales of RTD/HS drinks can be expressed both in terms of sales per population of legal drinking age, and in terms of RTD/HS sales as a percentage of total alcohol sales (Figure 1). Figure 1 ranks the EU countries by sales per population of legal drinking age. While there is considerable variation within the EU, it appears that those countries that sell more in per capita terms, also sell more RTD/HS as a share of total alcohol (Figure 1).

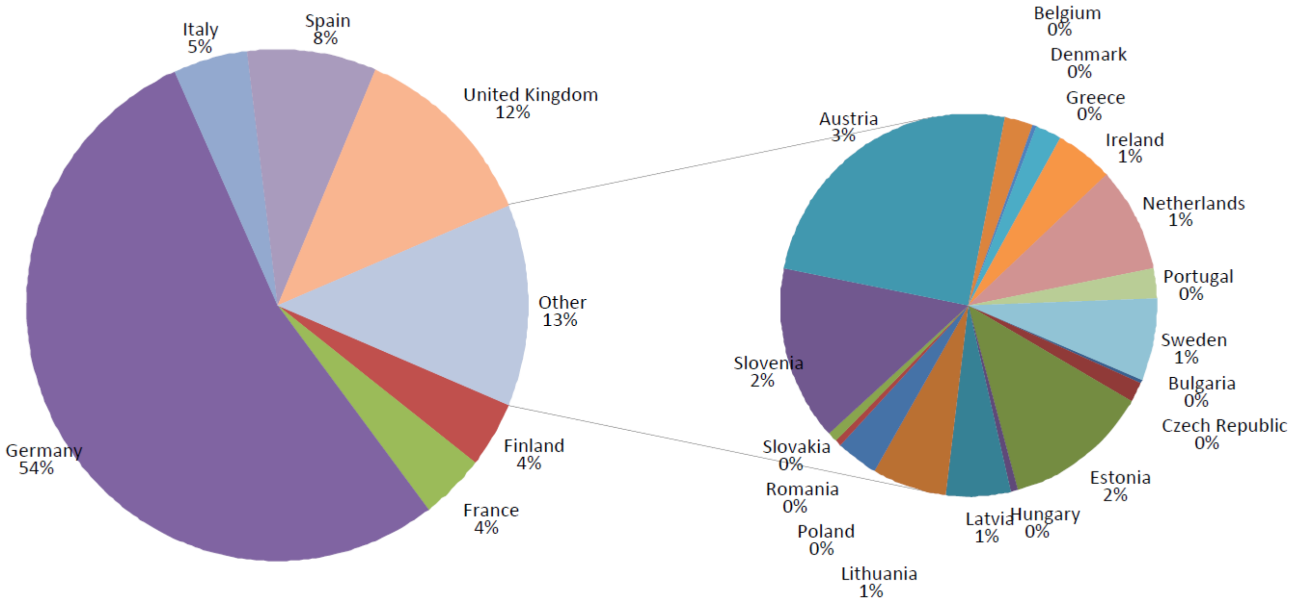
Figure 1: Spending on RTD/HS drinks per person of legal drinking age (constant 2010 prices; fixed exchange rates), off- and on-trade retail sales price, 2010, and as a percentage of total alcohol sales



16-21% are part of this category. Malt-Based RTDs include pre-mixed malt-based beverages, with a typical abv of 5%. These are commonly known as malteratives in the US and radler in Germany and Austria. Malt-based RTDs tend to be a mix of lager and lemonade. Spirit-Based RTDs comprise alcoholic drinks which are pre-mixed prior to packaging and based on a mix of spirits and soft drinks. These drinks have an alcohol content of around 5% although in some countries this may be higher. Wine-Based RTDs include alcoholic beverages which are pre-mixed prior to packaging and based on wine, fruit juice, sugar, and carbonated water. These drinks have an alcohol content of around 5% although in some countries this may higher. The category “Other RTDs” includes any pre-mixes that do not fall under spirits-, wine- or malt-based RTDs." For example, a fermented, alcoholic, mixed fruit drink would fall in this category.

The biggest spenders in absolute and relative terms in 2010 have been Finland, Slovenia and Estonia, well ahead of Germany, which due to its population size accounts for by far the biggest total RTD/HS sales in the EU (Figure 2). The group of countries with the smallest spending on RTDs is dominated by newer EU member states (Slovakia, Czech Republic, Hungary, Poland, Bulgaria and Romania), suggesting that the industry is likely to see the biggest growth potential in those countries and may well target its advertising efforts accordingly. No country spends more than 10% of its total alcohol spend on RTD/HS.

Figure 2: RTD/HS sales: market share by country, 2010



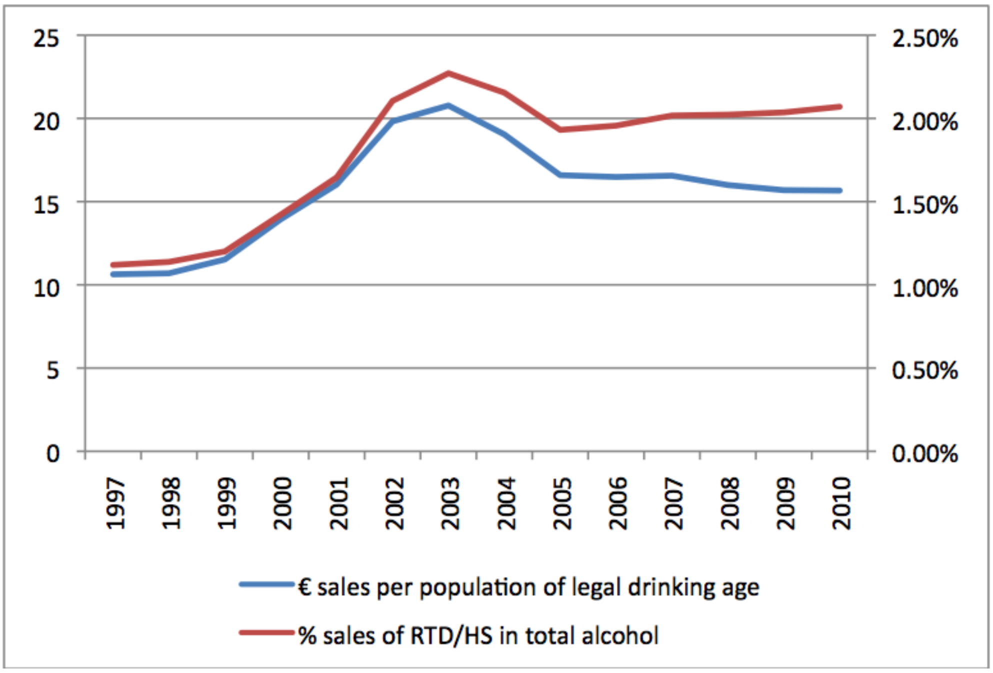
While there is considerable variation within the EU in terms of sales of cider/perry, it appears that those countries that sell more in per capita terms, also sell more cider/perry as a share of total alcohol (Figure A1 in Annex A). The biggest spenders in absolute and relative terms in 2010 were Ireland and Finland, with Denmark and the UK close behind. The UK is the biggest market for cider/perry in the EU when measured by total sales (Figure A2 in Annex A). The group of countries with the smallest spending on cider/perry includes Slovenia, Austria, Bulgaria and Germany. No country spends more than 10% of its total alcohol spend on cider/perry.

In the period 1997-2010, RTD/HS increased on average in the EU – both in terms of per capita sales and as a percentage of total alcohol sales – until about 2003 (Figure 3). Subsequently sales declined significantly for about two years, before stabilizing for the remaining period at about €15 per head of population of legal drinking age, and 2% of total alcohol sales.

Between 2001 and 2010, cider/perry sales increased on average in the EU, both in terms of per capita sales and as a percentage of total alcohol sales (Figure A3 in Annex A).

These averages, however, hide important variations between countries not only in levels but also in trends (see Figures 4 and 5 for a subset of the ten countries with the largest per capita sales in 2010). For instance, there is a considerable increase in per capita expenditures in Estonia, which started in 2003, followed by a steep fall in 2008. This steep fall in demand for RTDs/HS may reflect a substantial responsiveness to income (as 2008 was the year of the economic crisis), although the change was not as pronounced in other countries. On the other hand, although spending on RTD/HS has been relatively high in Ireland throughout the observation period, it has declined since 2002. Most other European countries, including the UK, experienced similar peaks in per capita spending on RTD/HS in 2002-2003, followed by a gradual decline thereafter.[3] Finland differs from most other EU countries in that its per capita spending continued its upward trajectory even after the 2008 crisis, as did Slovenia, if to a lesser extent.

Figure 3: Spending on RTD/HS drinks per person of legal drinking age (constant 2010 prices; fixed exchange rates), off- and on-trade retail sales price, 2010, and as a percentage of total alcohol sales in the EU, 1997-2010

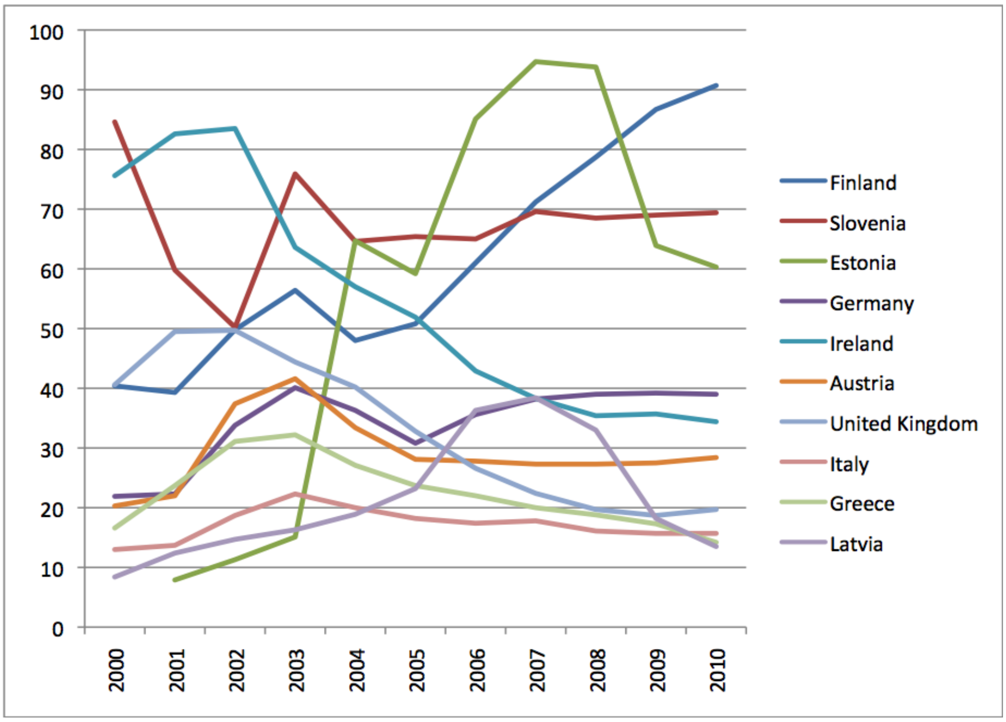


As for cider/perry, the average trends also hide important variations between countries (Figures A4 and A5 in Annex A). For instance, per capita sales in the two leading countries (Ireland and Finland) have been decreasing since about 2001, while sales in the UK have been on the increase since 2005 (and in Denmark since 2007), after previously rather constant levels.[4]

3 Some commentators have interpreted the decline in recent years as a reflection of the satiation of the market (for the UK, see for example http://news.bbc.co.uk/1/hi/business/3503589.stm). The UK example is interesting in that the alcohol industry has taken visible steps to self-commit to a 'Code of Practice' in relation to the naming, packaging and promotion of alcoholic drinks, seeking to ensure that drinks are marketed in a socially responsible way and to an adult audience only. This code was introduced in 1996 in response to fierce criticism of the marketing of 'alcopops' and has since been revised several times (and is currently in its 4th edition, see www.portmangroup.org.uk/?pid=18&level=2), to take into account product innovation and changes in the marketing environment. However, it is not clear how far the introduction of the code and its recent revision have played a role in reducing RTD/HS sales in the UK.

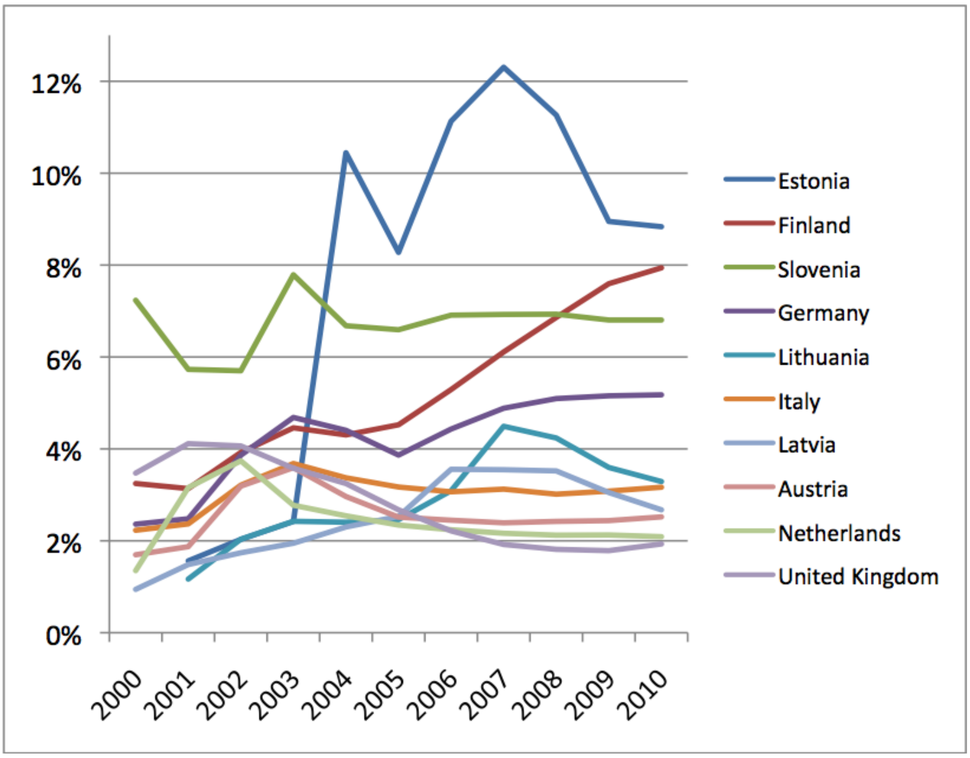
4 Euromonitor International has attributed this rebound primarily to the launch of premium ciders and intensified marketing. See www.marketresearchworld.net/index.php?option=com_content&task=view&id=773.

Figure 4: Spending on RTD/HS drinks per population of legal drinking age (constant 2010 prices; fixed exchange rates, Euros), off- and on-trade retail sales price, 2000-2010



Note: The legend is sorted from top to bottom by the level of per capita sales in 2010.

Figure 5: Spending on RTD/HS drinks per population of legal drinking age (off- and on-trade retail sales price), as a proportion of total per capita alcohol spending, 2000-2010



Note: The legend is sorted from top to bottom by the percentage spent on RTD/HS sales in 2010.

Amount of pure alcohol sold per capita
The total sales figures can also be translated into the amount of pure alcohol sold per capita – a more meaningful figure from a public health perspective. Since different RTD and HS pre-mixes have different alcohol content, and since countries consume different proportions of RTDs and HS pre-mixes, the ranking of the countries could differ from the one presented in Figure 1. As it turns out though, there is no major difference in the rankings (Figure 6). The same conclusion applies to cider/perry (Figure A6 in Annex A).

Figure 6: Amount of pure alcohol sold per 1,000 adult population (in litres), 2010

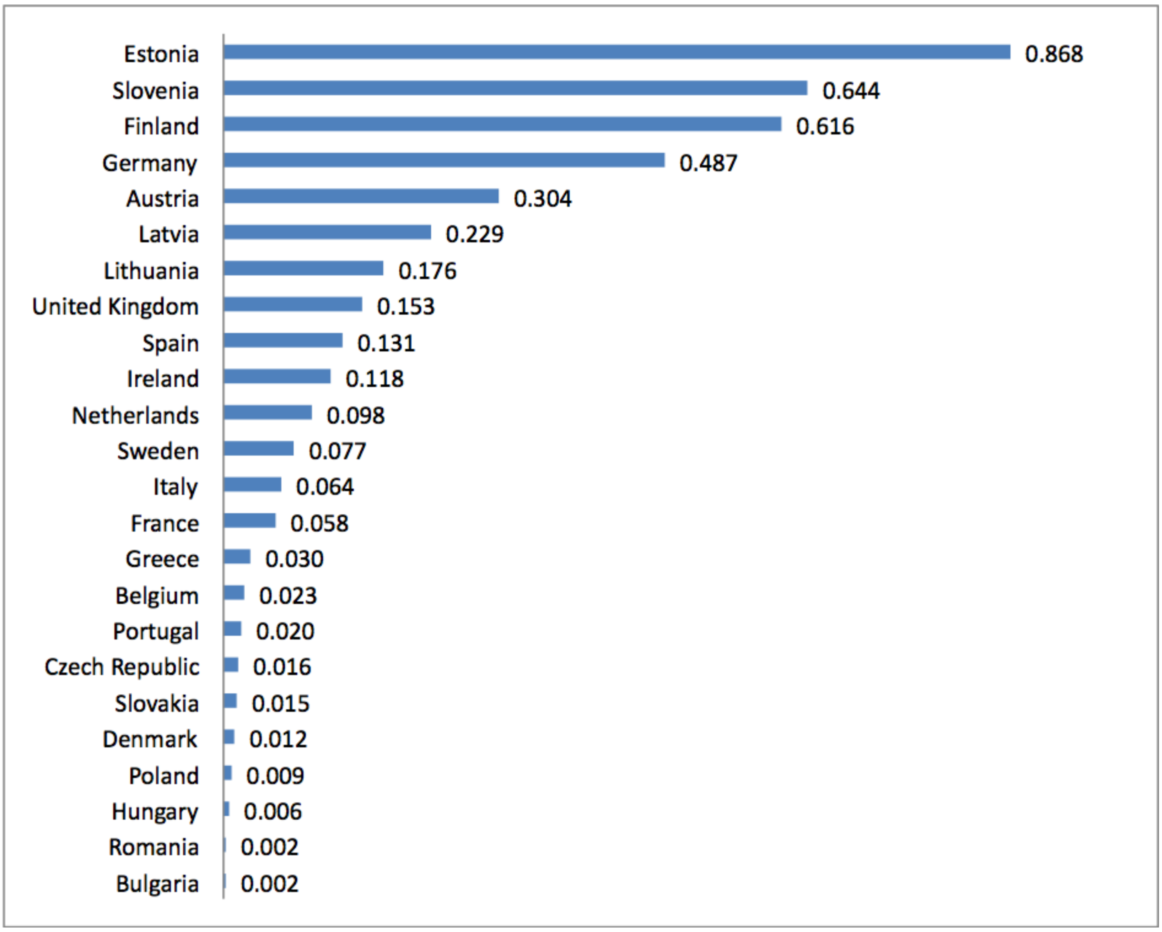
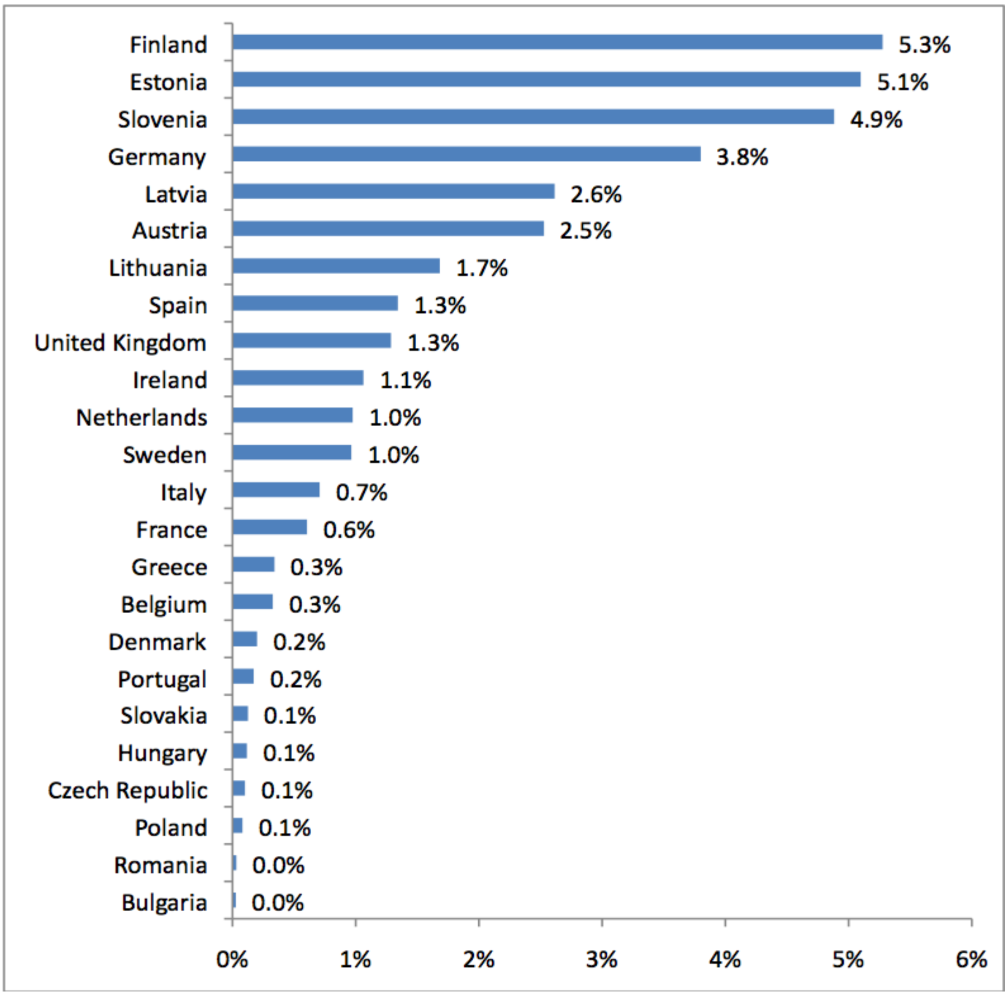


Figure 7 shows the amount of pure alcohol that is consumed from RTD/HS, expressed as a percentage of pure alcohol consumed from all alcoholic drinks. Across the EU, between 0.00% and 5.3% of all pure alcohol sold comes from RTD/HS. Not surprisingly, the ranking again looks very similar to the one in Figure 1, the only notable difference being that the gaps between the countries are smaller.

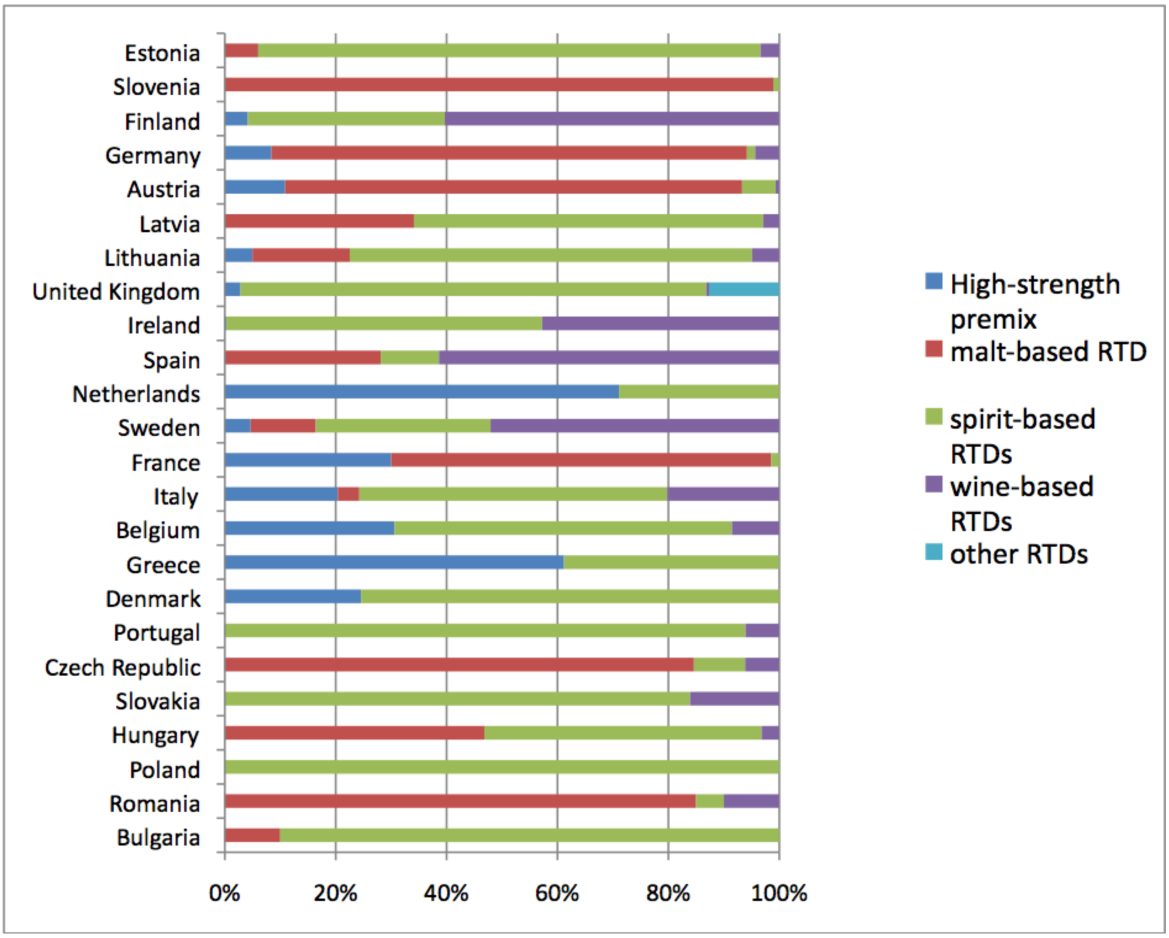
As for cider/perry, across the EU between 0.00% and 7.47% of all pure alcohol sold comes from cider/perry (Figure A7 in Annex A).

Figure 7: Pure alcohol from RTD/HS as a percentage of pure alcohol from all alcoholic drinks, 2010



The category RTD/HS contains various sub-categories, as described on page 6. Not surprisingly, EU countries differ in the relative distribution of sales across these categories. Figure 8 shows the percentages of pure alcohol attributable to the categories HS, malt-based RTDs, spirit-based RTDs, wine-based RTDs and other RTDs. The countries are ranked by per capita pure alcohol content of RTD/HS sales. HS generally accounts for a small share of total per capita pure alcohol, except in the Netherlands and Greece (where it dominates the market). Spirit-based RTDs account for the greatest percentage of pure alcohol content in the three Baltic countries, the UK, Ireland, Italy, Belgium, Denmark, Portugal, Slovakia, Poland and Bulgaria. Countries predominantly focused on malt-based RTDs include Slovenia, Germany, Austria, France, the Czech Republic and Romania. Wine-based RTDs are particularly popular in Finland, Spain and Sweden. The market share of the top three brands for RTD/HS combined, and for HS and RTD separately for all countries is shown in Table A1 in Annex A.

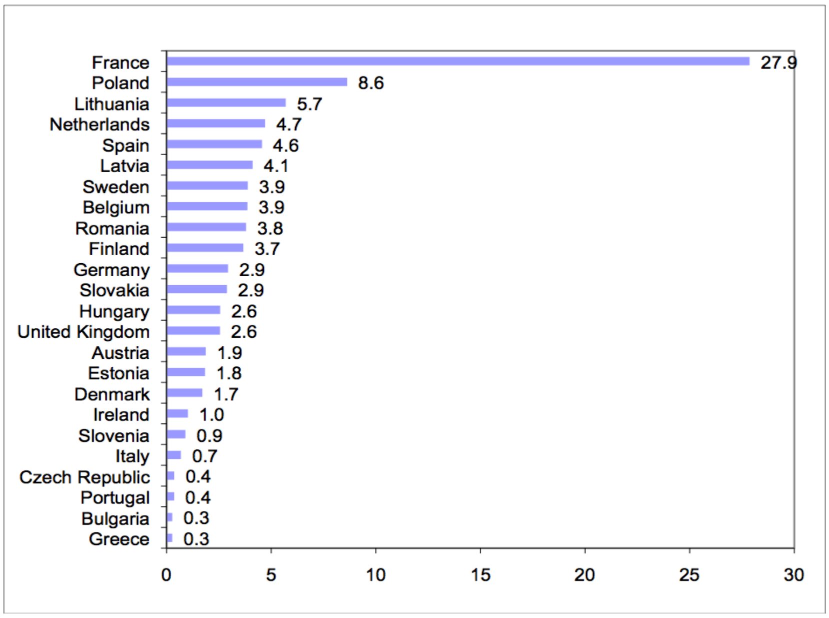
Figure 8: Distribution of pure alcohol attributable to the sub-categories of the RTD/HS category, 2010



In the majority of EU countries, most of the RTD/HS sales, again measured in terms of pure alcohol content, occur in the off-trade (i.e. via supermarkets and other retailers), rather than in the on-trade (i.e. bars, restaurants and pubs) (Figure 9). This is compatible with the notion that RTDs/HS are preferably consumed at home or in other informal locations. France stands out with by far the greatest dominance of the off-trade sales, relative to on-trade, as of 2010. A small number of southern and eastern European countries are different in that they have slightly lower off-trade sales than on-trade. In recent years, the trends in the off-trade vs on-trade ratio have been fairly stable, with the exception of France, which has seen a modest decline in the ratio.

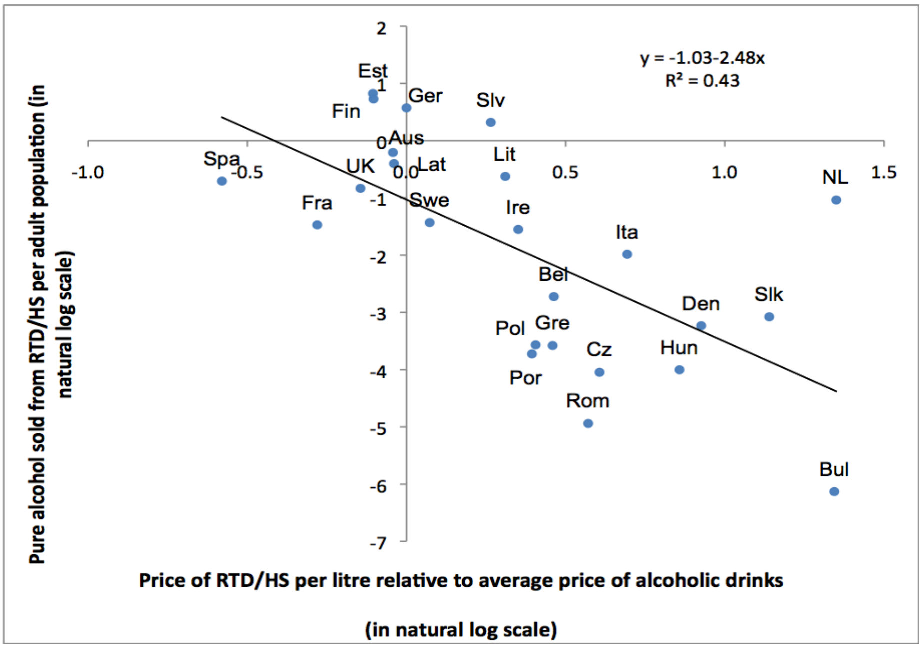
There is a greater preference towards off-trade sales of cider/perry rather than on-trade in most countries, compared to RTD/HS pre-mixes (Figure A8 in Annex A). This is especially true in Lithuania, where sales are about 25 times more likely to be off-trade rather than on-trade. The country which is the largest consumer of this type of drink – the UK – has a much more even split: sales are about 1.6 times more likely to be off-trade than on-trade.

Figure 9: Off-trade/on-trade sales ratio for pure alcohol volume sold from RTD/HS, 2010



The cost of alcohol is generally seen as the single most important determinant of alcohol consumption. Based on our analysis, price does appear to matter significantly. Variations in the price of RTD/HS (especially when expressed as the relative price of RTD/HS compared to the price of all alcoholic drinks on average) across countries at one point in time are closely associated with the variation in pure alcohol consumed from RTD/HS (Figure 10).

Figure 10: Relationship between the relative price of RTD/HS drinks (expressed as price per volume of RTD/HS divided by price of average alcoholic drink) and amount of pure alcohol from RTD/HS per adult population across EU countries (2010, natural log scales)



Note: The line is the linear regression line through the dots.
Source: Euromonitor and own calculations.

The commercial value of the youth alcohol market

This section presents estimates of the commercial value of the youth alcohol market. This is important as it illustrates the potential commercial stakes of the alcohol industry in this particular market. Thus far, few studies have attempted such estimates, an exception being Foster (2003).

We derive our estimates from the 2007 round of the ESPAD survey data, which includes information on a representative sample of European students aged 15-16 years, coupled with beverage-specific price information available from Euromonitor and population data from Eurostat. We use two different, complementary methods to calculate our estimates, which are described in Annex A, together with Tables A2 and A3 of the results. We have chosen the age interval 12-20 years, in order to make our estimate comparable to those of Foster et al. (2003), who was the first to develop broadly comparable estimates of commercial value of underage drinking in the US.

Our estimates are broadly in line with those by Foster et al. (2003), who found that in the US the value of the youth market (aged 12-20 years) of alcoholic drinks was $22.5 billion (in 1999). For the UK, a country with a population five times lower than the US, the youth market value is between €5.2 billion to €6.4 billion, depending on the methodology applied. In the other large European countries for which data are available (France, Germany and Italy), the youth market value is substantially smaller than the UK market, although it still exceeds €2 billion in Italy, and €3 billion in both France and Germany.

The commercial value of the alcopops youth market is always relatively large compared to that for beer, wine, spirits and cider, but this comparatively high value is driven to a large extent by the high price of alcopops, for example, compared to beer. In several countries (e.g. Italy and the Netherlands), the alcopops market represents the largest commercial value out of all the categories of alcohol. In Germany and the UK, the alcopops market value is the third highest, after beer and spirits consumption. The value added by the distribution chain is about two-thirds of the total retail market value.

References

Foster SE, Vaughan RD, Foster WH and Califano JA (2003). Alcohol consumption and expenditures for underage drinking and adult excessive drinking. *JAMA* 289: 989-995.

Chapter 3 Drinking patterns and their drivers

Summary

This chapter describes patterns and drivers of alcohol use among 15-16 year olds, including that of alcopops and cider, the two alcoholic beverages considered of particular appeal to minors captured by the European School Survey Project on Alcohol and Other Drugs (ESPAD). In 2007, the vast majority of 15-16 year old students had drunk alcohol and found it easy to get. The most commonly reported type of beverage consumed over the 30 days before the survey was beer (49%), followed by spirits (40%), wine (35%), alcopops (35%) and cider (28%). On their last drinking occasion, 40% of the average amount of pure alcohol drunk came from beer, 30% from spirits, 13% from wine, 11% from alcopops and 6% from cider. Alcopops are not disproportionately associated with binge drinking. Between 1995 and 2007, there is no overall suggestion of more or less 15-16 year olds drinking during the previous 12 months. However, of those who had drunk during the previous 30 days, there is a suggestion of more 15-16 year olds having had five or more drinks on one occasion. Fifteen to sixteen year olds who live in richer households tend to consume more alcohol than those who live in poorer households, this being stronger for alcopops and spirits than for beer and wine. Parental education generally plays only a small role; for male students, having more educated parents is associated with a higher likelihood of consuming wine and a lower likelihood of consuming alcopops, while there are no associations for female students. The probability of consuming alcohol, and particularly spirits, is significantly reduced when both parents reside in the same household as the child. Young people who have parents who drink more are also likely to drink more. And, young people who have friends who drink more are likely to drink more. Living in a jurisdiction with a higher minimum legal age for the purchase of alcohol results in a later age of first consumption, particularly for wine and alcopops. In general, there are no remarkable or consistent differences of patterns or determinants of alcopops use as opposed to other alcoholic beverages.

Introduction

The two principal objectives of this chapter are to describe the patterns of alcohol consumption among minors, including alcopops and cider, and to assess their determinants, using data from the European School Survey Project on Alcohol and Other Drugs (ESPAD), the methodology of which is described in Annex B.

Difficulty in obtaining access to alcoholic drinks

Students aged 15-16 years were asked how difficult they would find it to obtain beer, cider, alcopops, wine and spirits if they wanted to. On average, almost four in five students (78%) stated that beer would be “fairly easy” or “very easy” to obtain (Table B1 in Annex B). The corresponding figure for wine was 70%, for both alcopops and cider 68%, and for spirits 56%. In general, alcohol is easy to obtain in all countries, more so for beer and less so for spirits. Differences between boys’ and girls’ answers are minor.

Alcohol consumption

In all individual ESPAD countries, at least two-thirds of the 15-16 year old students have drunk alcohol at least once during their lifetime (Table B2 in Annex B). The ESPAD average for all countries is close to 90%. The highest rates of prevalence of having drunk alcohol at any time in their life (above 95%) are found in Austria, the Czech Republic, Latvia and Denmark, and the lowest rates in Spain, Sweden and Romania (about 80%). In most countries, boys have a higher frequency of consumption than girls (Table B3 in Annex B). The difference is larger in southern Europe, while it is narrower in Scandinavia, eastern Europe, Ireland and the UK. The average age of having a first alcoholic drink is typically between 13 and 14 years, with little variation across countries (Figures B1-B4 in Annex B). The pattern of the choice between different types of alcohol products is also fairly similar across countries, with cider being the first beverage to be tried and spirits the last. Young people try alcopops relatively late.

Turning to the frequency of consumption in the last 12 months (Table B4 in Annex B) we find, unsurprisingly, figures to be somewhat lower than for lifetime consumption. The proportion of students who drank between 1 and 5 times during the previous 30 days was about 40% in most countries, with minor differences between boys and girls (Table B5 in Annex B). Only a small minority (approximately 5%) reported drinking more than 20 times in the previous 30 days.

Table B6 in Annex B reports the proportion of students who consumed each beverage on at least one occasion as a proportion of those who reported to have consumed any alcoholic drinks in the last 30 days. The most commonly reported type of beverage was beer (49%), followed by spirits (40%), wine (35%), alcopops (35%) and finally cider (28%). Gender differences are more apparent for two beverages: beer was, on average, far more commonly reported by boys (58% versus 40%), while alcopops were more common among girls (37% versus 33%).

Figures B5-B8 in Annex B document the frequency of drinking different beverage groups during the last 30 days separately for boys and girls and split into countries in which questions about cider drinking were asked (Figures B5 and B6) or not asked (Figures B7 and B8). Alcopops or cider drinking do not stand out in any particular way.

When the students were asked what beverages they used on their most recent drinking day, beer was mentioned by 43%, spirits by 30%, and wine, alcopops and cider by roughly one-fifth each. These results reflect the same pattern of consumption as for reported for in the last 30 days. On average, the students reported a consumption of 33g alcohol on their latest drinking day (Table B7 in Annex B). Forty percent of the average amount drunk came from beer, 30% from spirits, 13% from wine, 11% from alcopops and 6% from cider. Beer made up about half of the boys’ total consumption but only a quarter of that of the girls.

Students were also asked to indicate the frequency of episodes of intoxication. Figures B9-B12 in Annex B document the distribution by beverage type of the total amount of alcohol consumed for binge drinkers (those who reported having had five or more drinks in one occasion during the last 30 days) and non-binge drinkers, split by whether questions about cider were asked (Figures B9 and B10) or not (Figures B11 and B12). No remarkable patterns emerge, and there is no evidence to suggest that alcopops or ciders are used preferentially in binge drinking. The category most frequently consumed by binge drinkers is spirits (both for males and for females).

Trends

According to the ESPAD report (Hibell et al. 2009), between 1995 and 2007 the proportion of students reporting alcohol consumption in the last 12 months was relatively unchanged in all countries and for both genders, with only small erratic movements upwards and downwards. The proportion of students who reported having had five or more drinks in one occasion during the last 30 days, in general increased between 1995 and 2007. Thus it seems that, whereas alcohol consumption among teenagers remains rather stable over the years, the pattern of consumption is changing as it tends to become more concentrated into fewer occasions. This is a pattern which might be considered more traditional in Nordic and eastern European countries but newer in southern European ones.

Determinants of the consumption of alcohol, alcopops and cider among 15-16 year olds

We undertook a literature review of the determinants of alcohol consumption among young people, in the hope of finding literature specific to alcoholic beverages of potentially particular appeal to minors. The literature review and its underlying search strategy are posted on the HAPI website (http://www.hapi.org.uk/what-we-do/eu-overview/). An important, if disappointing result from the review is that there has been very little research in this area.

We examined the role of family background, conditional on a number of other relevant factors, on a range of variables measuring alcohol consumption. (The methodology is described in Annex B and the full results are given in Tables B8-B13 in Annex B.)

We investigated the determinants of the age at which students had their first drink (Table B10 in Annex B). Higher parental education helps postpone the onset of consumption of both alcopops and beer for both genders (except for females in the Mediterranean countries). Children of better-off families start drinking alcopops earlier, while family affluence does not significantly affect the age at which children try beer, wine and spirits for the first time. This result seems to confirm that alcopops are preferred by the more affluent.

We analysed the impact on drinking participation (i.e. having consumed any alcohol at least once in the past 30 days) and on the consumption of different alcoholic beverages (i.e. beer, wine, spirits and alcopops), measured by: having had any drink, regardless of the frequency of consumption, during the 30 days prior to the interview; the frequency of consumption of different alcoholic drinks over the past 30 days; the quantity of alcohol consumed (in grams of pure alcohol) over the past 30 days; and the frequency of alcoholic beverage being consumed a) off premise and b) on premise, respectively.

While there is some variation in the findings across the measurements, the analysis found that, after controlling for parental education and other factors, belonging to a relatively richer household tends to increase alcohol consumption over the past 30 days (with few exceptions, such as among boys in Mediterranean countries). The consumption-enhancing effect of income is larger for alcopops and spirits (about 3%) than for beer and wine (less than 2%). The quantity of alcohol drunk in grams of pure alcohol by beverage category during the last time alcohol was drunk confirms this finding, when comparing better off families (Figure B13 in Annex B), average-income families (Figure B14) and worse-off families (Figure B15). However, when comparing grams of alcopops consumed during the last time alcohol was drunk (Figures B16-B19), or the share of alcopops of all alcohol consumed during the last time alcohol was drunk (Figures B20-B23), there is no relationship with family income.

Parental education generally played only at best a small role in shaping the pattern of consumption of alcoholic drinks. For male students, having more educated parents was associated with a higher likelihood of consuming wine and a lower likelihood of consuming alcopops, while results for females were not significant. The probability of consuming alcohol was significantly reduced when both parents resided in the same household as the child, the effect being larger for spirits than for all other beverages, including alcopops. Not surprisingly, the effect is also greater for alcohol that is consumed at home.

The role of peer effects in determining alcohol consumption

We examined the role of peer effects in determining a range of variables measuring alcohol consumption. (The methodology and complete results are given in Tables B14-B17 in Annex B.) We analysed the impact on drinking participation (i.e. having consumed any alcohol at least once in the past 30 days) and on the consumption of different alcoholic beverages (i.e. beer, wine, spirits and alcopops), measured as: having had any drink, regardless of the frequency of consumption, during the 30 days prior to the interview; the frequency of consumption of different alcoholic drinks over the past 30 days; and the quantity of alcohol consumed (in grams of pure alcohol) over the past 30 days.

Peer effects are important in explaining students' drinking. The probability of having drunk any alcohol in the past 30 days is more than 60% higher when an 'average' student reports that most or all of his/her friends drink. In general, the peer effect is larger for girls than for boys and, except for wine, is smaller in wine-drinking countries than in the remaining countries[5]. If most or all friends drink, the probability of having drunk beer in the past 30 days is on average 68% higher for males and 80% higher for females. The peer effect on alcopops consumption is on average 45% higher for males and 84% higher for females. The peer effect is generally lower for wine and spirits.

Turning to the frequency of consumption in the past 30 days, students who report that most or all their peers drink are also more habitual consumers. For instance, on average, both boys and girls who report that most or all of their peers drink, report drinking beer 11 times more than students with only a minority of friends who drink. Male students report drinking alcopops three times more in the reference period (the difference with beer is significant) and female students eight more times (the difference with beer is not significant). Also in this case females generally tend to be influenced by peers more than males. The peer effect is largest for wine among the wine-drinking countries while the peer effect for beer dominates among the other countries.

The role of minimum legal drinking age in affecting alcohol consumption

We examined the impact of minimum legal drinking age on the age at which young people had their first drink (Tables B18-B19 in Annex B)[6]. The higher the minimum legal age for purchasing alcohol, the later the age when the first drink is consumed (Table B18). Largest effects are obtained in the consumption of wine and alcopops for both males and females. The minimum legal age for purchase seems to be not very effective in diminishing the number of heavy drinkers (defined as those who

5 Wine-drinking countries are Bulgaria, Cyprus, France, Greece, Hungary, Italy and Portugal.

6 Due to the low variability of the legal drinking age across European countries, the use of school and even country fixed effects was not possible. Instead we estimated the model controlling for country level variables taken from different datasets (mainly from the World Bank and Eurostat). In particular we included in the equation:
- a dummy variable indicating whether or not the country mainly consumes wine ("winebelt")
- the proportion of residents who attained an ISCED-3 and ISCED-5 degree as a share of the total population, to indirectly control for the average education of students' parents
- log of per capita GDP
- unemployment rate for individuals aged under 25 (as it could lead to risky behaviours and deprivation)
- duration of compulsory education (in years).

The model is estimated equation by equation. The correlation of the error term within school is taken into account by clustering at the school level.

consume alcohol very frequently). Table B19 shows that the negative effect is significant just for beer and spirits (in the sub-sample of males) and for alcopops only for females. The higher the minimum legal age for purchase, the greater the consumption in off-premises, except for alcopops, where more is consumed in on-premises, especially for boys (Table B20)[7].

References

Hibell B et al. (2009). *The 2007 ESPAD Report: Substance use among students in 35 European countries*. Stockholm: Swedish Council for Information on Alcohol and Other Drugs.

7 In this specific exercise we consider a sub-sample of students (people who had either drunk at least once on premise or bought any drink). We ran a multinomial probit regression constructing the dependent variable as follows: it takes 1 if the adolescent drank at the pub/disco as often as he drinks off-premise; 2 if her preferred place of consumption is the pub/disco and 3 if she mainly consumes alcohol bought in a shop. 2 is chosen as reference point thus excluded by the equation.

Chapter 4
Country case studies

Summary

This chapter describes three country case studies: one for Germany, a predominantly beer-drinking country; one for Italy, a predominantly wine-drinking country; and one for the Netherlands, also a predominantly beer-drinking country. In all three countries, the trends in alcohol consumption among young teenagers have been downwards. Despite concern about alcopops and ready-to-drinks (RTDs) in all three countries, the two case studies from the Netherlands and Italy find favourable trends in alcohol consumption among those aged 16 years or less. In both countries this has happened without any policy changes. In Germany, the much quoted alcopop tax law simply switched spirits-based RTDs to beer-based RTDs. As an unintended consequence of the law, RTDs become cheaper and available to a younger legal age (16 years as opposed to 18 years), and even though the consumption of alcopops decreased, total volume of alcohol consumed did not change significantly between the years 2003 and 2007. In all three countries (and also in the UK), alcopops do not form a distinguishing category of drinking patterns among 15-16 year olds, with the one minor exception of the Netherlands, in which one of four drinking categories, medium consumers, is composed of 15-16 year olds who tend to consume comparatively more spirits and alcopops. Two things emerge from the country case studies: first, RTDs do not stand out as important to minors in magnitude or in any way different to other alcoholic beverages; and, second, specific measures targeted, for example against specific drinks such as alcopops, fail because of their specificity.

Case study: Germany

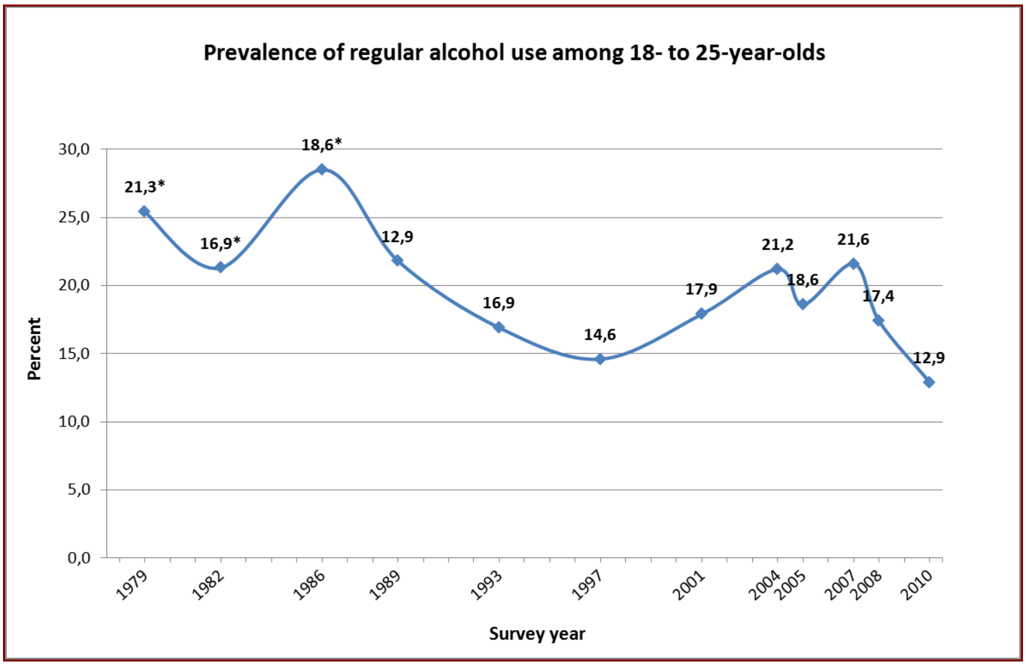
Alcopops were introduced to the German market during the 1990s. Due to concerns about their appeal to adolescents, alcopops quickly became the focus of public concern. As a reaction to this, a law “for the improvement of the protection of young persons against the risks of alcohol and tobacco consumption” was passed on 1 July 2004. This law increased the tax on spirit-based pre-mixes with an alcohol content of between 1.2% and 10%, as well as obliging manufacturers to print a warning of the legal age limit directly on the product. In this case study, we describe the impact of this law on the alcoholic beverage industry and on young drinkers. In Germany, the legal age for purchasing alcohol is 16 years for beer and wine, and 18 years for spirits.

Context of drinking among minors in Germany
Trends of alcohol consumption among 18-25 year olds show an overall decrease between 1979 and 2010 (Figure 11). Among 12-17 year olds, risky consumption, defined as an average intake of more than 24g ethanol per day for males and more than 12g ethanol per day for females, as well as binge drinking have also declined over the period 2004-2010 (BZgA 2011).

Do alcopops form a distinct cluster of drinking in Germany?

Through cluster analysis[8] of ESPAD data (see Chapter 3), we investigated whether alcopops and cider – the alcoholic drinks with a supposedly particular appeal to minors – determine specific patterns of alcohol consumption for 15-16 year olds (Tables C1-C2 in Annex C). Four clusters emerged, mainly determined by the level of total alcohol consumption: low, lower-middle, upper-middle and high consuming minors. The only beverage influence was found among upper-middle consumers who tended to drink spirits rather than other products. The use of alcopops was not a distinguishing feature, and its consumption followed that of other drinks.' (We also undertook cluster analysis among UK 15-16 year olds and found an almost identical picture [Tables C3-C4 in Annex C].)

Figure 11: Prevalence of regular alcohol use (consumption at least once a week) among 18-25 year olds Germany, 1979-2012



Source: Bundeszentrale für gesundheitliche Aufklärung, 2011.

Alcopop tax law

The alcopop tax law (ATL) was introduced on 1 July 2004, as part of the law to improve the protection of young people from the harms of alcohol and tobacco use (BGBl. I S. 1857). Based on the ATL, a tax was introduced on certain spirit-based mixed drinks at a level higher than the regular duty on spirits. In the ATL, alcopops are defined as drinks (also in frozen form) that are made up of a mix of beverages with an alcohol content of 1.2% ABV (alcohol by volume) or less or of fermented beverages with an alcohol content of more than 1.2% ABV and products covered in §130 Abs. 1 of

8 Cluster analysis is purely descriptive and aims at grouping observations according to a given distance criterion. In other words, it tries to find clusters in the data whose points (observations) are close to each other but distant from the points belonging to other clusters. In the following analysis, in the spirit of Rouillier et al. (2004) and Craigs et al. (2011), we adopt Ward's hierarchical method using the Euclidean distance to define clusters. The number of clusters is determined jointly by inspection of the cluster tree and by the use of the Calinski/Harabasz pseudo-F index stopping rule and the Duda/Hart Je(2)/Je(1) index stopping rule.

the spirit monopoly law ("Gesetz über das Branntweinmonopol"; http://www.bfb-bund.de); that have an alcohol content of more than 1.2% ABV but less than 10% ABV; that are bottled ready-made; and that are subject to §130 Abs. 1 of the spirit monopoly law.

The tax depends on the amount of alcohol the beverage contains, and amounts to €5,550 for one hectolitre of pure alcohol. The price of a standard bottle of 275ml with an alcohol content of 5.5% increased by approximately €1. The tax accounts for 85 cents; the rest is accounted for by the value added tax which is raised through the increased alcopop tax. The tax rate was calculated in order to achieve the aim of an alcopop price increase that would result in a reduction in alcopop consumption by children and adolescents. The net revenue is allocated to the German Federal Centre for Health Education for the funding of substance-use prevention activities.

In the course of the ATL, the law for the protection of the youth was also adjusted. It now stipulates that information has to be printed on the front label of spirit-based alcopops stating "Release prohibited to persons under the age of 18 years, §9 Jugendschutzgesetz". This statement has to be in the same font, size and colour as the brand name (see Figure 12).

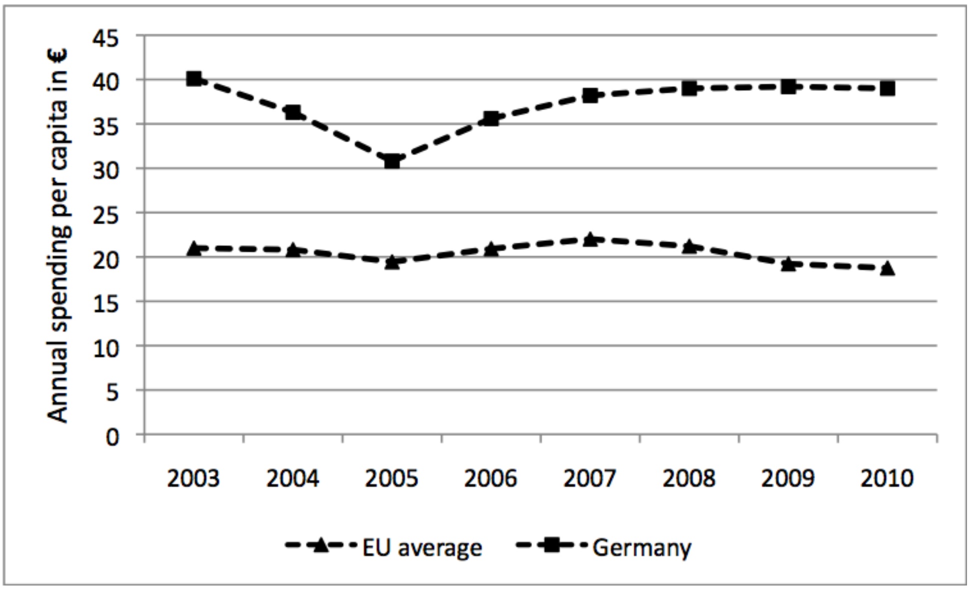
Figure 12: Label stating the legal drinking age for alcopops, printed on all alcopop products by law

Consequences of the alcopop-specific tax

In 2005, alcopops were the source of €9.6 million of tax revenue. In 2010, the revenue dropped by 75% to €2.4 million. This compared to falls in tax revenue from beer of 8.3% and of spirits of 7.1% over the same time period (Euromonitor International 2011a). The total volume of spirit-based RTDs fell by 74.2% in Germany between 2005 and 2010 (Euromonitor International 2011a). In fact the sales of alcopops plummeted so markedly that it had a profound effect on some of the largest retailers of alcoholic products in Germany. In 2008, a major international drinks producer took two alcopop brands off the market.

However, when considering the annual spending per capita on RTDs and high-strength pre-mixes, a totally different picture emerges. Although a decline in spending can be observed after the introduction of the ATL in 2004, a steady increase since then has brought per capita annual spending on RTD/HSs of the legal drinking age population to €39, nearly the same amount Germans were spending on RTDs and high-strength pre-mixes before the introduction of the ATL (€40) (Figure 13). Spending on RTDs and high-strength pre-mixes in Germany has been above the EU average throughout the years, despite the introduction of the ATL (Euromonitor International, 2011a). This suggests that the alcohol industry as a whole responded to the ATL by introducing new RTDs and high-strength pre-mixes that are exempt from the ATL. Of the 33 key new product developments in Germany in 2009 and 2010, 14 were new RTDs or high-strength pre-mixes (Euromonitor International 2011b).

Figure 13: Spending on RTD/HS drinks per population of legal drinking age (constant 2010 prices; fixed exchange rates), off- and on-trade retail sales price, 2003-2010, in EU average (unweighted) and Germany



Source: Euromonitor International 2011a.

Reactions of the alcohol industry

The introduction of malt-based RTDs (generally beer-mixes) contributed to the increase on spending on RTDs. With a growth of 41.4% in total volume since 2005, this was the strongest growing RTD type in Germany (Euromonitor International, 2011a). Due to their malt or beer base, these beverages do not fall under the term 'alcopop' as defined by the ATL. They are therefore a cheaper alternative to alcopops, while being similar in flavour, colouring and marketing. Additionally, the legal age of purchase for beer-based products is 16 years, making malt-based pre-mixes more readily available to a younger consumer group. Since the ATL applied to products with an alcohol concentration of between 1.2% and 10%, a number of high-strength pre-mixes have been introduced since the start of the ATL, as an alternative to alcopops. These include traditional long drinks such as gin and tonic, vodka and cranberry, or rum and coke, as well as a number of pre-mixed cocktails such as canned 'mai tais' or ready-to-drink daiquiris and piña coladas. The exotic flavours and the resemblance to popular soft drinks create the same appeal for minors as malt-based RTDs.

A further important characteristic is cost. Minors usually have a limited disposable income, which increases the appeal of cheaper products in this age group – an idea also held by the German government when drafting the ATL. However, beer-mixes are exempt from the ATL. A standard brand-name spirit-based alcopop costs €10.55 per litre, a standard brand-name beer mix costs €2.65 per litre when shopping online (www.lebensmittel.de). Furthermore, a litre of a brand-name high-strength pre-mix, for example rum and cola, costs €8.03. Although this price difference is not as great as the price difference between alcopops and malt-based RTDs, the alcohol content of such high-strength pre-mixes is nearly double that of a standard spirit-based alcopop (10% and 5.5% respectively).

One of the appeals of RTDs with minors is the packaging and look of the product (Jones & Reis, 2011). Figure 14 illustrates the similarities in colouring and packaging of the malt-based RTDs and alcopops, and Figure 15 the resemblance of high-strength pre-mixes to soft drinks. Furthermore, the legal age of purchase for these products (18 years, as they contain spirits) is not necessarily acknowledged by vendors, as there is no such warning on the containers, as there is with alcopops.

Figure 14: Similarities in colouring and packaging of malt-based RTDs (left) and alcopops (right)

Source: www.drinkmix.de; www.nurbier.de; www.newsbiscuit.com.

According to a report on alcoholic beverages and the media conducted shortly after the introduction of the ATL (SevenOne Media 2005), the producers of spirits cut their advertising budget by €20 million in the year 2004 compared to 2003, a drop of 18%. Although other branches of the alcohol industry also experienced a drop in investments in advertising within this time frame (with the exception of the wine industry) with a drop of 3.8% in the beer industry and 6.5% in advertising of sparkling wine, no drop was as drastic as that within the spirits industry. The gross amount invested in the advertising of alcopops fell from €26 million in 2003 to €3 million in 2004 (SevenOne Media 2005). At the same time, spending on advertising of beer-based RTDs increased by 12.5% from 2003 to 2004 (SevenOne Media 2005).

Changes in young people's drinking behaviour since the introduction of the alcopop tax

Changes in young people's drinking behaviour since the introduction of the alcopop tax reflect the changes in the sales data described above. The mean weekly amount of pure alcohol consumed by 12-17 year olds as alcopops fell from 8.3g in 2004 to 2.8g in 2007 (BZgA 2007). However, the mean weekly intake of alcohol, regardless of beverage type, rose from 44.2g in 2004 to 50.4g in 2007. This points to a shift in beverage type among adolescents, as a rise in general alcohol consumption could be observed, along with the drop in alcopop consumption. The beverage preference shifted particularly towards beer, as well as beer- and wine-based RTDs, for which the mean weekly amount of alcohol consumed nearly doubled in the three years following the ATL (BZgA 2007). In 2004, adolescents aged 12-15 years ingested most alcohol via beer, followed by alcopops (based on the average weekly amount of alcohol in grams) (BZgA 2007). In third place was wine, followed by spirits, and then by beer- and wine-based RTDs and finally long drinks and cocktails. In 2007, beer remained by far the main source of alcohol intake, but was followed by beer- and wine-based RTDs, spirits, long drinks and cocktails and wine. The least amount of alcohol was consumed via alcopops. In 2010, beer and beer-based RTDs remained the main source of alcohol intake among this age group. Though alcopops were not the least preferred, this beverage type had dropped from second largest source of alcohol intake in 2004 to fifth (BZgA 2007, 2011). Similar shifts were seen in the 16-17 years age group.

Figure 15: Examples of high-strength pre-mixes (above) and soft drinks and energy drinks (below)

Source: Top row, from left to right: www.worldofdrinks.de; www.bacardi-deutschland.de; www.canco.de.
Bottom row, from left to right: www.amazon.de; www.kafee4all.de; www.lipton.com.

Using ESPAD survey data from 2003 and 2007, Müller et al. (2010) found no significant change in total alcohol consumption between the years 2003 and 2007. However, there was a decrease in alcopop consumption and an increase in spirits consumption. Beer was the beverage of first choice among adolescents in both years. In 2007, the proportion of students who preferred alcopops had decreased, making alcopops the least favoured beverage type, compared to the second favourite in 2003. In 2003, the least preferred beverage type was spirits. After the introduction of the ATL, spirits gained in popularity and became the beverage of third choice among adolescents. The results reported by Müller et al. (2010) are also reflected in the sales data mentioned in the previous section.

What this case study shows

Considering there is no evidence for an alcopop-specific effect on drinking behaviour and alcohol related problems (see Chapter 1), it could seem counter-intuitive to introduce an alcopop-specific tax. By narrowing the applicability of the tax to only spirit-based RTDs with an alcohol content of up to 10%, the law is very vulnerable to loopholes. These loopholes have given way to other potentially risky beverages with a particular appeal to minors, as can be seen in the results presented in this case study. We have observed an increase in the range of RTDs and high-strength pre-mixes and an increase in sales of these particular products as well as the consumption of beer and spirits. As Müller et al. (2010) was able to demonstrate, since the introduction of the ATL there has been considerable beverage substitution among minors. With a wide range of malt-based RTDs and high-strength pre-mixes, the potential for risky drinking behaviour among minors still remains. These drinks are the result of a loophole within the ATL and are more easily affordable for minors. In addition, the legal drinking age of any beer-based beverage is 16 years in Germany, and, thus, the wide range of malt-based RTDs is available to a broader audience than alcopops had been. Therefore, although the consumption of alcopops has declined among minors thanks to the ATL, the consumption of alcohol has not, and, if anything, has increased. *Additional RTD/HS data for Germany is in Figures C1-C4 in Annex C.*

Case study: Netherlands

The Dutch case study is focussed on alcoholic pre-mix drinks available in supermarkets. Only alcoholic beverages with an ABV (alcohol by volume) below 15% can be sold in Dutch supermarkets (Drank- en Horecawet 2011). Stronger drinks can only be sold in liquor stores. Pre-mixes consist of ‘alcopops’, ‘RTDs’ (ready-to-drink) as well as ‘FABs’ (flavoured alcoholic beverages). Almost all of these pre-mixes have been introduced over the years by spirits producers. In the Netherlands, the legal age of purchase for beer and wine is 16 years, and for spirits 18 years. Provided spirits-based RTDs have an alcohol content below 15% they can be sold in supermarkets, with a minimum purchase age of 16 years.

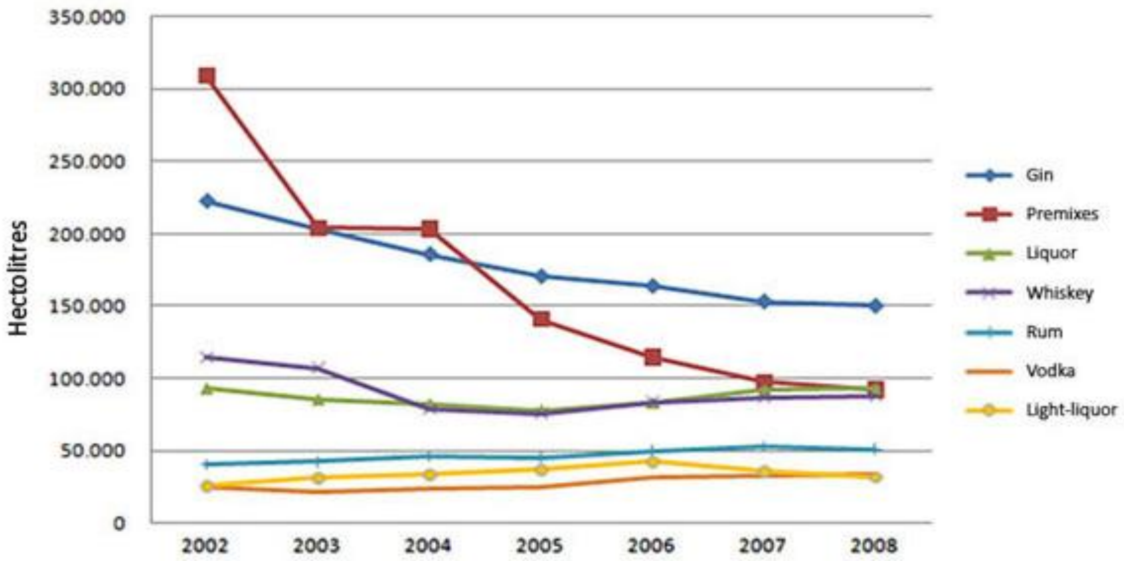
Do alcopops form a distinct cluster of drinking in the Netherlands?

As in Germany, four clusters were found in the Netherlands, but with the clusters determined by both the amount of alcohol consumed, and the composition of consumption (Tables C5-C6 in Annex 3). There are two clusters of light and heavy consumers, and two further clusters are characterized as medium consumers, one of which is composed of people whose preferred beverage is beer while the other is composed of people who tend to consume comparatively more spirits and alcopops. The Netherlands is the only country among the four we have analyzed (the fourth being the UK) in which the consumption of alcopops is part of what distinguishes one set of consumers from others, but only in a minor way.

The sales of pre-mixes in the supermarket

In the Netherlands, pre-mixes are sold in supermarkets and liquor stores. Between 2007 and 2009 the number of pre-mixes available in supermarkets decreased from 125 to 106 different products. In the same period, the supply in liquor stores increased from 84 to 99 products (Nielsen Media 2009). This shift is despite the fact that supermarket prices are much lower than liquor store prices for the same product (Van den Wildenberg 2010). The decline of the supply of pre-mixes up to 15% alcohol by volume in the Dutch supermarkets reflects the overall decline in sales of strong alcoholic beverages over the period 2002-2008, particularly for pre-mixes (Van den Wildenberg 2010) (Figure 16). Nevertheless, underage people can buy very easy alcohol; mystery shopping studies have shown that three-quarters of 15 year olds were able to buy alcohol from supermarkets (Mulder 2009).

Figure 16: Sales (hectolitre) per type of (strong) alcoholic beverages, 2002-2008



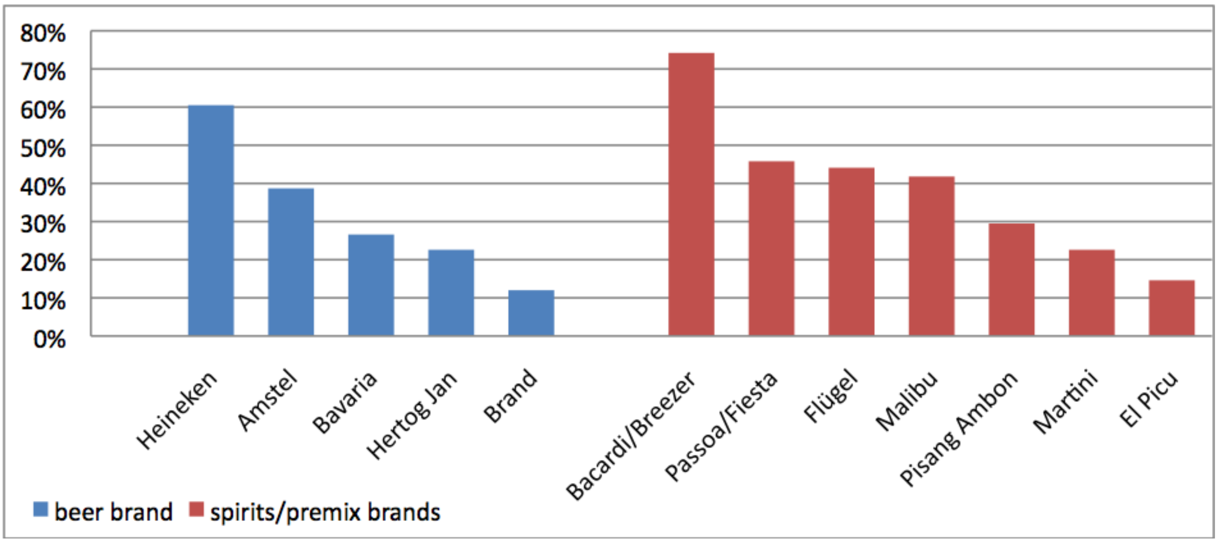
Source: Van den Wildenberg 2010.

Pre-mixes reaching youth markets

In 2009, adolescents aged 12-17 years in the Netherlands had more commonly drunk over the lifetime a spirits/pre-mix brand than a beer brand (Figure 17).

Figure 17: Percentage of 12-17 year olds who drunk a specific brand

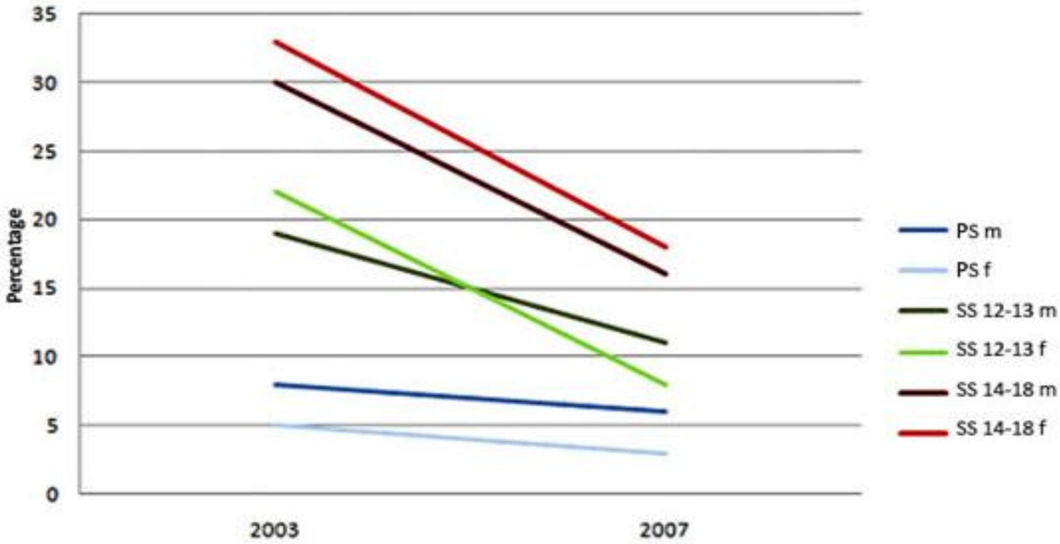
N = 349



Source: Van den Wildenberg 2010.

However, the weekly consumption of pre-mixes among 12-18 year olds has declined considerably over the period 2003-2007 (Peilstationsonderzoek 2003, 2007) (Figure 18). During this time, no new policies were implemented.

Figure 18: Percentages of teenagers who consume pre-mixes on a weekly basis



PS = primary school (class 7/8, age 10-12 years) SS = secondary school m = male f = female.
For secondary school, the data are split into two categories (12-13 years and 14-18 years).
Note: Figure 20 is compiled from responses by teenagers who consume pre-mixes on a weekly basis. The data originate from the 'indexing research' from the Trimbos-Institute.
Source: Van den Wildenberg 2010.

However, the Alcohol Licensing and Catering Act was amended in 2011 to give local authorities new powers to forbid significant price promotions, such as happy hours in bars and price breakers in supermarkets and liquor stores; to enforce all the rules regarding the selling of alcohol (previously, the enforcement was in the hands of the national Food and Consumer Product Safety Authority); and to prohibit the sale of alcoholic drinks for 1 to 12 weeks for supermarkets frequently violating underage drinking regulations. In addition, the new law makes the possession of alcohol in public places a punishable offence for children under 16 years.

What this case study shows
Although ready-to-drinks are widely available in supermarkets in the Netherlands at cheaper prices than in liquor stores, and are commonly drunk by teenagers, the evidence over recent years shows that the sales of ready-to-drinks are decreasing, the range of products in supermarkets is decreasing, and drinking of pre-mixes by teenagers is decreasing. All of this has taken place without any obvious change in policy. *Additional RTD/HS data for the Netherlands is in Figures C5-C8 in Annex C.*

Case study: Italy

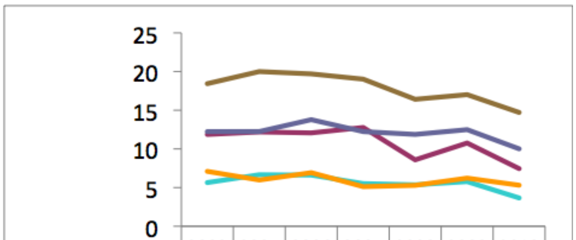
Alcohol and young people is a relatively recent issue in Italy. The traditional style of Mediterranean alcohol consumption usually took place in the household, at meal times, and under the formal control of the family members. Although this pattern was associated with high levels of per capita alcohol consumption and alcohol-related harm such as deaths from liver cirrhosis, it restricted drinking by minors. This traditional pattern has changed, and the 1990s saw an increase in at-risk consumption by minors and young people. In this case study, we describe patterns of consumption among minors since 2003, and the role of ready-to-drinks (RTDs), often described as 'aperitifs' in Italy, in these patterns. In Italy, the legal age for purchasing and serving alcohol in on-premises and off-premises is 16 years. According to specific national nutritional guidelines, any level of alcohol consumption below the age of 16 is considered risky.

Drinking among young Italians

In general, since 2003, the prevalence of drinking alcohol has been decreasing among 11-16 year olds, with beer remaining the most popular drink, followed by RTDs (aperitifs) (Figure 19).

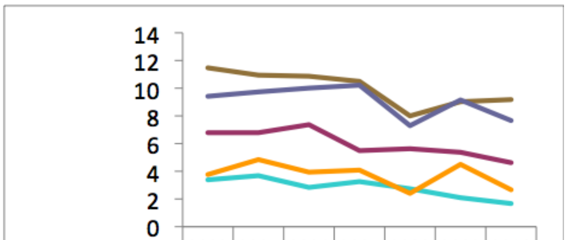
Figure 19: Prevalence of alcohol drinking (%) by gender, 11-16 year olds

Males 11-16 years old



	2003	2005	2006	2007	2008	2009	2010
Wine	11.9	12.2	12.1	12.8	8.6	10.8	7.4
beer	18.4	20.0	19.7	19.0	16.4	17.0	14.7
aperitifs	12.2	12.2	13.8	12.2	11.9	12.5	10.0
bitter	5.6	6.7	6.6	5.5	5.4	5.8	3.7
spirits	7.1	6.0	6.9	5.1	5.3	6.2	5.3

Females 11-16 years old



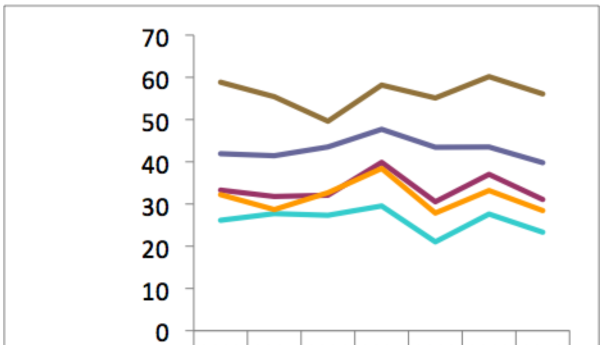
	2003	2005	2006	2007	2008	2009	2010
Wine	6.8	6.8	7.4	5.5	5.6	5.4	4.6
beer	11.5	10.9	10.9	10.5	8.0	9.0	9.2
aperitifs	9.4	9.7	10.0	10.2	7.3	9.1	7.7
bitter	3.4	3.7	2.8	3.3	2.7	2.1	1.7
spirits	3.8	4.8	3.9	4.1	2.4	4.5	2.7

Source: Scafato et al. 2011.

Seventeen to eighteen year olds are much more likely to drink alcohol than 11-16 year olds, and in this 17-18 year old age group consumption by males has been largely stable or slightly declining over the period 2003-2010, but increasing among females (Figure 20). Again, beer and RTDs (aperitifs) are the most popular drinks.

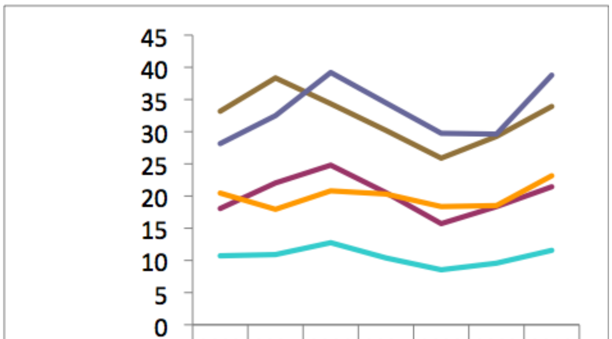
Figure 20: Prevalence of alcohol drinking (%) by gender, 17-18 year olds

Males 17-18 years old



	2003	2005	2006	2007	2008	2009	2010
Wine	33.3	31.8	32.1	39.9	30.5	37.0	31.1
beer	58.8	55.4	49.6	58.2	55.1	60.2	56.1
aperitifs	41.9	41.4	43.5	47.7	43.4	43.5	39.8
bitter	26.1	27.7	27.3	29.5	21.0	27.6	23.3
spirits	32.2	28.7	32.7	38.4	27.9	33.2	28.4

Females 17-18 years old



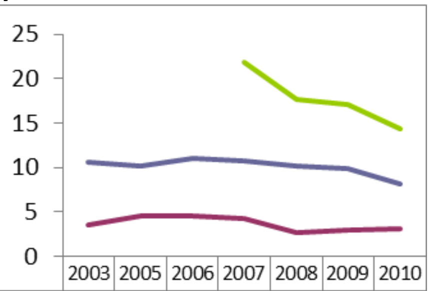
	2003	2005	2006	2007	2008	2009	2010
Wine	18.1	22.0	24.8	20.5	15.7	18.4	21.4
beer	33.2	38.4	34.3	30.2	25.9	29.3	33.9
aperitifs	28.1	32.5	39.2	34.5	29.8	29.6	38.8
bitter	10.7	10.9	12.8	10.4	8.5	9.6	11.6
spirits	20.5	17.9	20.8	20.3	18.4	18.5	23.1

Source: Scafato et al. 2011.

Riskier patterns of drinking have followed the same trends as prevalence of drinking – decreasing among 11-16 year olds (Figure 21), and stable or decreasing among 17-18 year old males and increasing among 17-18 year old females (Figure 22).

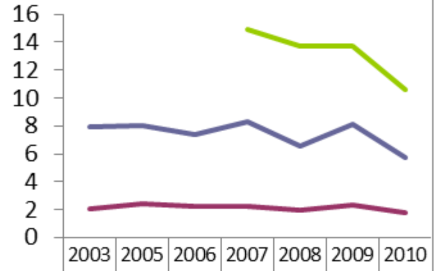
Figure 21 Drinker's prevalence (%) by gender according to selected risky behaviours, 11-16 year olds. For definitions of risky drinking, see legend to Figure 22.

MALES 11-16 years old



	2003	2005	2006	2007	2008	2009	2010
alcoholics drinkers between meals	10.6	10.1	11.1	10.8	10.2	9.9	8.2
Binge drinkers	3.5	4.6	4.5	4.2	2.7	3.0	3.1
Hazardous drinkers (ISS criteria)				21.9	17.6	17.1	14.3

FEMALES 11-16 years old

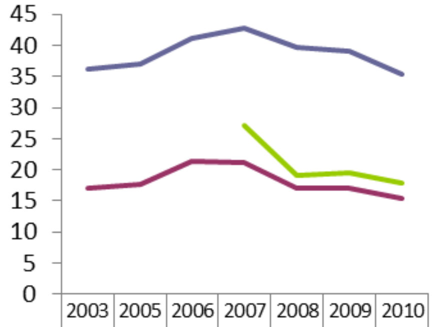


	2003	2005	2006	2007	2008	2009	2010
alcoholics drinkers between meals	7.9	8.0	7.4	8.3	6.5	8.1	5.7
Binge drinkers	2.1	2.4	2.2	2.2	2.0	2.4	1.7
Hazardous drinkers (ISS criteria)				14.9	13.7	13.7	10.6

Source: Scafato et al. 2011.

Figure 22 Drinkers' prevalence (%) by gender according to selected risky behaviours, 17-18 year olds

MALES 17-18 years old



	2003	2005	2006	2007	2008	2009	2010
alcoholics drinkers between meals	36.1	36.9	41.2	42.8	39.6	39.0	35.4
Binge drinkers	17.0	17.7	21.5	21.2	17.0	17.0	15.5
Hazardous drinkers (ISS criteria)				27.1	19.0	19.5	17.9

FEMALES 17-18 years old

	2003	2005	2006	2007	2008	2009	2010
alcoholics drinkers between meals	26.3	26.1	29.1	30.5	23.9	26.2	31.0
Binge drinkers	6.9	8.5	8.6	7.5	4.7	5.0	7.9
Hazardous drinkers (ISS criteria)				8.2	5.1	5.7	9.3

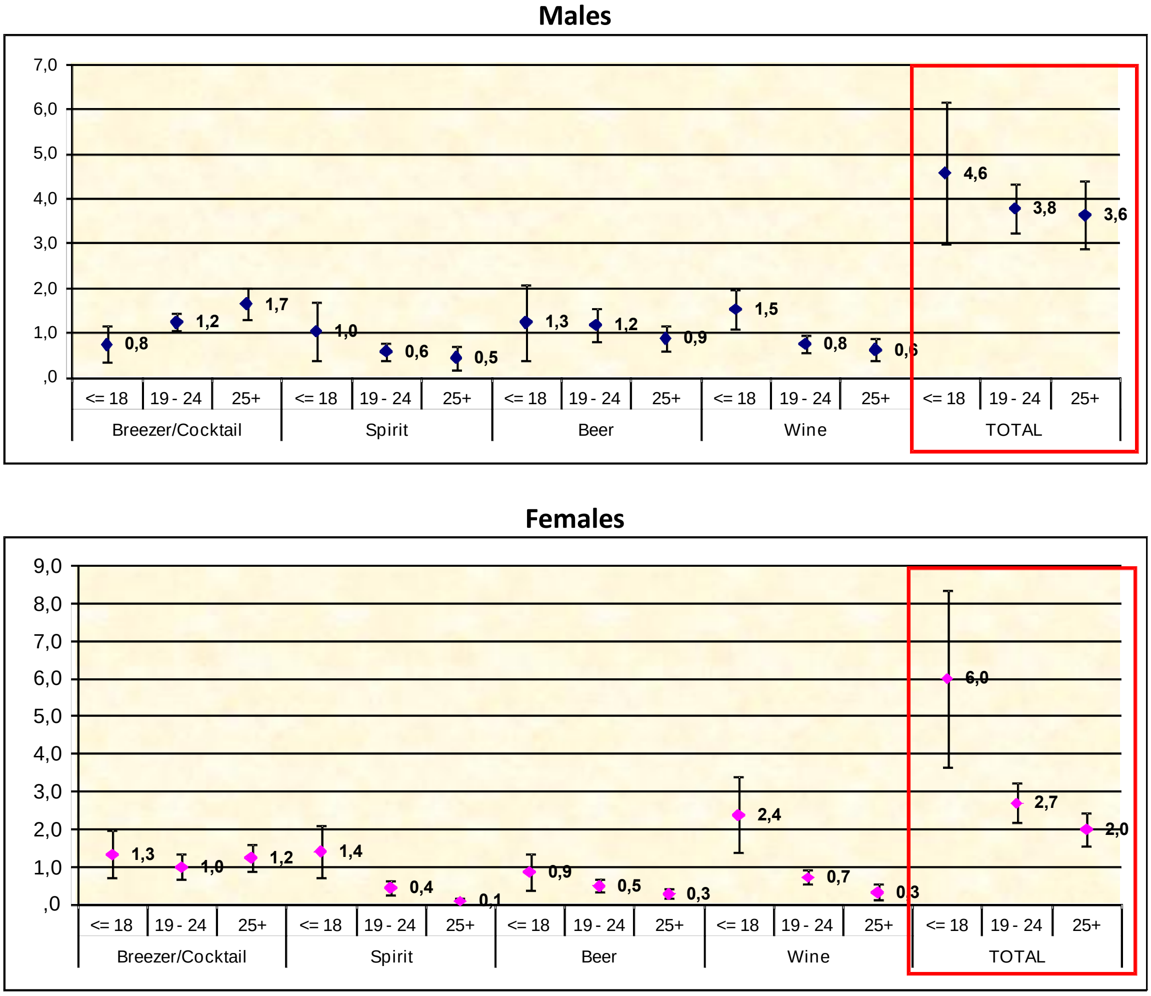
Source: Scafato et al. 2011.

Note: The ISS (Istituto Superiore di Sanità), the SIA (Società Italiana di Alcologia), the Italian Ministry of Health and INRAN (Istituto Nazionale di Ricerca per gli Alimenti e la Nutrizione) provide national nutritional guidelines on hazardous alcohol consumption. These state that, if the following drinking habits persist, they are likely to result in harm:

- any kind of consumption under the Italian legal age for selling or serving alcohol (16 years)
- having more than 1 standard glass (12 grams of alcohol) of alcoholic beverages per day between 17 and 18 years
- having more than 3 glasses of alcoholic beverages per day among men aged over 18
- having more than 2 glasses of alcoholic beverages per day among women aged over 18
- subjects who have engaged in binge drinking (more than 60 grams in one occasion).

All product categories contribute to consumption on a typical drinking occasion or to an occasion leading to intoxication. At these occasions, for those aged 18 years or less, on average 4.6 standard glasses (55.2 g alcohol) were drunk by males and 6 standard glasses (72g alcohol) by females (Figure 23). Ready-to-drinks contributed 8g (17%) of the 46g for males and 13g (22%) for females. For both males and females, the highest contribution of alcohol drunk during a typical drinking occasion came from wine: one-third for males and two-fifths for females.

Figure 23: Mean number of standard glasses of alcoholic beverages drunk by young people on a typical drinking occasion, by gender and age (monitoring period: June 2008–June 2009)



Source: Scafato et al. 2011.

Do alcopops form a distinct cluster of drinking in Italy?

In Italy, seven clusters emerged, compared to four in Germany and the Netherlands (Tables C7-C8 in Annex C). The pattern of consumption is characterised not only by the total amount of alcohol but also by the leading beverage. Especially among the upper-middle consumers three distinct clusters emerge, each one marked by the dominant drink, i.e. beer, wine and spirits. In these cases consumption is very concentrated on the leading beverage, particularly for beer and spirits. Alcopops do not form a distinguishing category.

Policy changes over this time

Over the years 2005-2010, data from the European Association of Communication Agencies (EACA) show that expenditure on alcohol advertising in Italy increased by 71% from €181 million to €309 million. Data provided by the Osservatorio Nazionale Alcol e Pubblicità (ONAP) found that 90% of 8-14 year olds had been exposed to 16 TV alcohol advertisement spots per day during a 13-week monitoring period (Ceccanti et al. 2011). During the period 2003-2010, no new relevant alcohol policy laws were introduced. In 2001, the law on advertising was introduced partly to regulate advertising alcoholic beverages and spirits. It prohibited the following: advertising in programmes specifically devoted to children and adolescents, and during the 15 minutes before and after such programmes; suggesting that alcohol has therapeutic properties that are not officially recognised by the Ministry of Health; and any advertising showing children and adolescents consuming alcohol or representing alcohol intake as a positive attitude. The same law also forbids direct or indirect advertisement of alcohol beverages in those environments mainly attended by underage people (under 18 years old); radio and TV advertisement of spirits between 4pm and 7pm, and advertising of spirits in daily and periodical press targeting children and adolescents, and in cinemas when films for children and adolescents are shown.

What this case study shows

Minors' drinking in Italy is currently a major concern, although drinking prevalence and risky drinking have been slightly declining among 11-16 year olds over the period 2003-2010. Among 17-18 year olds, drinking prevalence and risky drinking among males have been either stable or declining, whereas among females there have been increases, although rates remain lower than among males. Ready-to-drinks have followed the same trends as other beverage groups. Although they are popular in terms of whether they have been drunk, ready-to-drinks contribute to only about one-fifth of the amount of alcohol consumed by under 19 year olds on a typical drinking occasion – beer and wine being the categories of beverage that contribute the most. *Additional RTD/HS data for Italy is in Figures C9-C12 in Annex C.*

References

BZgA (Bundeszentrale für gesundheitliche Aufklärung) (2007). *Alkoholkonsum der Jugendlichen in Deutschland 2004 bis 2007.* Köln: Bundeszentrale für gesundheitliche Aufklärung.

BZgA (Bundeszentrale für gesundheitliche Aufklärung) (2011). Der Alkoholkonsum jugendlicher und junger Erwachsener in Deutschland 2010. Köln: Bundeszentrale für gesundheitliche Aufklärung.

Ceccanti M, Balduzzi G and Cedri S (2011). *Rapporto 2010*. Osservatorio Nazionale Alcol e Pubblicità (ONAP).

Craigs C, Bewick BM, Gill J, O'May F, and Radley D (2011). UK student alcohol consumption: A cluster analysis of drinking behaviour typologies. *Health Education Journal* doi:10.1177/0017896911406967.

Drank en Horecawet (2011). Kamerstuk van 30. Juni 2001: wijziging 'Drank- en Horecawet'. Link: https://zoek.officielebekendmakingen.nl/kst-32022-A.html

Euromonitor International (2011a). *RTDs/high-strength premixes in Germany.*

Euromonitor International (2011b). *Alcoholic Drinks – Germany.*

Jones SC and Reis S (2011). Not just the taste: why adolescents drink alcopops. *Health Education,* 112: 61-74.

Mulder, J. (2009). Naleving alcoholverkoop in supermarkten. www.stap.nl.

Müller S, Piontek D, Pabst A, Baumeister SE and Kraus L (2010). Changes in alcohol consumption and beverage preference among adolescents after the introduction of the alcopops tax in Germany. *Addiction* 105: 1205-1213.

Nielsen Media (2009). Trends in alcoholconsumptie 2007-2009.

Rouillier P, Boutron-Ruault M, Bertrais S, Arnault N, Daudin J, Bacro J and Hercberg S (2004). Drinking patterns in French adult men. A cluster analysis of alcoholic beverages and relationship with lifestyle. *European Journal of Nutrition* 43: 69-76.

Scafato E, Gandin C, Galluzzo L, Rossi A and Ghirini S per il Gruppo di Lavoro CSDA (Centro Servizi Documentazione Alcol) (2011). *Epidemiologia e monitoraggio alcol-correlato in Italia*. Roma: Istituto Superiore di Sanità. http://www.epicentro.iss.it/alcol/apd2011/Apd2011_Istisan2011.pdf

SevenOne Media (2005). *MediaReport Alkoholische Getränke*.

Van den Wildenberg (2010). *Jongeren en Mixdranken*. STAP (Dutch Institute for Alcohol Policy) http://www.stap.nl/nl/publicaties/rapporten.html/3455/1081/jongeren-en-mixdranken

Chapter 5
Product case studies

Summary

This chapter describes two product case studies: a spirit-based ready-to-drink (hereafter "Vodka-RTD") marketed across Europe; and a beer-based RTD largely marketed in Germany (hereafter "Beer-RTD"). The Vodka-RTD was one of the first RTDs to appear on the market and, although its market share is declining across Europe, it is a product with substantial penetration and brand recognition. The case study describes how its position in the market has changed over time and how its marketing strategies have been adapted to the changing media landscape. The Beer-RTD is almost exclusively marketed in Germany, where its sales have increased following the introduction of the German 2004 alcopop tax law, which increased the price of spirit-based RTDs (see Chapter 4). The case studies demonstrate the increasing importance of internet and social media in the marketing of this type of product.

Case study: a vodka based RTD

The Vodka-RTD is a ready-to-drink vodka-based, citrus-flavoured beverage with an alcohol by volume (ABV) content of 5% in most EU countries. It is a leading spirit-based RTD brand that was launched in 1999 in the UK and introduced in other EU countries shortly thereafter. The main ingredients are carbonated water, vodka, citrus flavours and salt (Table D1 in Annex D). It is sold primarily in two sizes, 275ml and 700ml, in supermarkets/hypermarkets, bars/pubs and restaurants (Figure 24).

Figure 24: Bottles vodka-based RTD

Appeal and use by the youth market

The Vodka-RTD as an RTD is perceived in general to be easy to drink and to have a sweet and pleasant taste, which tends to conceal the taste of the alcohol (Romanus 2000; Van den Bulck et al. 2006). The image of the brand is one of youthfulness in that it is simple while looking relatively sophisticated (Metzner and Kraus 2008). Its 275ml size is considered appealing to young people in that it is very convenient to hold while chatting or dancing in a club or bar/pub (Gunter et al. 2008). However, there is very little information available in relation to how young people use the beverage. One recent phenomenon has been 'Icing' drinking games, established in 2010, which encouraged the rapid consumption of a bottle of Vodka-RTD, through peer pressure ("If you refuse to drink … you are immediately excommunicated and shunned") (Figure 25). The game appears to have spread virally, having originated in the US and migrated to the EU. There is no evidence to suggest that this phenomenon is associated with marketing practices.

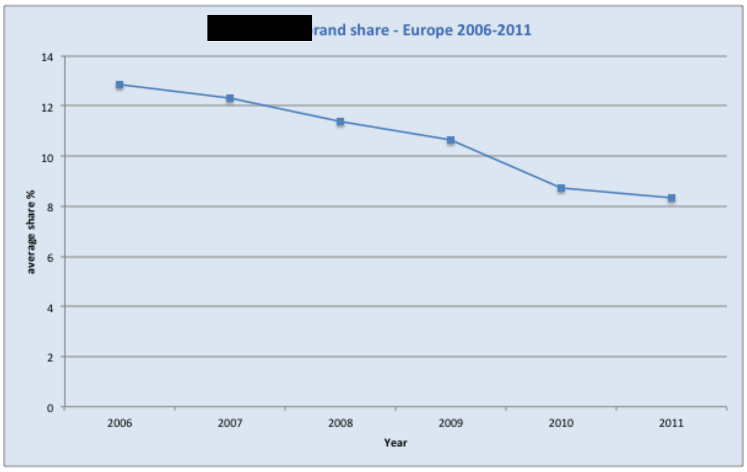
Figure 25: The 'Icing' drinking game on YouTube

Source: www.youtube.com.

Trends in market share

Over the six years 2006-2011, the market share of Vodka-RTD as a percentage of all RTDs has been declining in Europe (Figure 26).

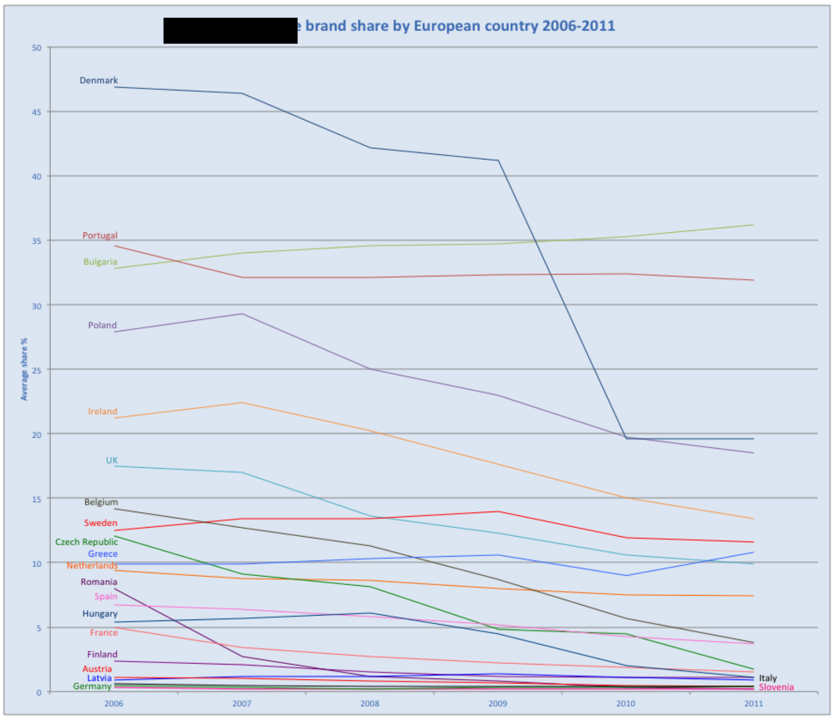
Figure 26: **Vodka-RTD brand share as a percentage of RTDs**



Source: Euromonitor (accessed 20 January 2012).

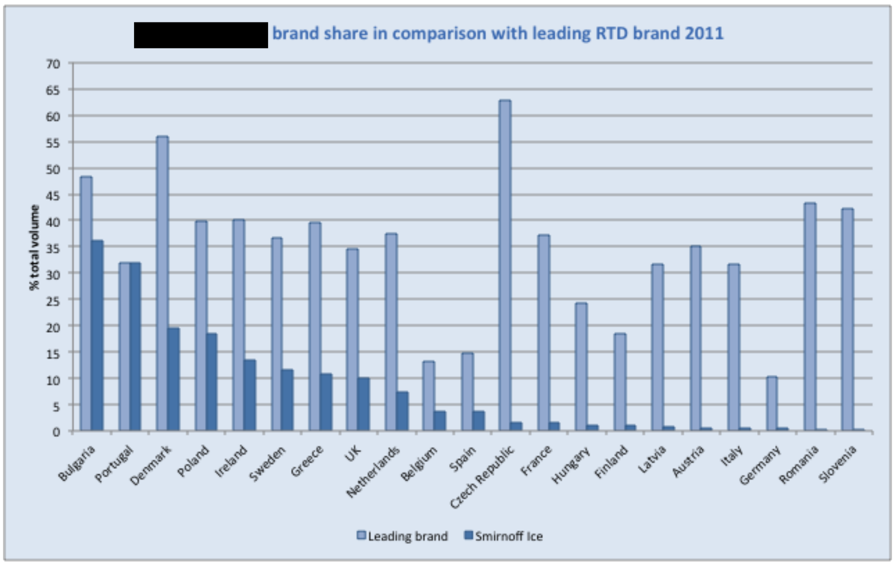
The decline has occurred in most European countries, with the largest decline seen in Denmark (Figure 27). Exceptions are Bulgaria and Greece, which have seen mild increases. Figure 28 compares the brand share of Vodka-RTD with the leading RTD brands in 21 European countries in 2011. The Figure indicates the presence of competitors in all 21 countries, and the decline in Vodka-RTD Ice may be partly due to the launch of competing products. (For more details, see Table D2 in Annex D.)

Figure 27: Vodka-RTD brand share of RTDs by country, 2006-2011



Source: Euromonitor (accessed 20 January 2012).

Figure 28: Vodka-RTD **brand share in comparison with leading RTD brands, 2011**



Source: Euromonitor (accessed 20 January 2012).

Marketing

Across Europe, Vodka-RTD is primarily sold in a 275ml glass bottle, but the pack size varies depending on point of sale. For example, a 275ml and 700ml bottle can be purchased at a supermarket/hypermarket, but in bars/clubs, a 330ml bottle is sold (in the UK and Ireland only). In the UK, a new 300ml pre-mix can has been introduced, leading to overall increases in sales of the brand. (For more details, see Table D3 in Annex D.)

The price of Vodka-RTD varies across Europe, again depending on the point of sale. A 275ml bottle purchased from a supermarket/hypermarket can cost from €1.19 in Poland to €2.59 in Denmark. In contrast, in France two 700ml bottles of the brand cost €3.90. In a bar or club, the price increases and a 275ml bottle in mainland Europe can cost from €3.24 in Hungary to €6.72 in Denmark.

The producer company invests highly in its brands. In the year ending 30 June 2010, £1,419 million was spent worldwide on marketing brands with a focus on the eight global priority brands, including the vodka brand used in the Vodka-RTD, accounting for 64% of total marketing spend.

A study looking at internal company documents reported that the aim of marketing was for the Vodka-RTD to “become the most respected youth brand [overtaking deodorant]”. University students were one target group: a “great place to create excitement and drive recruitment is within the student community” (Hastings 2010).

Advertising

The advertising campaign used for the launch for the brand in 1999 (Figure 29) focused on TV advertising. Although it ended in 2003, it is still easily accessible on the internet.

Figure 29: Example of the launch campaign

Between 2003 and 2005, a campaign using TV and posters told the tale of what happened on a night out. The posters illustrated observations such as “spotting a gorgeous woman across the dance floor”.

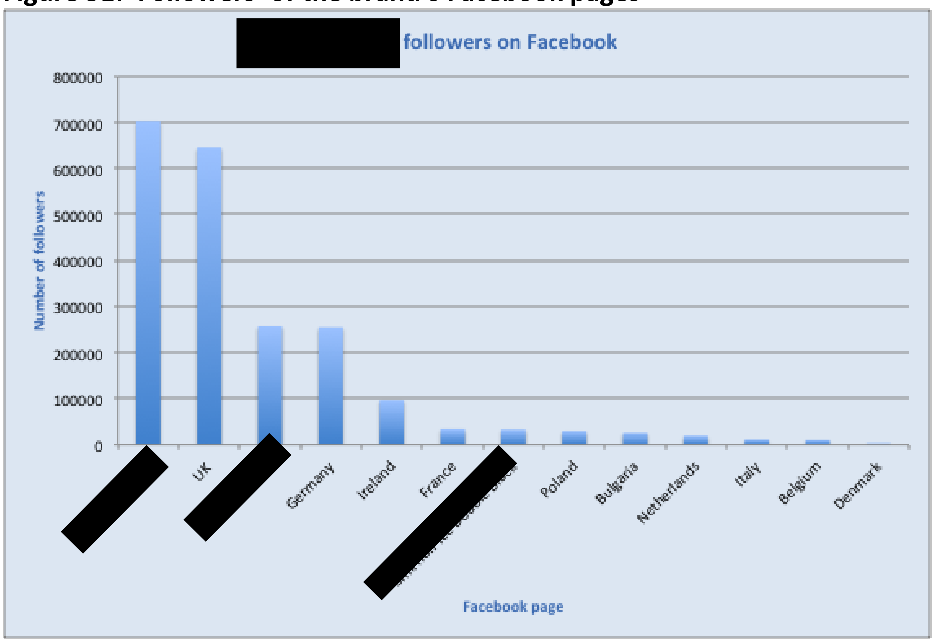
In 2005, a campaign launched in the UK featured a Russian character who is a fan of Vodka-RTD, supported by a website, www.uriplanet.com. The website and advertisements are no longer in existence as the British Code of Advertising Practice (BCAP) ruled that the characters were likely to become cult figures with strong appeal to under-18s and that the ads breached the Committee of Advertising Practice (Broadcast) TV Advertising Standards Code rule 11.8.2 (a) (Alcoholic drinks), and should not be shown again. Nevertheless, the advertisement can still be found on YouTube (Figure 30) or on advertising sharing sites such as www.visit4ads.com.

Figure 30: Examples of the Russian inspired campaign

In 2009, the producer company changed the way it marketed its products, placing greater emphasis on digital marketing with content streamed through its website, and additional activity on social networking and media sites. From 2009 onwards the focus was on marketing the vodka brand as a whole, with its website promoting nightlife and cocktail recipes, and encouraging viewers into social networking sites, Facebook, YouTube, Flickr and Twitter.

Facebook is a major advertising channel for the brand and their primary site for promoting nightlife events and marketing cocktails on a global scale. The Vodka-RTD Facebook page attracts a following of more than 700,000 people, much higher than its competitors (Figure 31). From December 2011 to January 2012, the number of followers increased by 4.8%.

Figure 31: 'Followers' of the brand's Facebook pages



Source: Facebook (accessed January 2012).

Twitter is another popular form of digital advertising, although the home of Vodka-RTD only has 139 followers. The strapline for the page is “What if you could freeze the moments in your life one drink at a time? What would that moment look like?” (Accessed January 2012.)

In addition to current marketing, previously aired TV advertisements can still be viewed, for example on Youtube, including advertisements which were banned (see above). In addition, although the Icing website (see above) has been shut down, videos can still be viewed on YouTube. In fact, Icing is still very popular, with videos still being uploaded in January 2012.

What this case study shows

Vodka-RTD is a ready-to-drink product whose market share is declining across Europe. Having achieved substantial penetration and brand recognition, the RTD is now largely being supported by marketing of the vodka brand and social media sites. Marketing is increasingly focused on social networking and other internet sites (Facebook, Flickr and YouTube). Self-regulation and withdrawal of advertisements that break advertising codes become irrelevant, since the advertisements live on through YouTube and other video sharing sites.[9]

[9] Product innovation is an important aspect of the producer company’s strategy. New types of pre-mixes under the same brand name have recently been launched, including vodka with cranberry mixture and vodka mojito. According to the company’s website the new products “address the resurgence of the cocktail culture” and the “increased popularity of drinking at home”.

Case study: a beer based RTD

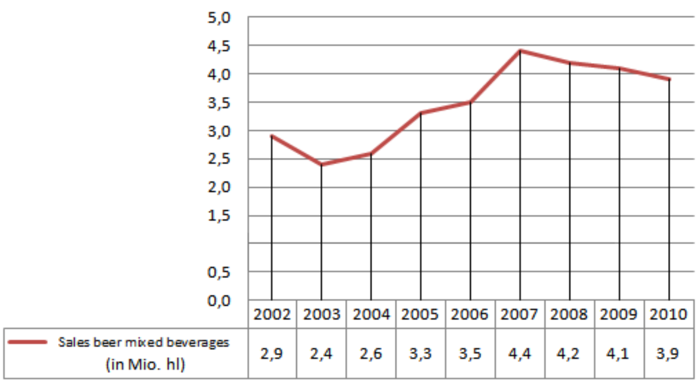
The Beer-RTD examined in this case study comes in six different flavours, each associated with a different colour of packaging (Figure 32). This particular beer-based RTD brand is marketed almost exclusively in Germany, where it can be legally purchased by 16 year olds. Its brand share has grown rapidly since its introduction into the market in 2001. It has grown particularly rapidly since 2003, and by 2011 it had the second highest brand share of RTDs in Germany, and consequently is one of the largest RTDs in the European marketplace. (See Table D4, Annex D, for brand shares of all German RTD producers.)

Figure 32: Bottles of Beer-RTD

The context for beer-based RTDs in Germany

The first contact with alcohol in Germany takes place at the age of approximately 14 years (BZgA 2011). Nearly two-thirds of 15 year olds in Germany have had contact with alcohol, while the legal age for buying and consuming beer and wine is 16 years, and for spirits 18 years. More than a quarter of 12-17 year olds consume alcohol at least once in a month (BZgA 2009). In recent years, beer-based RTDs have become very popular among German adolescents, partly due to their sweet taste. The percentage of young people who drink beer-based RTDs at least once a month was 26.1% in 2008. (BZgA 2009). Figure 33 shows that the popularity of beer-based RTDs increased in 2004 after the introduction of a special tax for spirits based alcopops (Bundesministerium der Finanzen 2005). See Chapter 4 for details of how the consumption of alcopops decreased after the introduction of the tax.

Figure 33: Sales trends in beer-based RTDs in Germany



Source: http://www.braufranken.de/image/wissen/diag21absmix.png;
http://www.bier.de/bier_zahlen/zahlen10.php

Young people are the primary consumers of beer-based RTDs in Germany. Sixteen to seventeen year olds drink 45.8% of all beer-based RTDs. Among 16-17 year olds, boys prefer beer (67%) to beer-based RTDs (47.4%), but girls favour beer-based RTDs (46.2%) to beer (37.2%). The consumption of beer-based RTDs is higher in this age group than in all other age groups of young adolescents and adults, although beer-based RTDs also remain popular for young adults aged 22-25 years (BZgA 2009, 2011).

Product characteristics
As of February 2012, there are six different flavours of Beer-RTD available in Germany (Table 1)

Table 1: Beer-RTD flavours, ingredients and year of market entry

Flavour		**Beer content**	**Alcohol by volume** (%)	**Grams of pure alcohol** (330 ml)	**Ingredients***	**Year of market entry**
Lemon	45% lemon-flavoured soft drink	55%	2.7%	7.1	Beer, water, sugar, carbonic acid, lemon and grapefruit juice (2%), acidifier citric acid, antioxidant ascorbic acid, natural flavour, stabiliser pectin and carob gum	2001*
Kola	60% cola	40%	2.0%	5.28	Beer, water, sugar, citric acid (0.5%), carbonic acid, colorimeter E150c, acidifier E338, antioxidant ascorbic acid, flavour caffeine, flavour	2001*
Energy	55% caffeine-based soft drink	45%	2.5%	6.6	Beer, water, sugar, acidifier carbonic acid, flavour, guarana extract (0.04%), taurine, flavour caffeine, antioxidant ascorbic acid	2004
Curuba	20% curuba and tequila flavoured soft drink	80%	4.8%	12.67	Beer, water, sugar, acidifier carbonic acid, curuba flavour, plant extract colouring, acidity regulator trinatriumcitrat, antioxidant ascorbic acid	2006
Apple	60% apple juice	40%	2.9%	7.65	Beer, water, sugar, carbonic acid, antioxidant ascorbic acid, natural flavour	2008
Grapefruit	32% grapefruit juice; contains 4% fruit	68%	4.0%	10.56	Water, beer, sugar, grapefruit juice (3%), orange juice, carbonic acid, citric acid, antioxidant ascorbic acid, lemon extract, natural grapefruit flavour, colorimeter E150c and beta carotin, stabiliser carob gum	2010

* Source: Information provided by the producer at brand launch in 2011.

Packaging

The packaging for the different flavours uses bright colours, for example, blue for Beer-RTD energy, and green for Beer-RTD lemon (Figure 34).

Figure 34: Beer-RTD packaging

Price

Each Beer-RTD flavour is available in six-packs for €3.49 and in a crate of 24 bottles for €13 (Table 2). These prices are comparable with other beer-based RTDs (Euromonitor International 2011). The six-pack is increasingly popular in Germany, accounting for one-third of all retail volume sales in 2010 (Euromonitor International 2011).

Table 2: Pricing of Beer-RTD

Brand	Outlets	Pack size	Pack type	Price (€)
Radler [shandy] (2.4% ABV)	Home-shopping	24 x 0.33 litres	Glass bottles	18.20
Apple (2.4% ABV)	Hypermarket	6 x 0.33 litres	Glass bottles	3.50
Curuba (4.8% ABV)	Hypermarket	6 x 0.33 litres	Glass bottles	3.50
Energy (2.3% ABV)	Hypermarket	6 x 0.33 litres	Glass bottles	3.50
Grapefruit (2.9% ABV)	Hypermarket	6 x 0.33 litres	Glass bottles	3.50
Lemon (2.7% ABV)	Discounter	6 x 0.33 litres	Glass bottles	3.00
Lemon (2.7% ABV)	Hypermarket	6 x 0.33 litres	Glass bottles	3.50
Lemon (2.7% ABV)	Supermarket	6 x 0.33 litres	Glass bottles	3.70

Source: Passport, 2011.

Sponsorship of TV shows

Since January 2012, Beer-RTD has sponsored the German version of Pop Idol ('Deutschland sucht den Superstar', DSDS). The target audience for this show is 14-49 year olds. The show runs on the private TV channel RTL and can be seen in Germany, Switzerland and Austria. It has a high audience rating and one in every three viewers belongs to the relevant advertising target group. During the TV show, Beer-RTD is advertised including through a sweepstake (Figure 35). With a code on the Beer-RTD crown cap, people can win prizes such as music downloads and gifts, and at the end of the show every participant has the chance of winning €100,000. To get more information about Beer-RTD and the sweepstake, people can visit the brand's website. To access the site visitors need to click a button saying, "Yes, I am 16 years or older".

Figure 35: TV sweepstake screen shot

The marketing of beer-based RTDs through a tie-in with the DSDS TV show has worked successfully in the past. In 2004, DSDS was sponsored by another beer-based RTD. A survey of a representative sample of the audience (26% of the respondents were in the 14-19 year old age group), conducted by the IP Deutschland marketing company, revealed that the degree of brand awareness among the audience was 91% at the end of the season. Furthermore, approximately 40% had actually bought the advertised beer-based RTD during the DSDS season. According to the survey, the brand was at that time the highest selling pre-mixed beer. The product image was evaluated as modern and trendy.

TV Total

Since 2004, the comedy show 'TV Total' which runs on the private TV-channel Pro 7, has been sponsored by Beer-RTD (Figure 36). Although Beer-RTD is said to target 18-39 year olds, younger people also watch this show and will be reached by the advertising. Several times during the show, Beer-RTD uses opening and closing sequences and reminders to increase their reputation by a constant presence. The 'TV Total' show has a high audience rating – approximately 13% of the market share – and this means that 700,000 14-49 year olds watch this show.

Figure 36: Screen shots from the 'TV Total' show

TV-Presenting VELTINS „V+" bei „TV Total" / PRO 7

TV commercials

TV commercials for Beer-RTD suggest fun, and sexual and social success and make use of young male and female models (clips can be seen on YouTube). The scenes are everyday places where young people spend their free time and have fun, such as on the beach, at the skateboard park or on the street (Figure 37).

Figure 37: Pictures from TV commercials for Beer-RTD, retrieved from YouTube

Billboard advertisements

Beer-RTD is also advertised on billboards with mainly short, catch phrases but changing the spelling or sound of the word (metaplasm). For example, ***V**eiern ohne Ende* (endless party) instead of ***F**eiern ohne Ende* (Dudenverlag 2011) (Figure 38). As with TV commercials, young-looking models are used on billboards.

Figure 38: Billboard advertisements with 'metaplasms'

Representation in social networks
Beer-RTD is represented in several social networks such as Facebook, StudiVZ (a German social network for students) and MeinVZ (a German social network for students and other young people). Within these social networks, Beer-RTD provides information about new products, events, contests, games and photos of sponsored parties and other events to maintain visibility for their products. Within those online networks, consumers can discuss the product with their peers and also with the producer. This gives the producer the opportunity to react to suggestions and comments from the target group.

Sponsoring and event promotions
On the Beer-RTD website it is possible to apply to have an event sponsored. Beer-RTD focuses on events at universities and schools, such as graduation parties. People can also download poster templates to create their own party invitations with Beer-RTD advertising. In addition, the website provides an event calendar to find all upcoming sponsored parties [11]. Beer-RTD is also a sponsor of festivals in Germany such as ‘Under the bridge’ and ‘Festival der Kulturen’. The brewery also sponsors sporting events. For example, it sponsored the Porsche Cup (a motor sport event), and for the period 2005-2015 the brewery has the stadium naming rights for the successful German football team, Schalke 04.

What this case study shows
In Europe, the consumption of beer-based RTDs is not well documented. This could be due to the more dominant position of spirit-based alcopops in the market. However, beer-based RTDs are very popular among young Germans due to the increased tax on spirits based alcopops, and the legal age for purchase of beer products being 16 years of age. The advertising for Beer-RTD focuses on fun, humour and social success, using young, carefree and happy models. Significant marketing approaches include: sponsorship of popular TV programmes, particularly targeting a younger demographic; sponsorship of events such as graduation ceremonies; and the extensive use of social media to reach a young audience.

References

Bundesministerium der Finanzen (2005). *Bericht der Bundesregierung über die Auswirkungen des Alkopopsteuergesetzes auf den Alkoholkonsum von Jugendlichen unter 18 Jahren sowie die Marktentwicklung von Alkopops und vergleichbaren Getränken*. Retrieved 18.01.2011 from: http://dipbt.bundestag.de/dip21/btd/15/059/1505929.pdf

BZgA (Bundeszentrale für Gesundheitliche Aufklärung) (2009). *Die Drogenaffinität Jugendlicher in der Bundesrepublik Deutschland 2008*. Köln: BZgA. Retrieved 23.12.2011 from: http://www.jugendforschung.de/pdf/bzga-2009-alkoholkonsum-jugendlicher.pdf

BZgA (Bundeszentrale für Gesundheitliche Aufklärung) (2011). *Der Alkoholkonsum Jugendlicher und junger Erwachsener in Deutschland 2010. Ein Kurzbericht zu Ergebnissen einer aktuellen Repräsentativbefragung und Trends*. Köln: BZgA. Retrieved 30.12.2011 from http://www.bzga.de/forschung/studien-untersuchungen/studien/suchtpraevention

Dudenverlag (2011). Sprachveränderung durch Werbung. Retrieved 19.12.2011 from http://zitronenkern.de/2011/06/22/sprachveraenderung-durch-werbung

Euromonitor International (2011). *RTDs/high-strength premixes – Germany.*

Gunter B, Hansen A and Touri M (2008). *The representation and reception of meaning in alcohol advertising and young people's drinking.* Leicester: University of Leicester, Department of Media and Communication.

Hastings G (2010). Failure of self regulation of UK alcohol advertising. *BMJ* 340.

Metzner C and Kraus L (2008). The impact of alcopops on adolescent drinking: A literature review. *Alcohol and Alcoholism* 43: 230-239.

Romanus G (2000). Alcopops in Sweden: A supply side initiative. *Addiction* 95: 609-619.

Van den Bulck J, Beullens K and Mulder J (2006). Television and music video exposure and adolescent 'alcopop' use. *International Journal of Adolescent Medical Health* 18: 107-114.

Chapter 6
Conclusions

In this report, we have given a picture of alcoholic beverages with particular appeal to minors. We started off by considering a range of ready-to-drinks (RTDs) and high-strength pre-mixes (HS), as well as the apple- and pear-based drinks, cider and perry. As we went through our analyses, we also realised that, actually, many other beverage categories are appealing to minors, with beer, a mainstream alcoholic beverage category being the most popular beverage category among minors.

We approached our work in four major ways. First, we obtained Euromonitor data to describe overall sales of different beverage categories across Europe. Unfortunately, the data we had access to does not segment population groups, and so we are unable to specify sales for minors and young consumers, although we made some of our own estimates.

Second, we obtained data from the European School Survey Project on Alcohol and Other Drugs (ESPAD), which provides data on drinking patterns among 15-16 year olds across a range of European Union countries. Unfortunately, the latest data set, 2011, was not available in time for our analysis, and so we had to use 2007 data, the survey being conducted only once every four years. These data allowed us to describe drinking by different beverage category groups, including alcopops and ciders in most countries. We used the data to identify determinants of drinking and whether or not alcopops were special groups of beverages for minors. We also used the data to estimate the overall size of the youth market for alcohol.

Third, we undertook brief systematic reviews of the literature to identify any special determinants of alcoholic beverages with particular appeal to minors, and any special programme or policy responses. We have posted these reviews on the HAPI website (http://www.hapi.org.uk/what-we-do/eu-overview/).

Fourth, we carried out three country case studies, from Germany, the Netherlands and Italy. We chose Germany because of its experience with the alcopops tax; the Netherlands, because of studies of supermarket access to alcoholic beverages with particular appeal to minors; and Italy, to describe the situation in a southern European, and previously a typically wine-consuming, country.

And, fifth, we carried out two product case studies focussed on a well-known vodka-based ready-to-drink and on a beer-based RTD available in various flavours in Germany.

After reviewing all our data, our main conclusion is that as a category, alcoholic beverages that are traditionally considered to have particular appeal to minors – such as ready-to-drinks (alcopops) and high-strength pre-mixes – are not particularly special or unique when compared with other alcoholic beverage categories. In fact, if you want to consider alcoholic beverages with particular appeal to minors, all alcoholic beverages need to be considered. Therefore, for the last part of this report, we place 'alcoholic beverages with particular appeal to minors' in apostrophes.

We conclude this for the following reasons:

First, Euromonitor data, whilst not segmenting by age group, show that in 2010, RTDs and HS contributed to no more than 2% of total alcohol sales in the European Union.

Second, ESPAD shows us that over four-fifths of the average amount of actual alcohol consumed by 15-16 year olds comes from beer, spirits, and wine. Seventeen per cent comes from alcopops and cider.

Third, among 15-16 year olds, there are no unique drivers or determinants of ‘alcoholic beverages with particular appeal to minors’ different from drivers or determinants of alcoholic beverages in general. Further, there is no convincing evidence that ‘alcoholic beverages with particular appeal to minors’ are clustered separately among 15-16 year olds compared with alcoholic beverages in general.

Fourth, there is no evidence that suggests that ‘alcoholic beverages with particular appeal to minors’ bring any special or unique health problems.

Fifth, there is no evidence that policies or programmes targeted narrowly at ‘alcoholic beverages with particular appeal to minors’ work specially or uniquely. In fact, some specific policies, such as alcopop taxes, fail by virtue of their specificity – it is just a simple matter of bringing to market new products that are exempt from such taxes.

Having said all of this, this does not mean that alcoholic beverages are of little consequence to minors – far from it. In 2007, 90% of 15-16 year olds had consumed alcohol, with 80% of 15-16 year olds having done so during the previous 30 days. Although over the 12 years 1995-2007 the prevalence of drinking remained unchanged, drinking patterns became more risky. And, for many reasons, alcohol consumption among minors is not without risk. Alcohol is neurotoxic to brain development (and brain development occurs in a major way during adolescence); although young people are much less likely to die than the middle-aged, a much higher proportion of their deaths are due to alcohol than in middle age; in other ways, including impairment of education, alcohol diminishes human capital development; and, the younger the age of starting to drink alcohol, the greater the risk of alcohol-related harm and alcohol dependence in later life.

When considering how we can help young people in their decision-making over the use of alcohol, three lessons are learnt from this analysis of ‘alcoholic beverages with particular appeal to minors’. (In writing this, of course, we realise we are not covering all aspects of policies and programmes that impact on alcohol and alcohol-related harm, but only those that came out as part for our analyses.)

First, highly segmented policies, such as specific taxes, do not work. By virtue of their specificity they are easily circumvented.

Second, we have illustrated the report with a wide range of commercial communications for alcoholic products, which appear very similar across beverage categories. It is not up to us to say whether or not these communications are within regulatory codes, but what is clear is that they appeal to minors, if not to young drinkers and drinkers in general. Furthermore, whether or not a communication is pulled because it breaks a code is irrelevant – the communications live on through social media.

Third, it is social media that appear to be the main outlets for commercial communications – types of media, of course, which are highly attractive to minors and young drinkers.

Finally, if we want to better track drinking by minors and young people across the whole range of alcoholic beverages and throughout the whole European Union, we need easier ways to do this (see Annex 5). Commercial data, in particular with age segmentations, including minors, needs to be more easily accessible to researchers and policy monitors such as the World Health Organization. Survey data, such as ESPAD, needs to be undertaken much more regularly, and needs to be made much more easily accessible to researchers in addition to those involved in ESPAD itself, and to policy monitors such as the World Health Organization. We are publishing a report in 2012 – and, we can only report on data for minors across the European Union that was collected five years ago, 2007.

Annex A
Supplement to Chapter 2

Figure A1: Spending on cider/perry drinks per person of legal drinking age (constant 2010 prices; fixed exchange rates), off and on trade retail sales price, 2010, and as a percentage of total alcohol sales

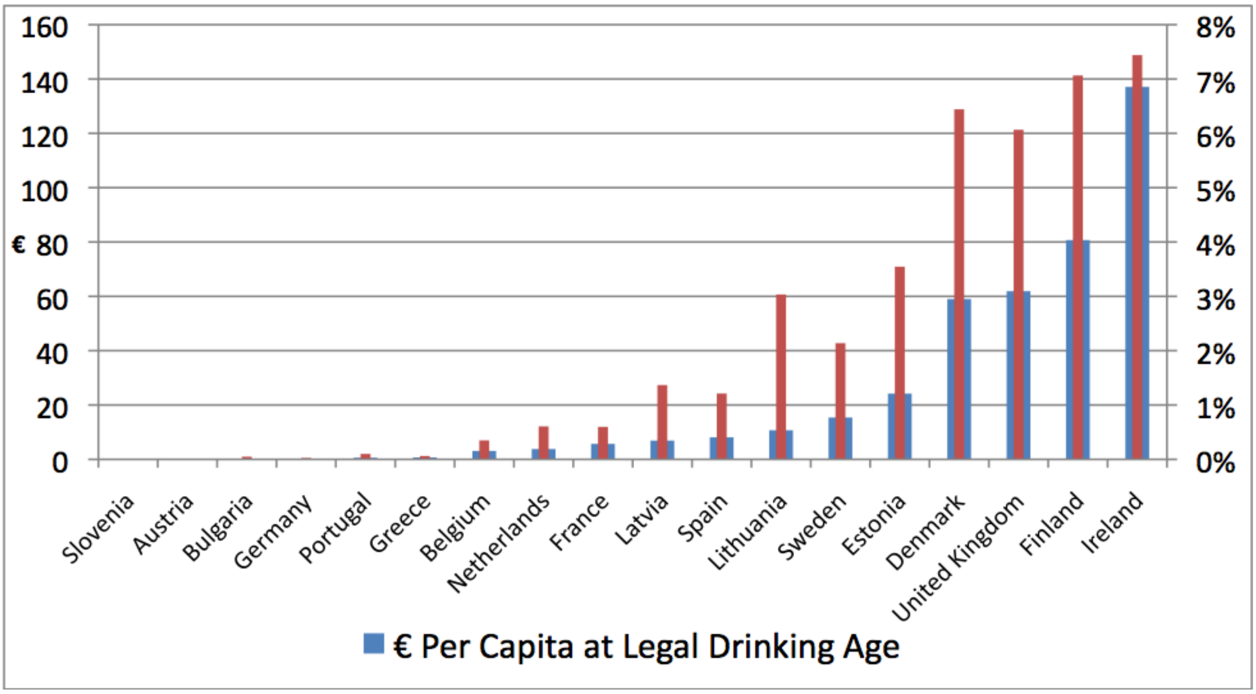


Figure A2: Cider and perry sales, market share by country, 2010

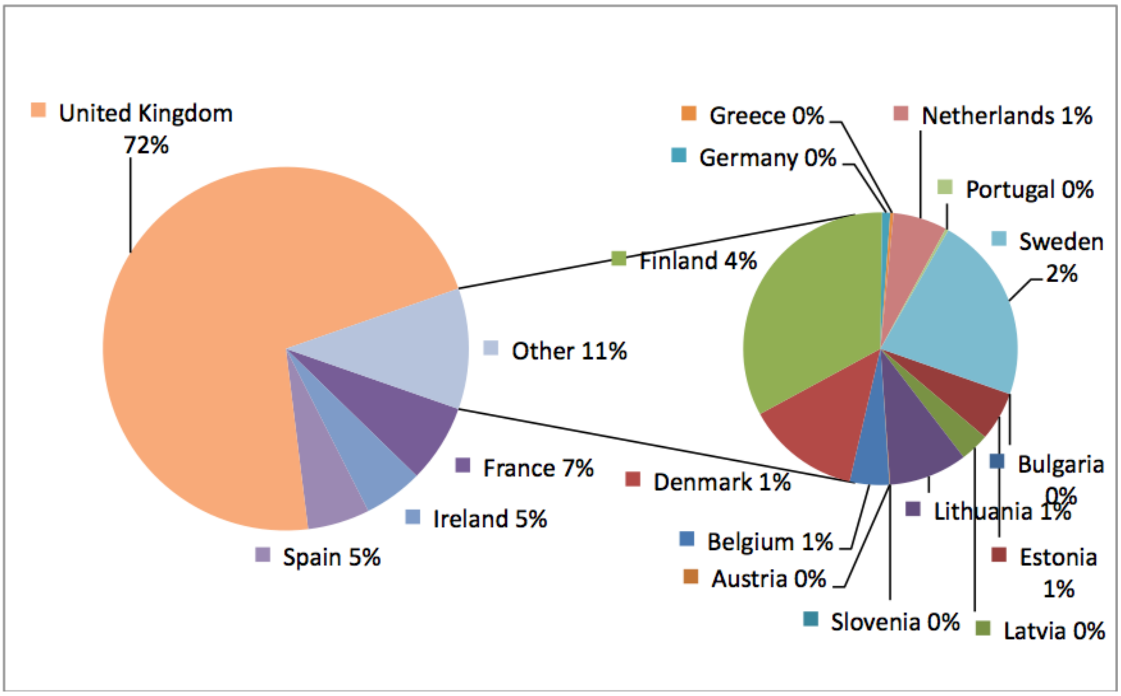


Figure A3: Spending on cider and perry per person of legal drinking age (constant 2010 prices; fixed exchange rates), off- and on-trade retail sales price, 2010, and as percentage of total alcohol sales in the EU, 1997-2010

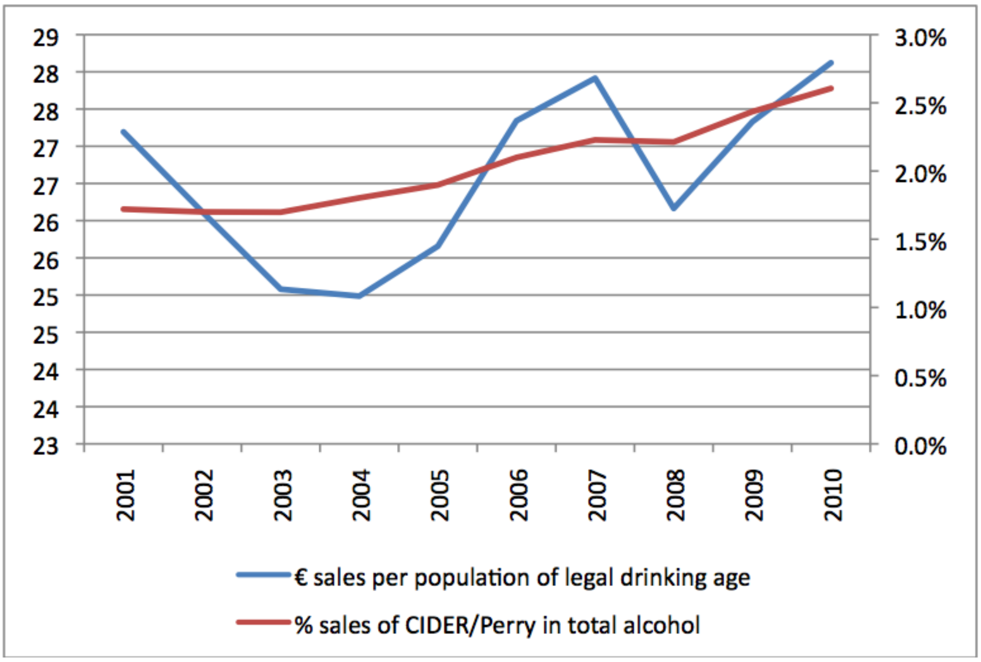
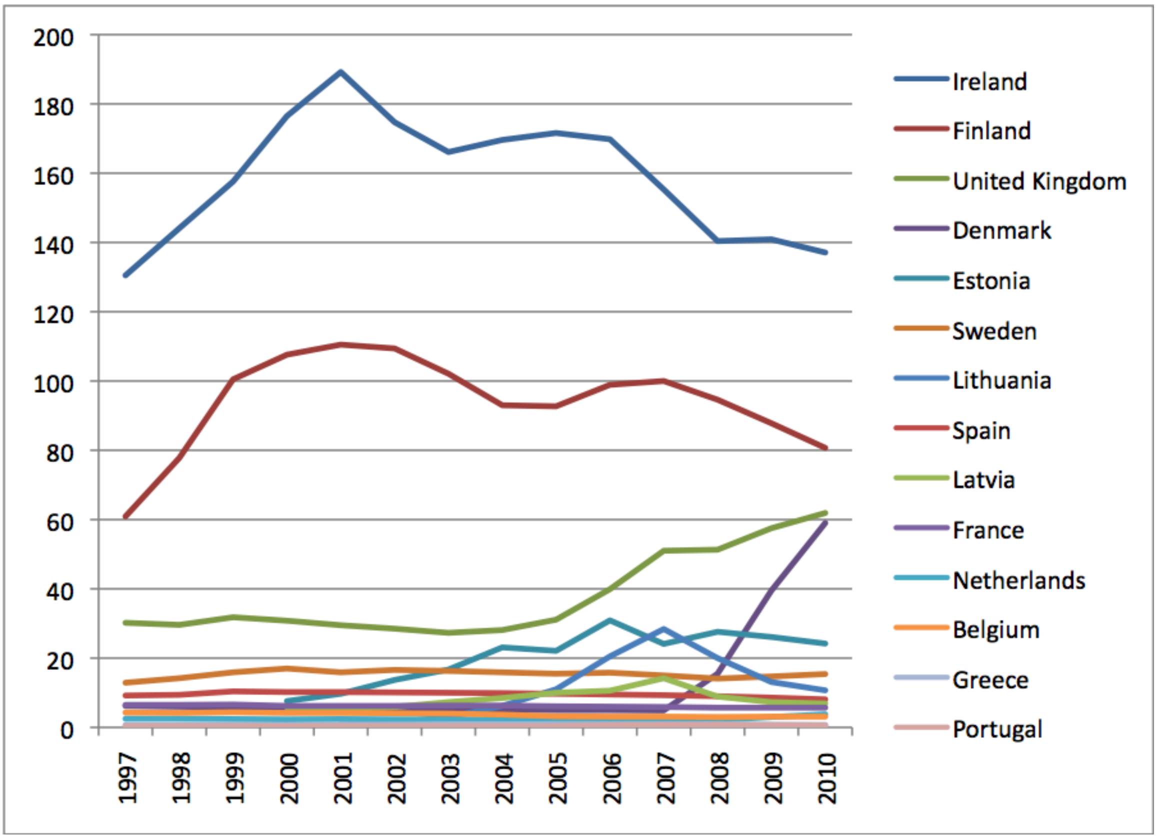


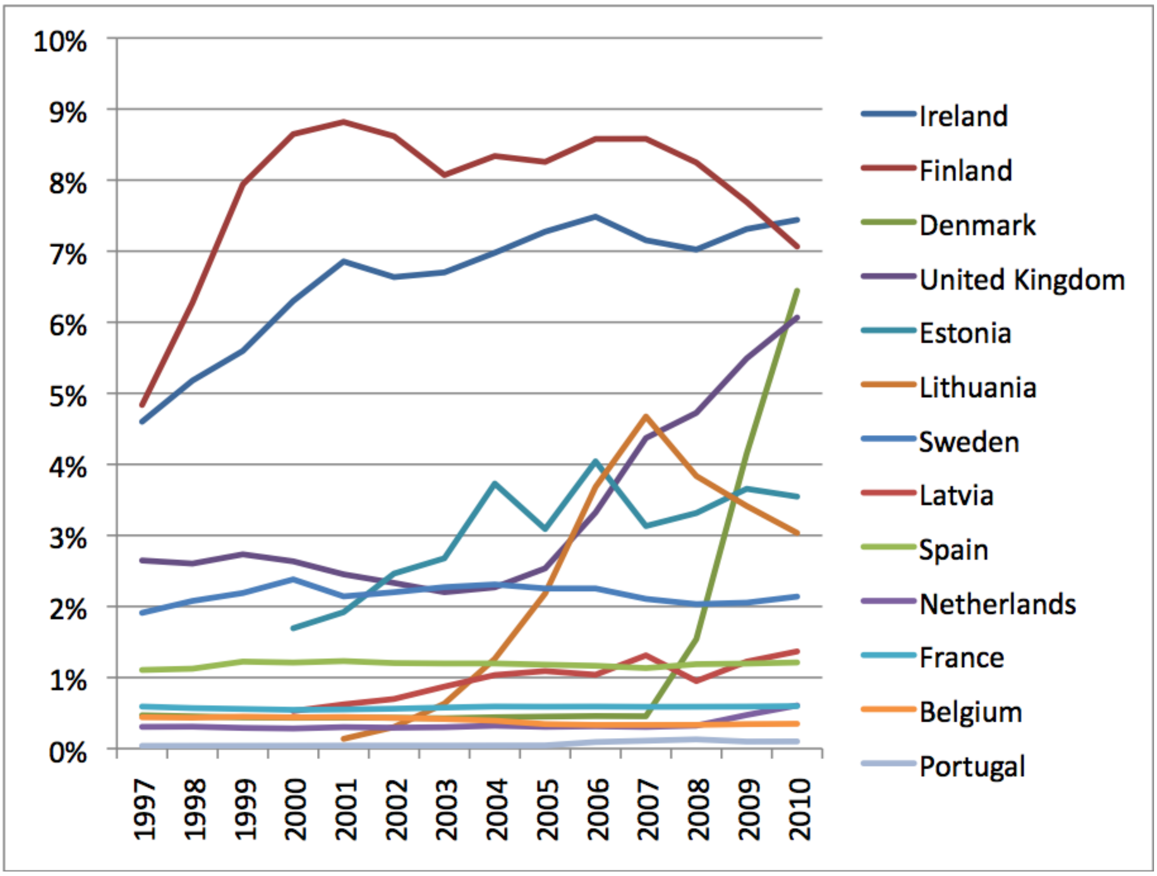
Figure A4: Spending on cider/perry drinks per person of national legal drinking age (constant 2010 prices; fixed exchange rates, Euros), off- and on-trade retail sales price, in selected EU countries, 1997-2010



Note

The country legend is sorted from highest to lowest in the year 2010. Countries with less than €0.6 spending are excluded from the figure.

Figure A5: Spending on cider/perry drinks per person of national legal drinking age (off- and on-trade retail sales price), as a proportion of total per capita alcohol spending, 1997-2010



Note

The country legend is sorted from highest to lowest in the year 2010. Countries with less than 0.1% spending are excluded from the figure.

Figure A6: Amount of pure alcohol from cider/perry sold per 1,000 adults (in litres), 2010

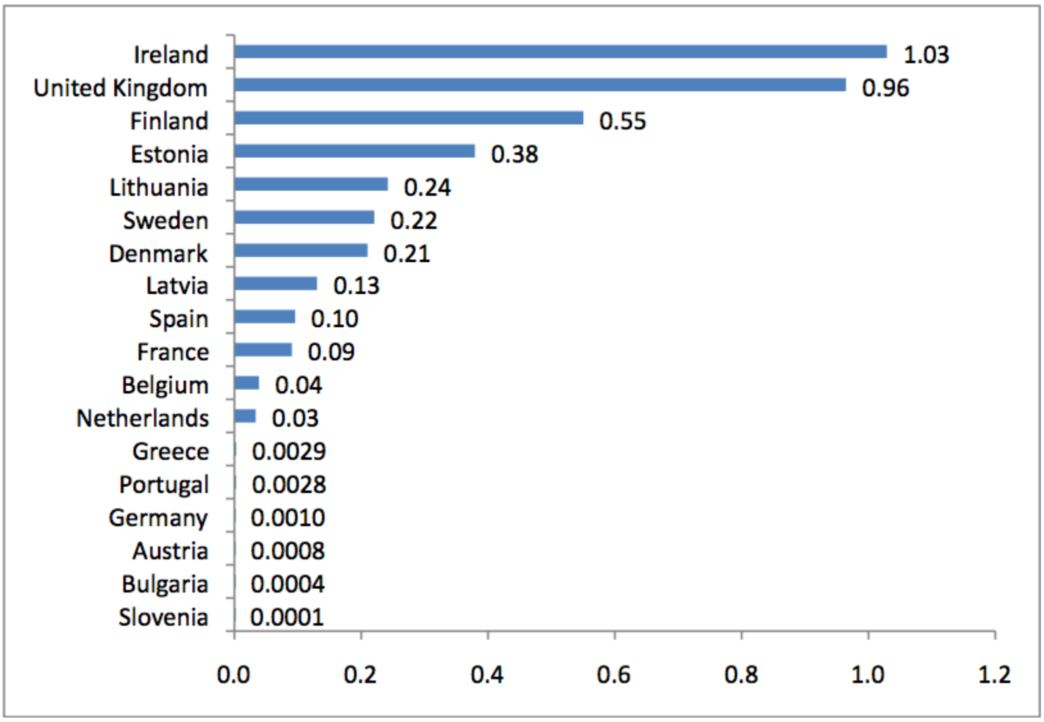


Figure A7: Pure alcohol from cider/perry as a percentage of pure alcohol from all alcoholic drinks, 2010

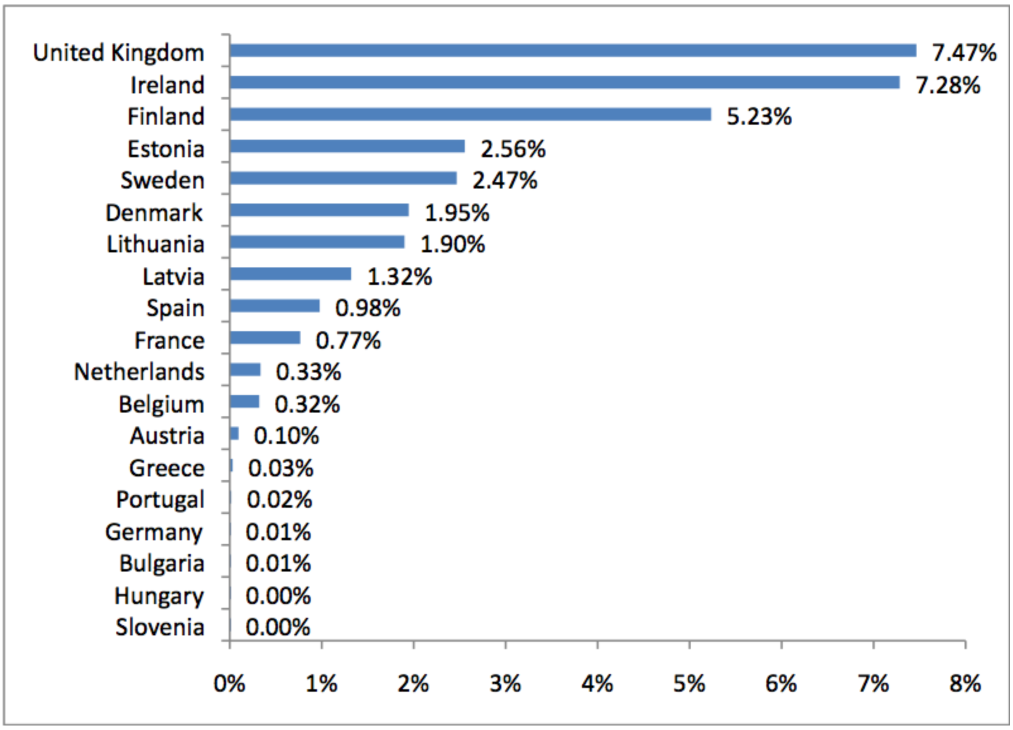
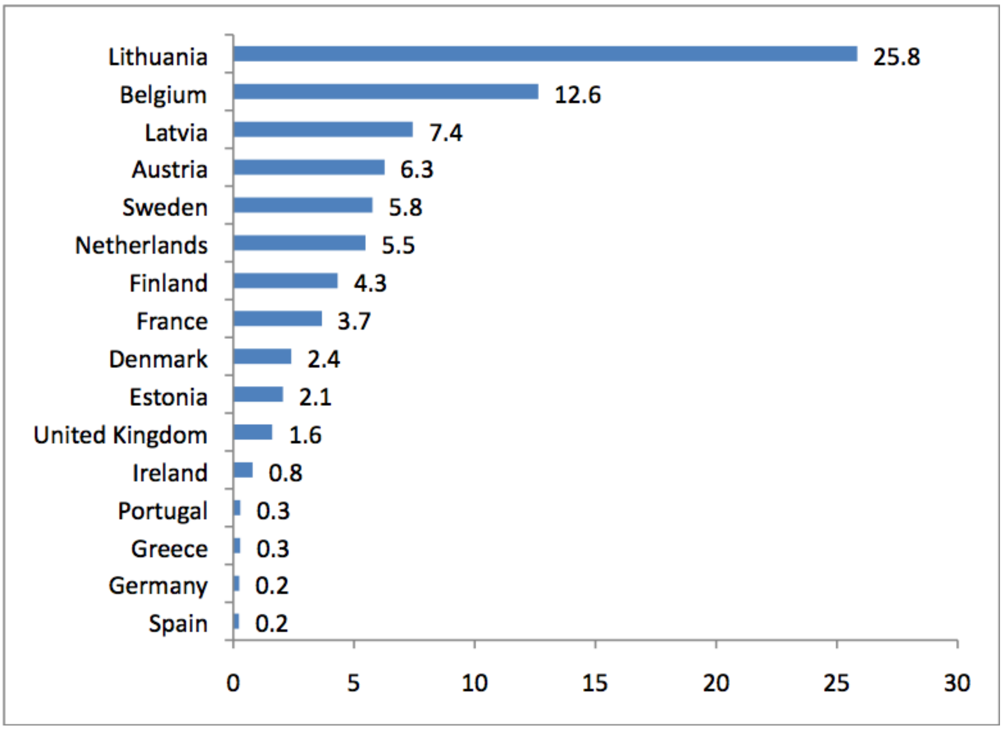


Figure A8: Off-trade/on-trade sales ratio for pure alcohol volume sold from cider/perry, 2010



Note

At an ‘on-trade’ retailer's establishment (e.g. a bar, pub, or restaurant), the alcoholic beverage is sold for consumption ON the premises. At an ‘off-trade’ retailer's establishment (off licences and supermarkets but often also bars and pubs), the alcoholic beverage is sold for consumption OFF the premises.

Table A1: The market share of the top three brands for high-strength pre-mixes and RTDs in 24 EU countries

	High-strength premixes			RTDs		
	Brand	Company name	Market share (%)	Brand	Company name	Market share (%)
Austria	Eristoff	Bacardi & Co Ltd	73.2	Gösser	Heineken NV	36.4
	Taiga	Sonnleiten Kellerei GmbH	3.8	Kaiser	Heineken NV	8.8
	Bacardi	Bacardi & Co Ltd	2.7	Gaudi Radler	Stieglbrauerei zu Riedenburg, Franz Huemer & Co	8.1
Belgium	Bacardi	Bacardi & Co Ltd	19.3	William Lawson	Bacardi & Co Ltd	15.9
	Eristoff	Bacardi & Co Ltd	13.2	Bacardi & Cola	Bacardi & Co Ltd	9.8
	Gento	Bruggeman NV	5.1	Bacardi Breezer	Bacardi & Co Ltd	9.1
Bulgaria				Bacardi Breezer	Bacardi & Co Ltd	48.3
				Smirnoff Ice	Diageo Plc	36.2
				Sobieski	Belvédère SA	12.5
Czech Republic				Staropramen Cool Lemon	StarBev Sarl	62.7
				Frisco	SABMiller Plc	28.5
				Smirnoff Ice	Diageo Plc	1.7
Denmark	Smirnoff	Diageo Plc	50.0	Bacardi Breezer	Bacardi & Co Ltd	63.0
	Bacardi	Bacardi & Co Ltd	35.0	Smirnoff Ice	Diageo Plc	22.0
	Others	Others	15.0	Caribbean Twist	Halewood International Ltd	-
Estonia				Saku	Carlsberg A/S	32.1
				Gin Long Drink	Olvi Oyj	29.6
				Viru Valge Cooler	Liviko AS	8.5
Finland	Gin Lemon	Altia Oyj	25.2	Hartwall Original Gin Long Drink	Heineken NV	18.9
	Karpalet	Altia Oyj	25.1	Olvi Lonkero	Olvi Oyj	17.0
	Puolukka vodka Cocktail	Altia Oyj	16.9	Otto	Heineken NV	13.4
France	Old Nick	La Martiniquaise SVS	35.9	Panach'	Heineken NV	42.6
	Pitterson	Belvédère SA	14.8	Force 4	Carlsberg A/S	17.2
	Dillon	La Martiniquaise SVS	11.3	Smirnoff Ice	Diageo Plc	1.7
Germany	Berentzen Fruchtige	Berentzen-Gruppe AG	20.1	Oettinger	Oettinger Brauerei GmbH	10.8
	Kleiner Feigling	Waldemar Behn GmbH & Co KG	6.9	Veltins	Brauerei C & A Veltins GmbH & Co KG	9.2

	High-strength premixes			RTDs		
	Berentzen Exotics	Berentzen-Gruppe AG	5.9	Schöfferhofer	Oetker-Gruppe	7.3
Greece	Ursus Roter	Diageo Plc	44.6	Gordon's	Diageo Plc	56.5
	Smirnoff	Diageo Plc	43.5	Bacardi Breezer	Bacardi & Co Ltd	24.7
	Eristoff	Bacardi & Co Ltd	5.9	Smirnoff Ice	Diageo Plc	15.4
Hungary				Soproni	Heineken NV	24.3
				Bacardi Breezer	Bacardi & Co Ltd	23.9
				Borsodi	StarBev Sarl	10.7
Ireland				West Coast	Pernod Ricard Groupe	40.2
				WKD	Beverage Brands (UK) Ltd	14.4
				Smirnoff Ice	Diageo Plc	13.4
Italy	Keglevich	Stock Spirits Group	56.7	Campari Soda	Campari Milano SpA, Davide	34.3
	Artic	Illva Saronno SpA	22.0	Bacardi Breezer	Bacardi & Co Ltd	16.5
	Keglevich	Eckes AG	-	Aperol	Campari Milano SpA, Davide	6.4
Latvia				Cesus	Olvi Oyj	31.7
				D-light	Carlsberg A/S	26.5
				Dins	Soyuzplodimport ZAO	12.5
Lithuania	Stakliskiu	Lietuviskas Midus UAB	57.1	Utenos	Carlsberg A/S	33.1
	Sobieski Like	Vilniaus Degtine AB	25.4	DLight	Carlsberg A/S	15.3
				Mix	Alita AB	10.3
Netherlands	elPicu	Hooghoudt Distillery BV	13.2	Bacardi Breezer	Bacardi & Co Ltd	71.2
	Coebergh	Lucas Bols BV	12.8	Smirnoff Ice	Diageo Plc	14.1
	Siebrand	Siebrand Groep BV	10.8	Vodka Mix	Hooghoudt Distillery BV	3.3
Poland				Sobieski	Belvédère SA	39.8
				Bacardi Breezer	Bacardi & Co Ltd	20.5
				Smirnoff Ice	Diageo Plc	18.5
Portugal				Smirnoff Ice	Diageo Plc	31.9
				Metz	Bacardi & Co Ltd	19.0
				Eristoff	Bacardi & Co Ltd	18.2
Romania	Cuerpo	Grands Chais de France SA, Les	74.3	Salitos	Miller Brands Germany GmbH	43.7
	Bacardi	Bacardi & Co Ltd	10.8	Beck's	Anheuser-Busch InBev NV	32.3
				Bergenbier	StarBev Sarl	8.3
Slovakia				Jelzin Life Ice	Grands Chais de France SA, Les	31.5
				Salitos Ice	Miller Brands Germany GmbH	17.3
				Campari Mixx	Campari Milano SpA, Davide	12.1

	High-strength premixes			RTDs		
Slovenia				Bandidos	Pivovarna Laško dd	42.2
				Radler	Pivovarna Laško dd	38.0
				Bacardi Breezer	Bacardi & Co Ltd	0.3
Spain	Eristoff	Bacardi & Co Ltd	66.4	Tinto de La Casera	Suntory Holdings Ltd	14.9
	Redrives	Rives-Pitman SA	1.9	Tinto de Verano Don Simon	García Carrión SA, J	8.9
	Bluerives	Rives-Pitman SA	1.8	Mixta Shandy	Grupo Mahou-San Miguel SA	7.4
Sweden	Bacardi	Bacardi & Co Ltd	62.6	Xide	Carlsberg A/S	37.3
	Margarita	Group Toorank BV	8.2	Bacardi Breezer	Bacardi & Co Ltd	20.9
	Pina Colada	Tavasa SA	8.2	Cid	Krönleins Bryggeri AB	14.5
United Kingdom	Taboo	William Grant & Sons Ltd	56.7	WKD	Beverage Brands (UK) Ltd	35.0
	Alizé	Kobrand Inc	7.1	Crabbie's Ginger	Halewood International Ltd	15.3
	Bacardi	Bacardi & Co Ltd	1.0	Smirnoff Ice	Diageo Plc	10.0

Methodology for estimating the commercial value of the alcohol underage market

We use the 2007 round of the ESPAD survey data, which includes information on a representative sample of European students aged 15-16. For each consumer aged 16 we recover the composition of his/her alcohol consumption in the last drinking occasion, expressed in litres for each beverage captured by the survey (i.e. beer, alcopops, cider, wine and spirits). We denote this quantity as the vector $q=(q_1,...,q_5)$. We follow two alternative procedures to assess the yearly consumption per beverage.

In the first procedure we assume that the pattern of consumption observed in the last drinking day is the typical student drinking pattern when he/she drinks. Therefore the total amount consumed in one year is given by the product between vector q and the number of times each student reports to have drunk during the past 12 months[1]. The latter is equal to the student's answer to the question "on how many occasions have you had any alcoholic beverage to drink during the last 12 months" excepting from those reporting the open-ended category 40+. For these students we have considered the answer to the question "on how many occasions have you had any alcoholic beverage to drink during the last 30 days" and we have multiplied the answer by 12. Finally, the average per capita consumption per beverage is obtained by taking the country weighted average of individual consumption.

In the second procedure, we exploit also the monthly frequency of consumption specific for each beverage. This allows relaxing the hypothesis that the consumption composition of the last drinking occasion is the typical/representative one. There is reason to believe that this hypothesis, while correct as a first approximation, may be rather imprecise. For instance, about 25 percent of those declaring no consumption of beer in the last occasion also report that they have drunk beer at least once in the past 30 days. It is likely that these are people that drink regularly, for whom beer is a common alternative, but who did not drink beer during the last drinking occasion. Likewise, about 20 percent of those reporting not having consumed beer in the past 30 days report that they have consumed beer in the last drinking occasion. These are likely to be students who do not drink often, so that they tried some beer, but not during the last 30 days. Similar problems apply in different degrees also to the other alcoholic beverages covered by ESPAD. To address and correct these issues we proceed as follows: First, to those students who report not having drunk a given beverage during the last occasion but who report consumption during the past 30 days, we impute the average consumption in the last drinking occasion of those people reporting the same frequency of consumption during the past 30 days (living in the same country and being of the same gender). Conversely, for those students who report consumption on the last occasion but have not drunk in the past 30 days[2], we impute the average amount consumed in the last drinking occasion by those reporting not to have drunk in past 30 days. For all other students the amount of alcoholic beverages consumed in the last 30 days is given by the product of the amount consumed in the last drinking occasion and the frequency of consumption in the last 30 days. Finally these amounts are multiplied by 12 to obtain the annual consumption in litres per beverage.

To obtain the annual consumption vector of the representative student aged 16 in each country, we take the weighted average of individual consumption in each country. Next, by assuming that the pattern of consumption of the representative student aged 16 is similar to the pattern of the representative students aged 12-20, we obtain the size of the youth market for alcoholic drinks by

1 The ESPAD variables are categorical and typically open-ended. We always consider the mid-point of each category.

2 Students whose last drinking occasion occurred earlier than 1 year before the interview are considered are removed from the sample, to limit problems due to poor recall (they are 5.69 percent of the sample).

multiplying the consumption of the representative student aged 16 by the number of residents aged 12-20, by country. Population data is taken from EUROSTAT. We have chosen this age interval in order to make our estimate comparable to those of Foster, 2003.

The resulting market size of each beverage category is finally multiplied by the average price per litre recovered from Euromonitor in order to derive the commercial value. We use both retail prices[3] and manufacturer prices[4] prevailing in 2010. Therefore we have obtained both an estimate of the total market value and of the value accruing to producers only, net of the value added by the distribution chain.

Our estimates have to be taken as a first approximation as they rest - inevitably - on several assumptions. The major problem is the lack of microdata detailing the age-specific alcohol consumption for students older or young than 16 years. This forces us to assume that the consumption of the students 16 year old is representative also of the consumption of younger and older students in the age interval 12-20. While it is likely that age 16 consumption overstates the consumption at ages 12-15, it is equally likely that it (substantially) understates alcohol consumption in the 17-20 age group. We attempted to recover at least the frequency of consumption from the EUROBAROMETER 72.3 survey of 2009 but the sample is too small to obtain reliable estimates.

[3] The precise definition used in Euromonitor is “Retail selling price, ie sales at end price to consumer, including retailer and wholesaler mark-ups and sales tax (except in the US and Canada) and excise taxes”.

[4] The precise definition used in Euromonitor is “Manufacturer selling price, ie sales at ex-factory price, therefore minus sales tax, VAT, retailer and wholesaler mark-ups etc”.

Table A2: The commercial value of underage drinking – Procedure 1

Country	Beverage	Retail market value (mln €)	Manufacturer market value (mln €)	Total quantity (mln litres/year)	Retail price (euro/litre)	Manufacturer price (euro/litre)	Quantity per capita (litres/year)
AUT	alcopops	137	42	35.1	3.9	1.2	39.5
AUT	beer	335	97	88.3	3.8	1.1	99.2
AUT	cider				4	2	
AUT	spirits	452	92	10.6	42.7	8.7	11.9
AUT	wine	204	46	17.6	11.6	2.6	19.8
AUT	total	1128	277				
BEL	alcopops	190	82	21.6	8.8	3.8	18.8
BEL	beer	289	94	62.8	4.6	1.5	54.8
BEL	cider				3.9	2.4	
BEL	spirits	67	27	2.4	27.8	11.2	2.1
BEL	wine	34	14	3.8	8.8	3.6	3.4
BEL	total	579	217				
BGR	alcopops	60	24	7.9	7.6	3	9.5
BGR	beer	29	13	32.7	0.9	0.4	39.3
BGR	cider				6.2	1.8	
BGR	spirits	19	8	1.9	9.8	4.2	2.3
BGR	wine	15	7	3.7	4	1.8	4.4
BGR	total	123	51				
CZE	alcopops	79	28	14.6	5.4	1.9	12.9
CZE	beer	92	44	48.6	1.9	0.9	42.8
CZE	cider						
CZE	spirits	123	44	5.3	23.1	8.3	4.7
CZE	wine	34	13	5.9	5.8	2.2	5.2
CZE	total	328	129				
DEU	alcopops	614	205	186.1	3.3	1.1	22.7
DEU	beer	1502	350	500.7	3	0.7	61.2
DEU	cider				9	2	
DEU	spirits	1413	299	46.0	30.7	6.5	5.6
DEU	wine	289	92	48.2	6	1.9	5.9
DEU	total	3819	946				
EST	alcopops	5	2	1.4	3.7	1.5	8.5
EST	beer	5	3	2.7	2	1.1	16.2
EST	cider	6	3	1.8	3.3	1.5	10.6
EST	spirits	9	3	0.5	18.7	7	2.8
EST	wine	4	2	0.4	10.9	4.4	2.1
EST	total	29	13				
FIN	alcopops	22	11	2.9	7.6	3.8	4.9
FIN	beer	38	22	7.7	5	2.8	13.1
FIN	cider	23	12	3.1	7.4	3.9	5.3
FIN	spirits	27	12	0.7	39.3	18	1.2
FIN	wine	5	3	0.4	12.3	6.6	0.7
FIN	total	115	59				
FRA	alcopops				2.6	1.4	
FRA	beer	1193	431	331.4	3.6	1.3	45.4
FRA	cider				3.2	1.5	
FRA	spirits	1635	387	38.3	42.7	10.1	5.2
FRA	wine	478	183	46.9	10.2	3.9	6.4
FRA	total	3306	1000				
GBR	alcopops	1085	511	155.0	7	3.3	21.9
GBR	beer	1855	836	363.7	5.1	2.3	51.3
GBR	cider	585	277	153.9	3.8	1.8	21.7
GBR	spirits	1232	520	30.0	41	17.3	4.2
GBR	wine	433	188	37.6	11.5	5	5.3
GBR	total	5188	2332				
GRC	alcopops	140	29	7.1	19.7	4.1	6.8
GRC	beer	111	29	17.3	6.4	1.7	16.5

Country	Beverage	Retail market value (mln €)	Manufacturer market value (mln €)	Total quantity (mln litres/year)	Retail price (euro/litre)	Manufacturer price (euro/litre)	Quantity per capita (litres/year)
GRC	cider				10.7	2.5	
GRC	spirits	210	56	3.2	66	17.6	3
GRC	wine	51	12	3.4	14.8	3.4	3.3
GRC	total	511	126				
HUN	alcopops	34	17	7.2	4.8	2.4	6.5
HUN	beer	22	10	11.6	1.9	0.9	10.5
HUN	cider				2.5	1.6	
HUN	spirits	53	25	2.6	20.1	9.7	2.4
HUN	wine	22	10	6.0	3.6	1.7	5.5
HUN	total	131	63				
IRL	alcopops	123	45	9.7	12.7	4.6	18.9
IRL	beer				6.6	2.2	
IRL	cider				6.3	2.2	
IRL	spirits	91	39	1.4	63.5	27.3	2.8
IRL	wine	30	13	1.9	16.1	6.9	3.6
IRL	total	244	97				
ITA	alcopops	838	209	61.6	13.6	3.4	11.8
ITA	beer	613	173	133.2	4.6	1.3	25.5
ITA	cider						
ITA	spirits	592	137	17.6	33.7	7.8	3.4
ITA	wine	186	74	35.1	5.3	2.1	6.7
ITA	total	2228	593				
LTU	alcopops	8	4	2.8	2.8	1.5	6.1
LTU	beer	13	9	10.4	1.3	0.9	22.5
LTU	cider	15	10	6.9	2.2	1.5	14.9
LTU	spirits	19	8	1.1	17.4	7.6	2.4
LTU	wine	6	3	0.7	8.6	3.6	1.5
LTU	total	62	35				
LVA	alcopops	9	4	3.0	2.9	1.4	10.1
LVA	beer	12	7	8.3	1.4	0.9	28.4
LVA	cider	9	4	3.4	2.7	1.3	11.7
LVA	spirits	30	9	1.0	29.1	8.5	3.6
LVA	wine	11	4	0.9	12.1	4.3	3
LVA	total	70	29				
NLD	alcopops	1056	493	88.0	12	5.6	49
NLD	beer	537	221	158.0	3.4	1.4	88
NLD	cider				5.8	3.3	
NLD	spirits	412	128	11.9	34.7	10.8	6.6
NLD	wine	62	26	10.3	6	2.5	5.8
NLD	total	2067	868				
POL	alcopops	20	11	5.2	3.9	2.1	1.1
POL	beer	181	91	129.5	1.4	0.7	26.7
POL	cider			8.9			1.8
POL	spirits	162	84	13.2	12.3	6.4	2.7
POL	wine	61	34	20.2	3	1.7	4.2
POL	total	425	220				
PRT	alcopops	113	34	7.9	14.3	4.3	7.6
PRT	beer	60	18	16.7	3.6	1.1	16
PRT	cider				9.6	2.8	
PRT	spirits	109	31	3.7	29.2	8.2	3.6
PRT	wine	12	5	2.2	5.5	2.4	2.2
PRT	total	294	88				
SVK	alcopops	17	7	1.7	10	4.3	2.5
SVK	beer	32	14	15.0	2.1	0.9	21.5
SVK	cider			1.1			1.6
SVK	spirits	73	24	2.8	26.1	8.4	4
SVK	wine	28	12	4.3	6.6	2.8	6.1
SVK	total	150	57				

Country	Beverage	Retail market value (mln €)	Manufacturer market value (mln €)	Total quantity (mln litres/year)	Retail price (euro/litre)	Manufacturer price (euro/litre)	Quantity per capita (litres/year)
SVN	alcopops	17	5	3.0	5.5	1.6	14.8
SVN	beer	20	6	5.9	3.4	1.1	28.6
SVN	cider				5.2	1.5	
SVN	spirits	31	7	0.6	49.4	10.5	3
SVN	wine	31	8	2.2	13.7	3.5	10.9
SVN	total	98	26				
SWE	alcopops	19	8	2.1	9	3.6	1.9
SWE	beer	56	24	12.7	4.4	1.9	11.6
SWE	cider	24	10	5.7	4.1	1.8	5.2
SWE	spirits	90	46	1.6	55.6	28.2	1.5
SWE	wine	14	7	1.3	11.3	5.5	1.1
SWE	total	203	95				

Table A3: The commercial value of underage drinking – Procedure 2

Country	Beverage	Retail market value (mln €)	Manufacturer market value (mln €)	Total quantity (mln litres/year)	Retail price (euro/litre)	Manufacturer price (euro/litre)	Quantity per capita (litres/year)
AUT	alcopops	95	29	24.3	3.9	1.2	27.3
AUT	beer	321	93	84.5	3.8	1.1	95
AUT	cider				4	2	
AUT	spirits	399	81	9.3	42.7	8.7	10.5
AUT	wine	86	19	7.4	11.6	2.6	8.3
AUT	total	901	223				
BEL	alcopops	255	110	29.0	8.8	3.8	25.3
BEL	beer	320	104	69.6	4.6	1.5	60.8
BEL	cider				3.9	2.4	
BEL	spirits	58	24	2.1	27.8	11.2	1.8
BEL	wine	32	13	3.6	8.8	3.6	3.2
BEL	total	666	251				
BGR	alcopops	82	33	10.8	7.6	3	13
BGR	beer	79	35	87.3	0.9	0.4	104.8
BGR	cider				6.2	1.8	
BGR	spirits	41	18	4.2	9.8	4.2	5.1
BGR	wine	21	10	5.3	4	1.8	6.4
BGR	total	223	95				
CZE	alcopops	95	33	17.6	5.4	1.9	15.5
CZE	beer	161	76	84.7	1.9	0.9	74.6
CZE	cider						
CZE	spirits	157	57	6.8	23.1	8.3	6
CZE	wine	49	19	8.5	5.8	2.2	7.5
CZE	total	463	185				
DEU	alcopops	706	235	213.8	3.3	1.1	26.1
DEU	beer	1710	399	57	3	0.7	69.6
DEU	cider				9	2	
DEU	spirits	1378	292	44.9	30.7	6.5	5.5
DEU	wine	255	81	42.6	6	1.9	5.2
DEU	total	4049	1007				
EST	alcopops	9	4	2.5	3.7	1.5	15.1
EST	beer	10	5	4.9	2	1.1	29
EST	cider	10	5	3.0	3.3	1.5	18.1
EST	spirits	16	6	0.8	18.7	7	5
EST	wine	5	2	0.5	10.9	4.4	2.9
EST	total	50	22				
FIN	alcopops	34	17	4.5	7.6	3.8	7.7
FIN	beer	84	47	16.9	5	2.8	28.8
FIN	cider	41	22	5.5	7.4	3.9	9.4
FIN	spirits	45	21	1.2	39.3	18	2
FIN	wine	9	5	0.7	12.3	6.6	1.2
FIN	total	214	111				
FRA	alcopops				2.6	1.4	
FRA	beer	1593	575	442.5	3.6	1.3	60.6
FRA	cider				3.2	1.5	
FRA	spirits	1892	447	44.3	42.7	10.1	6.1
FRA	wine	503	192	49.3	10.2	3.9	6.8
FRA	total	3988	1215				
GBR	alcopops	1620	764	231.4	7.0	3.3	32.7
GBR	beer	2007	905	393.5	5.1	2.3	55.5
GBR	cider	718	340	189.0	3.8	1.8	26.7
GBR	spirits	1571	663	38.3	41	17.3	5.4
GBR	wine	510	222	44.3	11.5	5	6.3
GBR	total	6426	2894				

Country	Beverage	Retail market value (mln €)	Manufacturer market value (mln €)	Total quantity (mln litres/year)	Retail price (euro/litre)	Manufacturer price (euro/litre)	Quantity per capita (litres/year)
GRC	alcopops	357	74	18.1	19.7	4.1	17.3
GRC	beer	188	50	29.3	6.4	1.7	28
GRC	cider				10.7	2.5	
GRC	spirits	409	109	6.2	66	17.6	5.9
GRC	wine	114	26	7.7	14.8	3.4	7.4
GRC	total	1068	259				
HUN	alcopops	70	35	14.5	4.8	2.4	13.2
HUN	beer	46	22	24.2	1.9	0.9	22
HUN	cider				2.5	1.6	
HUN	spirits	91	44	4.5	20.1	9.7	4.1
HUN	wine	43	20	11.9	3.6	1.7	10.8
HUN	total	250	121				
IRL	alcopops	137	50	10.8	12.7	4.6	21.1
IRL	beer				6.6	2.2	
IRL	cider				6.3	2.2	
IRL	spirits	123	53	1.9	63.5	27.3	3.8
IRL	wine	28	12	1.7	16.1	6.9	3.3
IRL	total	288	114				
ITA	alcopops	1289	322	94.8	13.6	3.4	18.1
ITA	beer	1084	306	235.7	4.6	1.3	45.1
ITA	cider						
ITA	spirits	802	186	23.8	33.7	7.8	4.6
ITA	wine	288	114	54.4	5.3	2.1	10.4
ITA	total	3463	928				
LTU	alcopops	13	7	4.6	2.8	1.5	9.9
LTU	beer	23	16	17.8	1.3	0.9	38.6
LTU	cider	28	19	12.8	2.2	1.5	27.8
LTU	spirits	25	11	1.4	17.4	7.6	3.1
LTU	wine	11	5	1.3	8.6	3.6	2.7
LTU	total	100	57				
LVA	alcopops	14	7	4.9	2.9	1.4	16.8
LVA	beer	21	13	14.9	1.4	0.9	50.9
LVA	cider	15	7	5.7	2.7	1.3	19.7
LVA	spirits	46	13	1.6	29.1	8.5	5.4
LVA	wine	22	8	1.8	12.1	4.3	6.1
LVA	total	118	49				
NLD	alcopops	1144	534	95.3	12	5.6	53.1
NLD	beer	635	261	186.7	3.4	1.4	104
NLD	cider				5.8	3.3	
NLD	spirits	351	109	10.1	34.7	10.8	5.6
NLD	wine	64	27	10.7	6	2.5	5.9
NLD	total	2193	931				
POL	alcopops	50	27	12.9	3.9	2.1	2.7
POL	beer	312	156	222.8	1.4	0.7	45.9
POL	cider			15.3			3.2
POL	spirits	199	104	16.2	12.3	6.4	3.3
POL	wine	52	29	17.2	3	1.7	3.5
POL	total	613	316				
PRT	alcopops	265	80	18.5	14.3	4.3	17.8
PRT	beer	143	44	39.6	3.6	1.1	38.1
PRT	cider				9.6	2.8	
PRT	spirits	243	68	8.3	29.2	8.2	8
PRT	wine	26	11	4.6	5.5	2.4	4.5
PRT	total	676	203				

Country	Beverage	Retail market value (mln €)	Manufacturer market value (mln €)	Total quantity (mln litres/year)	Retail price (euro/litre)	Manufacturer price (euro/litre)	Quantity per capita (litres/year)
SVK	alcopops	27	12	2.7	10	4.3	3.9
SVK	beer	50	22	24.0	2.1	0.9	34.4
SVK	cider			1.3			1.9
SVK	spirits	121	39	4.7	26.1	8.4	6.7
SVK	wine	48	21	7.3	6.6	2.8	10.5
SVK	total	248	93				
SVN	alcopops	31	9	5.6	5.5	1.6	27.2
SVN	beer	25	8	7.3	3.4	1.1	35.5
SVN	cider				5.2	1.5	
SVN	spirits	40	8	0.8	49.4	10.5	3.9
SVN	wine	43	11	3.2	13.7	3.5	15.3
SVN	total	139	36				
SWE	alcopops	68	27	7.6	9	3.6	6.9
SWE	beer	131	56	29.7	4.4	1.9	27.1
SWE	cider	79	35	19.2	4.1	1.8	17.5
SWE	spirits	221	112	4.0	55.6	28.2	3.6
SWE	wine	28	14	2.5	11.3	5.5	2.2
SWE	total	526	244				

Annex B
Supplement to Chapter 3

ESPAD dataset, and detailed description of Tables and Figures

Description of ESPAD dataset
ESPAD (the European School Survey Project on Alcohol and Other Drugs) is a repeated cross section conducted every four years in a large number of European Countries. The main purpose of the ESPAD project is that of collecting comparable data on substance use among 15-16 year old students. Data collection consists of school surveys, carried out during the same period of time (typically spring months) and with a common methodology and questionnaire. So far four rounds have been completed in 1995, 1999, 2003 and 2007. The data for the fifth round (2011) has not yet been published.

The 1995 round included 26 countries, the second round (1999) 30 countries and in 2003 the number had increased to 35. The number of participating countries was 35 also in 2007. In the 2007 data collection more than 100,000 students took part from the following countries: Armenia, Austria, Belgium (Flanders), Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, the Faroe Islands, Finland, France, Germany (7 Bundesländer), Greece, Hungary, Iceland, Ireland, the Isle of Man, Italy, Latvia, Lithuania, Malta, Monaco, the Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, the Slovak Republic, Slovenia, Sweden, Switzerland, Ukraine and the United Kingdom.

The target population of the ESPAD study is defined as the national population of students whose 16th birthday is in the calendar year of the survey. For example the target population is the cohort born in 1991 for the 2007 round and the cohort born in 1987 for the 2003 round. In Germany, data collection was limited to the 7 out of 16 federal states (Bundesländer) that agreed to participate (one more than in 2003). They were Bavaria, Brandenburg, Berlin, Hesse, Mecklenburg-Western Pomerania and Thuringia. In Belgium, only the Dutch-speaking part (Flanders) took part (in 2003 the whole country was included). While the results obtained for these two countries may to some degree reflect the situation in the country as a whole, they are representative only of the population from which the samples were drawn.

In all countries the class was the final sampling unit. In most countries, the class was the last unit in a multi-stage stratified sampling process where schools were sampled before the final sampling of classes was performed.

Only in few cases nearly all students of the target population were enrolled in a single grade, while typically large proportions of them were to be found in two or more grades. In the latter case, subject to the availability of the necessary resources, the strategy was to include as many grades as possible that included students of the target population, or at least each grade that included 10% or more of the target population. If only one of these grades could be included, it was the grade with the largest proportion of student members of the target population.

As a result, in the 2007 round, in about two-thirds of the countries, 90% or more of the students born in 1991 were in the grades studied. In addition, the proportion was also rather high (85–89%) in another 20% of the countries. The corresponding figure was lower in Armenia, Malta, Romania and Switzerland, where only 80–83% of students born in 1991 were found in grades that participated in the data collection.

In nearly all countries, students born in other years than 1991 who belonged to sampled classes usually also answered the questionnaire.

One limitation of ESPAD data regards the high proportions of schools and classes that refused to participate. In six countries where the non-participation rate for schools or classes was 40% or more. The highest proportions of refusing schools were found in Denmark (58%), the United Kingdom (51%), Belgium (Flanders) (46%), Austria and the Netherlands (45% each) and Norway (42%). In some countries, including Armenia, Austria, Bulgaria, Finland, Germany, Greece, Italy, Lithuania, Romania and Switzerland, non-participating schools or classes were replaced by other randomly selected schools/classes. To maintain representativeness, this procedure presupposes that the replaced schools and classes are equivalent to those refusing to participate. However, it cannot be excluded that some schools/classes might have refused owing to supposed "bad drug habits" among their students.

To ensure that a satisfactory level of precision can be obtained for the estimates of various sub-groups of the population, the ESPAD guidelines recommend a net sample of 2,400 participating students in each country. For countries where the target cohort is smaller than about 30,000 people, however, a smaller sample size is allowed. In small countries, the total population was included in the data collection. This was the case in the three countries with the smallest sample sizes: Monaco (393 students with valid questionnaires), the Faroe Islands (552) and the Isle of Man (740). In other ESPAD countries, the size of the net sample ranges from 877 (Denmark), 1,889 (Belgium (Flanders)) and 2,091 (the Netherlands) to 6,341 (Cyprus) and 9,981 (Italy). With the exception of Denmark, where a combination of a small gross sample and a high school-dropout level led to a net sample which was too small to be considered fully representative, the number of participating students is satisfactory for international comparisons between countries.

The response rate, defined as the proportion of students who completed the questionnaire out of all students in participating classes, is good or very good in nearly all countries. The average is 87%, and in 21 countries 85% or more of the students in participating classes answered the questionnaire. The lowest response rate has been observed in Armenia and Estonia: in both of these countries the rate was 79%.

Student refusing to participate was at a very low level in nearly all countries. The highest figures were found in the Isle of Man and the United Kingdom, where 2% did not take part.

The reliability of the data is high. A number of testing questions were repeated twice in the questionnaire and responses were compared. Inconsistency rates (i.e. diverging responses to the same questions) are satisfactorily low. The validity of the ESPAD data is high as well. To investigate validity several indicators were considered, including student cooperation, student comprehension, anonymity, reported use of the dummy drug, rates of missing data, logical consistency and construct validity. The main threats to validity relate to reported lack of willingness to answer honestly as well as to the cultural context. Validity problems were encountered only in a small number of countries. Only two countries exhibited problems for more than one of the validity measures considered. Countries about which some critical remarks have been made include Cyprus (many discarded questionnaires, much disturbance during data collection, less interested students), Croatia (many who would not admit to cannabis consumption), the Faroe Islands (many discarded questionnaires), Italy (many discarded questionnaires and many students who found the questionnaire difficult), Latvia (many who would not admit to cannabis consumption) and Lithuania (many who would not admit to cannabis consumption and many who found the questionnaire difficult to answer).

Difficulty in obtaining access to alcoholic drinks
The students were asked how difficult they would find it to obtain beer, cider, alcopops, wine and spirits if they wanted to. They rated from impossible to very easy on a 5 point scale. On average, almost four in five students (78%) stated that beer would be “fairly easy” or “very easy” to obtain (Table B1). The corresponding figure for wine was 70%, for both alcopops and cider the proportion was 68% and that for spirits 56%. In general alcohol is easy to obtain in all countries, more so for beer and less for spirits. Differences between boys’ and girls’ answers are minor.

Alcohol consumption
In all ESPAD countries, at least two thirds of the 15-16 year old students have drunk alcohol at least once during their lifetime (Table B2). The ESPAD average is close to 90%. The highest rates of lifetime alcohol prevalence (above 95%) are found in Austria, the Czech Republic, Latvia and Denmark, and the lowest ones in Spain, Sweden and Romania (about 80%). Outside the EU, the prevalence rates are even lower in Norway (77%) and the US (62%). In most countries boys have a higher frequency of consumption than girls (Table B3). The difference is larger in southern Europe, while it is narrower in Scandinavia, eastern Europe, Ireland and the UK. Figures B1-B4, which document the age at first drink for central, eastern, Mediterranean and northern European countries, show that, apart from a higher age for first drinking spirits, there are no obvious consistent patterns across countries for age of first drink of alcopops, cider, beer and wine.

Turning to the frequency of consumption in the last 12 months (Table B4) we find, unsurprisingly, figures to be lower than for lifetime consumption. Only in 4 out of 29 countries do more than 90% indicate alcohol use during the past 12 months (compared with 18 countries scoring 90% or more for lifetime prevalence). They are Austria, the Czech Republic, Denmark, and Germany. Differences across genders in the frequency of alcohol consumption in the last 12 months reflect those in Table B3 and have not been reported. The proportion of students who drank between 1 and 5 times during the previous 30 days was about 40 percent in most countries with minor differences between boys and girls (Table B5). Only a small minority (approximately 5%) reported drinking more than 20 times in the previous 30 days.

Table B6 reports the proportion of students who consumed each beverage on at least one occasion as a proportion of those who reported to have consumed any alcoholic drinks in the last 30 days. The most commonly reported type of beverage was beer (49%), followed by spirits (40%), wine and alcopops (35% each) and finally cider (28%). Countries for students scoring particularly high on beer consumption in the last 30 days were Bulgaria, the Czech Republic, and Germany, with about two thirds of the students reporting that they had drunk beer in the past month. Cider was the most prevalent in Lithuania (60%), followed by the other two Baltic states of Estonia and Latvia as well as Sweden, at roughly 40%. Austria, Cyprus, Denmark and the Netherlands are among the countries where alcopops were the most frequently reported to have been consumed. Cider and alcopops seem to be particularly uncommon in Poland. Wine drinking in the past 30 days was reported by 60% of the students from Malta while roughly half of those from Austria, Hungary and the Slovak Republic reported drinking wine. With the exception of Denmark, only around 15% of the students from the Nordic countries reported drinking wine in the past month. As regards use of spirits in the past month, the rate was around 60% in Austria, Denmark and Malta but was below 30% in Romania and Norway. Gender differences are more apparent for two beverages: beer was, on average, far more commonly reported by boys (58% versus 40%) while alcopops were more common among girls (37% versus 33%).

Figures B5-B8 document the frequency of drinking different beverage groups during the last 30 days separately for men and women and split into countries in which cider drinking was asked (Figures 5 and 6) or not asked (Figures 7 and 8). Alcopop or cider drinking do not stand out in any particular way.

When the students were asked what beverages they used on their latest drinking day, beer was mentioned by 43%, spirits by 30%, and wine, alcopops and cider by roughly one fifth each. These results reflect the same pattern of consumption as for reported for in the last 30 days. On average, the students reported a consumption of alcoholic beverages corresponding to 4.2 centilitres of pure alcohol (33g) on their latest drinking day (Table B7) (4.8 for boys and 3.5 for girls). Reconverted into a specific beverage, this corresponds, for example, to about 11 centilitres of spirits (2–3 drinks) or close to one litre of beer. Forty percent of the average amount drunk was derived from beer drinking. The second-most important beverage type was spirits, which contributed 30% of total alcohol consumption. Wine and alcopops contributed 13% and 11%, respectively, while cider made up only 6% of aggregate average consumption. In terms of volumes consumed almost twice the average were reported by students in Denmark (about 7.5 cl of pure alcohol). The United Kingdom, Norway, Austria and Finland also display relatively high volumes of alcohol drunk for the latest drinking day (5.5–5.9 cl). Sweden, too, scores relatively high (5.2 cl), meaning that the Nordic countries come across as high-consumption countries in terms of volumes consumed on the latest drinking day. Low levels on the latest drinking day – below 2.5 cl – are found for Romania and Cyprus, with a particularly low volume in the latter country (1.6 cl).

In no country did girls report larger alcohol volumes on their latest drinking day than boys. In three countries – Finland, Norway and Sweden – gender differences were more or less negligible. In the remaining countries, girls typically reported consuming about one-third less than boys. Countries with relatively large gender differences often scored below average on total consumption while countries with smaller gender differences, such as those just mentioned, were most often above that average. Beer made up about half of the boys' total consumption but only one fourth of that of the girls. Beer was dominant among girls in only 8 countries. For girls, spirits were typically the dominant beverage. This is the most common beverage type in 15 of the 28 countries. In Austria, France, Malta, and the Slovak Republic more than 50 percent of girls' alcohol intake derives from spirits. The contribution of alcopops to total consumption in Poland, the Slovak Republic, Romania, Bulgaria, Lithuania and Croatia is more or less negligible (around 3%). This type of beverage is far more common in Switzerland and Denmark, with a quarter of the consumption originating from alcopop use. The most dominating position for this drink category is however noticeable in the Netherlands, with 31% of the total consumption coming from alcopop use and the highest proportion per gender is found among Dutch girls (40%).

The students were also asked to indicate the frequency of episodes of intoxication. Countries with the highest percentages of students indicating that they have been drunk 10 times or more in their life include Denmark (30%), and the United Kingdom (23%). In Cyprus, Portugal, Romania, Greece, Italy and Belgium (Flanders), less than 5% had been intoxicated that many times. In a majority of countries, more boys than girls report intoxication experience, though the differences are not large.

Figures B9-B12 document the distribution by beverage type of the total amount of alcohol consumed for binge drinkers (those who reported having had five or more drinks in one occasion during the last 30 days) and non-binge drinkers split by whether cider was asked (Figures B9 and B10) or not (Figures B11 and B12). No remarkable patterns emerge, and there is no evidence to suggest that alcopops or ciders are used preferentially in binge drinking.

Table B1: Perceived availability of various alcoholic beverages by gender: percentages responding "fairly easy" or "very easy"

	Beer			Cider			Alcopops			Wine			Spirits		
Country	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All
Austria	91	89	90	.	.	.	77	77	77	80	82	81	58	55	57
Belgium (Flanders)	84	77	81	.	.	.	75	71	73	73	74	73	52	45	48
Bulgaria	84	81	83	.	.	.	62	60	61	74	74	74	64	61	62
Croatia	85	86	85	.	.	.	64	67	66	85	84	85	71	75	73
Cyprus	87	80	83	29	21	25	79	76	78	77	76	76	71	68	70
Czech Republic	85	86	85	0	.	.	63	60	61	75	77	76	57	54	55
Estonia	77	73	75	79	81	80	76	80	78	60	56	58	56	49	52
Finland	73	73	73	75	78	76	66	68	67	51	54	53	42	43	42
France	75	71	73	70	66	68	61	55	58	66	61	64	57	53	55
Germany (7 Bundesl.)	92	90	91	.	.	.	72	72	72	77	81	79	54	51	52
Greece	85	79	82	.	.	.	75	72	73	81	82	82	65	61	63
Hungary	81	79	80	.	.	.	73	74	74	80	78	79	63	59	61
Ireland	82	75	78	79	73	75	69	71	70	73	76	75	74	76	75
Italy	82	78	80	.	.	.	75	71	73	77	74	75	61	59	60
Latvia	80	78	79	81	84	82	74	74	74	68	67	67	59	52	55
Lithuania	75	72	73	79	82	80	73	70	71	58	58	58	53	48	50
Malta	82	75	78	55	49	52	56	53	54	83	81	82	72	74	73
Netherlands	89	81	85	.	.	.	82	80	81	66	71	69	55	54	55
Norway	80	81	80	79	80	79	77	79	78	60	62	61	50	52	51
Poland	81	82	82	.	.	.	.	.	.	66	65	65	57	52	55
Portugal	82	79	80	.	.	.	68	63	65	73	72	73	64	66	65
Romania	72	55	63	.	.	.	46	33	39	73	57	65	47	37	42
Slovak Republic	88	84	86	62	56	59	59	55	57	83	85	84	68	63	65
Slovenia	81	79	80	.	.	.	83	84	84	77	75	76	58	59	59
Sweden	80	81	81	81	83	82	69	73	71	60	65	62	65	69	67
Switzerland	88	86	87	.	.	.	61	61	61	76	74	75	53	50	52
UK	73	67	70	70	66	68	69	75	72	65	68	67	57	61	59
Average (unw.)	80	76	78	65	68	68	68	67	68	70	69	70	58	55	56
Denmark	97	94	95	.	.	.	95	95	95	86	81	83	87	81	84

Table B2: Frequency of lifetime use of any alcoholic beverage. All students. 2007. Percentages

	Number of occasions							No response
Country	0	1–2	3–5	6–9	10–19	20–39	40+	
Austria	4	5	5	7	11	15	52	2
Belgium (Flanders)	11	6	8	10	16	16	34	2
Bulgaria	13	10	9	10	14	12	32	4
Croatia	7	11	11	10	17	15	29	1
Cyprus	15	12	12	12	15	13	22	3
Czech Republic	3	5	7	11	16	18	41	2
Estonia	6	8	11	12	18	16	29	1
Finland	15	12	15	13	17	13	16	1
France	12	9	9	9	16	14	30	1
Germany (7 Bundesl.)	5	5	7	9	14	18	41	1
Greece	7	9	10	11	18	18	28	1
Hungary	7	13	12	12	19	15	22	2
Ireland	14	13	12	11	16	12	23	3
Italy	10	12	12	11	17	14	23	2
Latvia	3	8	11	12	18	15	33	1
Lithuania	5	9	11	13	18	14	29	2
Malta	8	8	9	11	15	16	33	1
Netherlands	10	7	7	8	13	15	40	3
Norway	23	17	16	11	13	9	11	2
Poland	12	13	14	11	15	12	23	1
Portugal	16	11	10	12	16	14	21	3
Romania	19	17	15	10	11	11	16	2
Slovak Republic	5	9	12	12	16	16	30	2
Slovenia	6	9	11	12	16	15	31	2
Sweden	19	16	16	12	14	10	14	2
Switzerland	9	9	12	14	17	17	22	1
United Kingdom	8	6	8	8	14	18	39	2
Average (unw.)	11	10	11	11	16	14	27	2
Denmark	4	3	6	6	14	17	49	2
Spain	19	7	12	9	13	12	29	..
USA	38	11	13	10	11	7	11	..

Table B3: Frequency of lifetime use of any alcoholic beverage by gender. 2007. Percentages

	Number of occasions														No response	
	0		1–2		3–5		6–9		10–19		20–39		40+			
Country	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Austria	4	5	5	5	5	5	6	8	11	12	13	18	55	48	1	2
Belgium (Flanders)	10	12	5	7	7	9	8	12	14	17	15	17	41	26	2	1
Bulgaria	11	16	9	10	7	11	8	11	12	16	12	13	40	23	3	4
Croatia	7	7	11	12	9	14	9	11	14	19	14	16	36	21	1	1
Cyprus	10	19	9	15	9	14	10	14	15	15	14	11	32	13	3	3
Czech Republic	3	2	5	5	6	8	9	12	14	17	17	19	45	37	2	2
Estonia	6	5	9	7	10	11	12	13	15	22	15	17	33	26	1	1
Finland	15	14	13	12	15	15	12	13	16	17	12	15	17	15	1	1
France	12	12	8	10	8	10	8	10	13	19	12	17	39	22	1	1
Germany (7 Bundesl.)	5	5	5	5	8	7	6	12	11	17	16	20	49	35	1	0
Greece	6	7	7	11	7	13	9	12	17	18	17	19	37	20	1	0
Hungary	7	7	13	13	10	13	11	13	17	21	16	14	26	19	2	1
Ireland	13	14	11	15	9	14	11	11	17	15	13	12	27	20	3	3
Italy	9	12	9	15	10	14	11	13	17	17	14	13	30	16	3	2
Latvia	4	3	8	7	11	12	11	13	16	19	14	15	35	31	1	2
Lithuania	5	4	10	9	12	11	10	15	18	19	13	15	33	26	2	2
Malta	6	10	7	9	7	10	9	12	14	15	15	16	41	27	1	1
Netherlands	11	9	7	6	5	9	6	11	11	15	11	19	48	32	3	3
Norway	25	22	17	16	16	15	10	13	13	14	8	10	11	10	2	2
Poland	11	12	12	14	13	16	9	13	13	17	12	12	30	17	1	1
Portugal	14	19	11	11	9	11	11	12	16	16	14	14	25	17	3	3
Romania	11	26	11	23	12	17	11	10	12	10	15	8	27	6	2	2
Slovak Republic	5	4	9	8	10	13	10	13	14	18	15	17	35	26	2	2
Slovenia	7	6	8	9	9	13	10	14	15	18	13	17	38	24	2	1
Sweden	21	17	17	15	14	17	11	13	13	16	9	12	15	12	3	1
Switzerland	9	10	9	9	11	14	11	16	16	18	17	16	28	16	1	1
United Kingdom	7	8	7	5	8	8	7	9	13	15	15	20	43	35	3	2
Average (unw.)	10	11	10	11	10	12	10	12	14	17	14	15	32	22	2	2
Denmark	3	5	2	4	5	7	6	6	12	16	14	20	58	41	1	2
Spain	21	17	7	6	11	12	8	9	12	14	11	14	30	28	..	..
USA	40	36	10	11	10	14	8	11	11	11	7	7	13	9	..	..

Figure B1: Age at first alcoholic drink by beverage type, central European countries

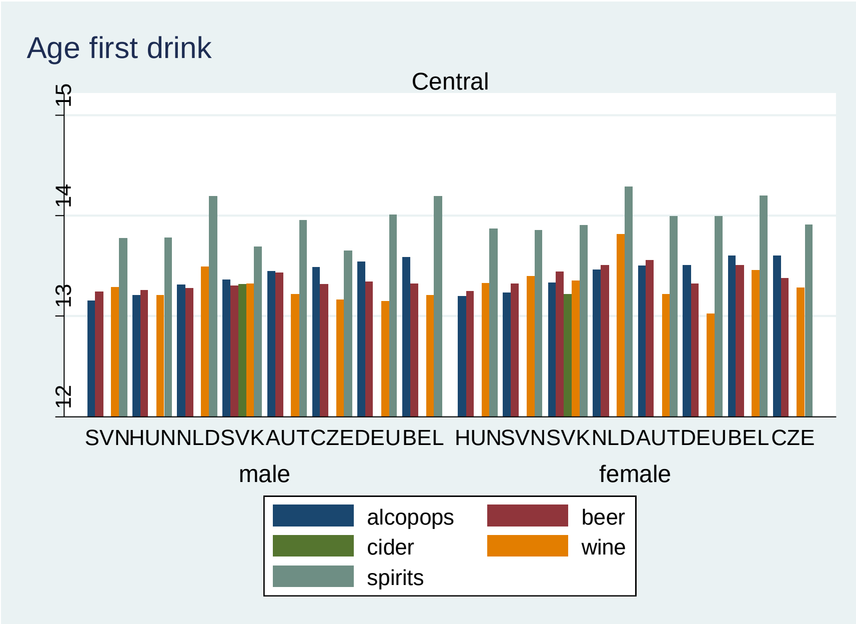


Figure B2: Age at first alcoholic drink by beverage type, eastern European countries

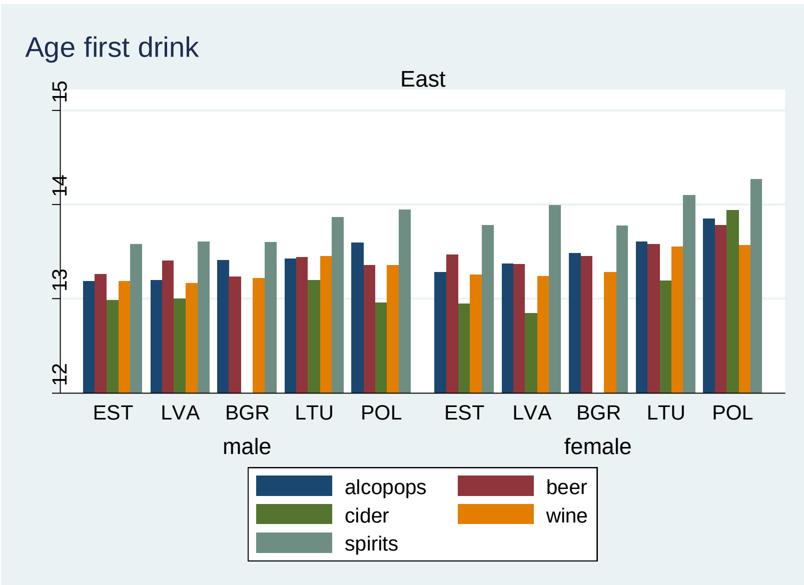


Figure B3: Age at first alcoholic drink by beverage type, Mediterranean European countries

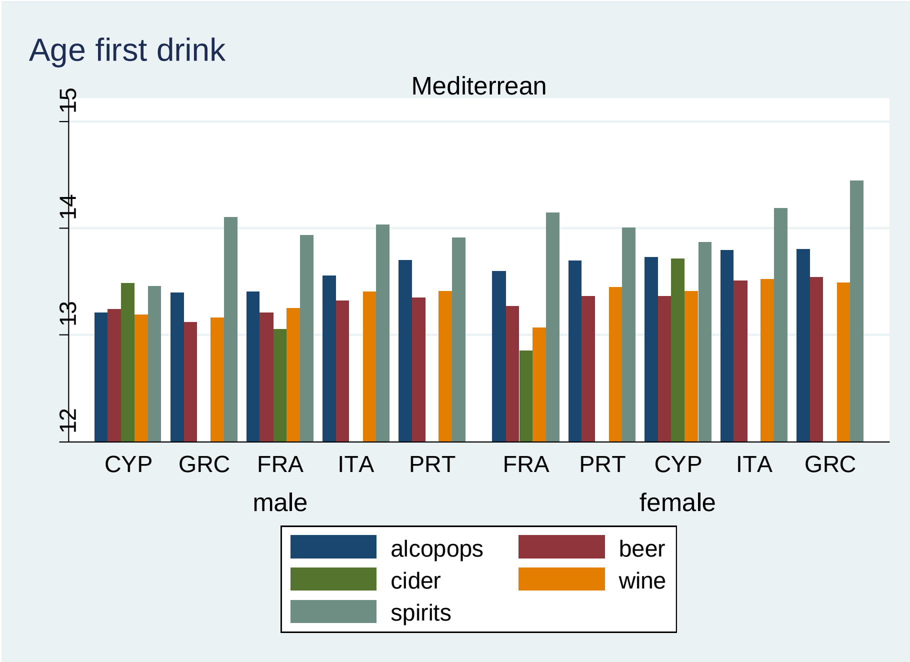


Figure B4: Age at first alcoholic drink by beverage type, northern European countries

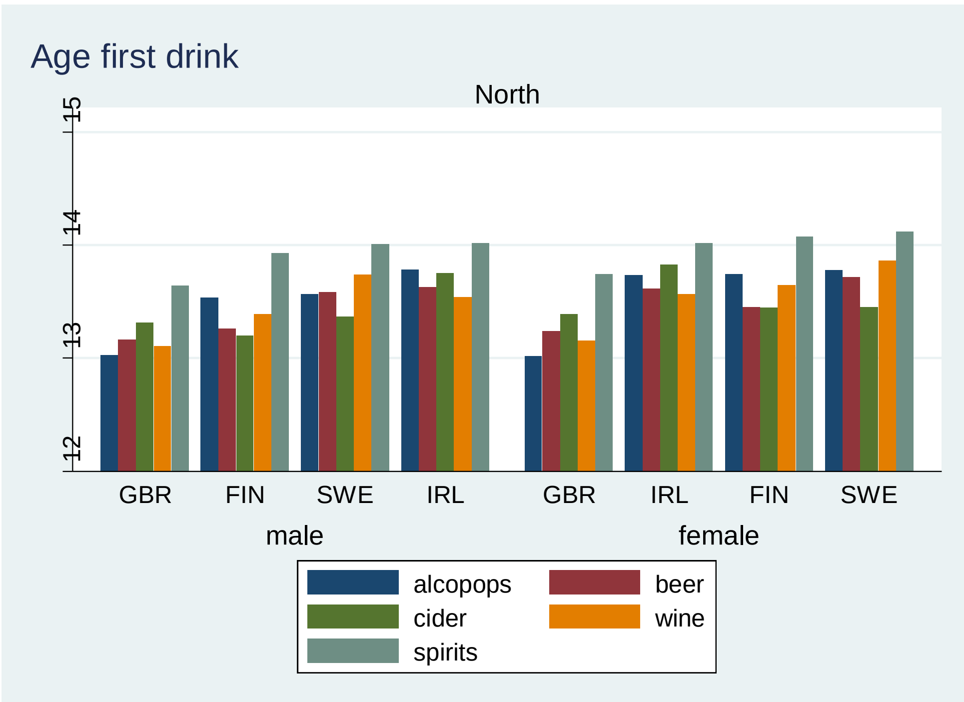


Table B4: Frequency of use of any alcoholic beverage during the last 12 months. All students. 2007. Percentages

	Number of occasions							
Country	0	1–2	3–5	6–9	10–19	20–39	40+	No response
Austria	8	9	10	10	16	18	30	2
Belgium (Flanders)	17	11	12	14	17	13	17	2
Bulgaria	17	18	13	13	15	11	13	3
Croatia	16	17	14	13	16	11	12	2
Cyprus	21	21	15	14	14	9	7	3
Czech Republic	7	14	15	14	19	14	17	2
Estonia	13	18	17	16	16	10	11	2
Finland	23	21	16	14	14	7	4	1
France	19	16	14	14	16	9	11	1
Germany (7 Bundesl.)	9	12	12	13	19	17	20	1
Greece	13	17	16	16	18	11	10	0
Hungary	16	22	17	14	15	9	8	2
Ireland	22	16	14	12	14	10	11	3
Italy	19	18	15	15	15	10	8	2
Latvia	11	19	17	17	15	11	11	2
Lithuania	13	20	18	15	15	9	11	2
Malta	13	13	13	12	17	15	17	1
Netherlands	16	10	11	12	16	14	22	3
Norway	34	20	15	12	10	5	3	4
Poland	22	20	16	14	14	8	7	1
Portugal	21	17	16	14	15	8	9	3
Romania	26	24	15	11	10	7	8	3
Slovak Republic	12	18	17	14	16	10	13	2
Slovenia	13	17	15	15	16	11	13	2
Sweden	29	22	15	12	11	6	4	4
Switzerland	15	16	17	16	16	11	8	1
United Kingdom	12	12	13	13	19	14	16	2
Average (unw.)	18	17	15	14	15	10	11	2
Denmark	6	7	13	11	21	18	24	3
Spain	23	11	16	11	15	10	13	..
USA	44	18	13	9	8	4	4	..

Table B5: Frequency of use of any alcoholic beverage during the last 30 days by gender. 2007. Percentages

	Number of occasions														No response	
	0		1–2		3–5		6–9		10–19		20–39		40+			
Country	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Austria	20	20	15	19	17	21	14	16	16	15	10	7	8	2	1	2
Belgium (Flanders)	28	32	20	27	16	18	12	11	14	8	6	2	3	1	2	2
Bulgaria	29	39	23	28	16	16	15	9	9	6	4	2	4	1	3	2
Croatia	34	38	21	28	17	18	12	7	10	6	4	1	2	1	1	1
Cyprus	28	47	25	29	17	12	13	7	10	4	4	1	3	0	4	3
Czech Republic	25	24	27	33	21	21	12	13	9	8	3	2	2	1	2	1
Estonia	42	38	29	35	15	15	7	7	4	3	1	1	1	0	2	1
Finland	54	51	30	31	10	12	4	4	1	2	0	0	0	0	1	1
France	34	38	21	27	16	17	12	9	10	6	4	2	4	1	1	1
Germany (7 Bundesl.)	23	26	19	26	18	21	15	14	15	10	6	2	4	1	1	1
Greece	25	33	25	33	20	17	14	10	9	6	4	2	2	0	1	0
Hungary	41	42	27	31	16	15	8	7	5	3	2	1	2	1	1	1
Ireland	43	44	23	24	15	14	8	9	8	6	2	2	2	1	3	2
Italy	31	42	22	25	16	15	13	9	11	6	4	2	3	1	2	1
Latvia	34	35	32	37	15	14	9	8	5	5	2	0	3	0	2	1
Lithuania	35	35	28	35	18	16	10	8	5	5	2	2	2	1	2	1
Malta	4	30	20	23	18	18	15	12	14	11	7	5	2	1	1	1
Netherlands	31	31	14	23	14	17	12	12	14	11	9	6	6	2	2	1
Norway	61	54	24	30	9	11	4	3	1	1	0	0	0	0	2	3
Poland	39	46	25	30	15	13	10	7	6	3	3	0	2	0	1	1
Portugal	38	42	22	25	14	14	11	8	8	6	4	2	3	2	4	3
Romania	34	60	29	26	15	8	9	3	8	2	3	1	2	0	3	2
Slovak Republic	38	37	23	28	16	17	10	10	8	5	3	2	2	1	1	2
Slovenia	32	37	27	31	19	17	9	9	8	4	3	1	2	1	2	1
Sweden	59	53	24	29	12	12	4	4	1	1	1	0	1	0	4	2
Switzerland	30	36	26	29	21	20	11	10	9	4	2	1	1	0	2	1
United Kingdom	31	29	21	26	20	21	12	13	10	8	4	2	3	1	2	2
Average (unw.)	37	40	24	28	16	15	10	8	8	5	3	2	2	1	2	1
Denmark	18	22	21	33	26	24	18	13	11	5	3	3	3	1	1	3
Spain	43	42	19	22	22	23	9	8	5	4	2	1	.	.	..	..
USA	67	67	17	19	9	8	4	3	3	2	1	1	1	0	..	..

Table B6: Use of various alcoholic beverages during the last 30 days by gender (among those reporting alcohol consumption). 2007. Percentages

	Beer		Cider		Alcopops		Wine		Spirits	
Country	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Austria	72	47	.	.	55	60	48	57	58	58
Belgium (Flanders)	66	48	.	.	42	47	26	32	34	29
Bulgaria	77	63	.	.	36	30	33	28	45	37
Croatia	61	40	.	.	26	24	51	42	44	51
Cyprus	67	37	14	6	60	52	41	31	47	27
Czech Republic	71	62	.	.	36	45	39	54	54	55
Estonia	49	21	36	52	37	47	25	35	44	44
Finland	43	33	22	38	22	28	14	18	29	32
France	53	40	33	30	31	32	34	23	45	40
Germany (7 Bundesl.)	73	56	.	.	38	45	37	51	51	46
Greece	54	32	.	.	45	43	54	43	50	42
Hungary	48	29	.	.	28	33	50	50	42	44
Ireland	49	31	37	26	20	35	17	25	40	49
Italy	61	46	.	.	52	46	50	34	46	40
Latvia	64	38	39	45	36	40	30	34	43	33
Lithuania	61	31	52	66	31	31	22	25	36	28
Malta	63	33	20	13	36	34	66	61	65	63
Netherlands	61	41	.	.	53	63	14	34	42	44
Norway	34	33	18	32	21	31	10	16	25	29
Poland	65	55	4	3	5	4	28	25	38	28
Portugal	59	50	.	.	40	38	35	32	51	53
Romania	74	50	.	.	29	18	59	36	30	18
Slovak Republic	53	38	14	12	17	19	49	53	50	51
Slovenia	57	38	.	.	51	52	46	37	43	46
Sweden	40	35	32	40	18	23	17	23	34	40
Switzerland	63	45	.	.	43	44	32	27	46	42
United Kingdom	60	38	36	29	33	53	30	47	43	52
Average (unw.)	58	40	27	28	33	37	34	36	41	39
Denmark	71	53	.	.	58	60	28	36	64	65

Figure B5: Frequency of drinking (average number of times), females. (Countries in which the question about cider is asked)

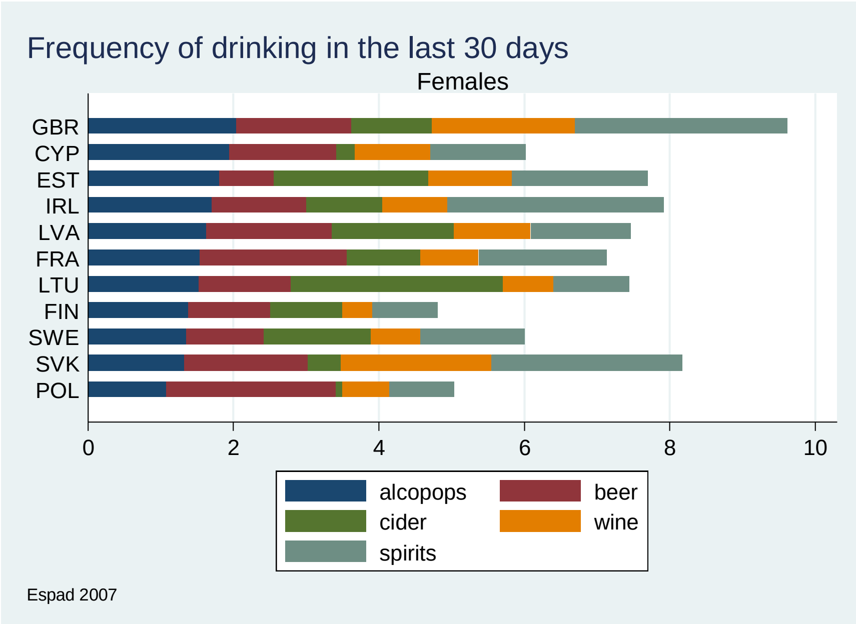


Figure B6: Frequency of drinking (average number of times), males. (Countries in which the question about cider is asked)

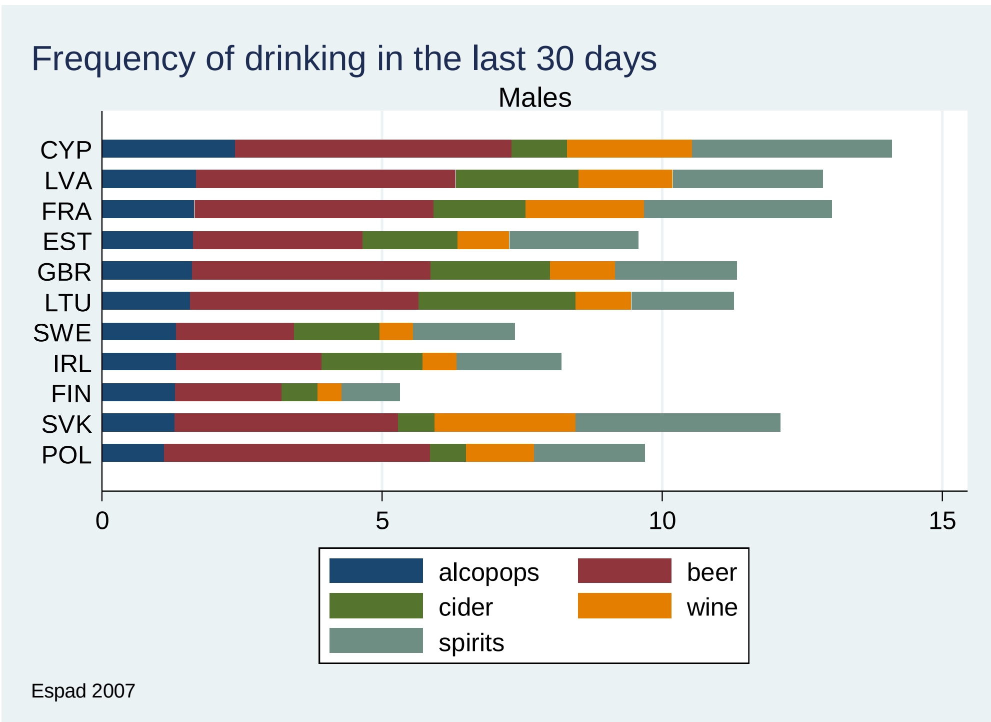


Figure B7: Frequency of drinking (average number of times), females. (Countries in which the question about cider is not asked)

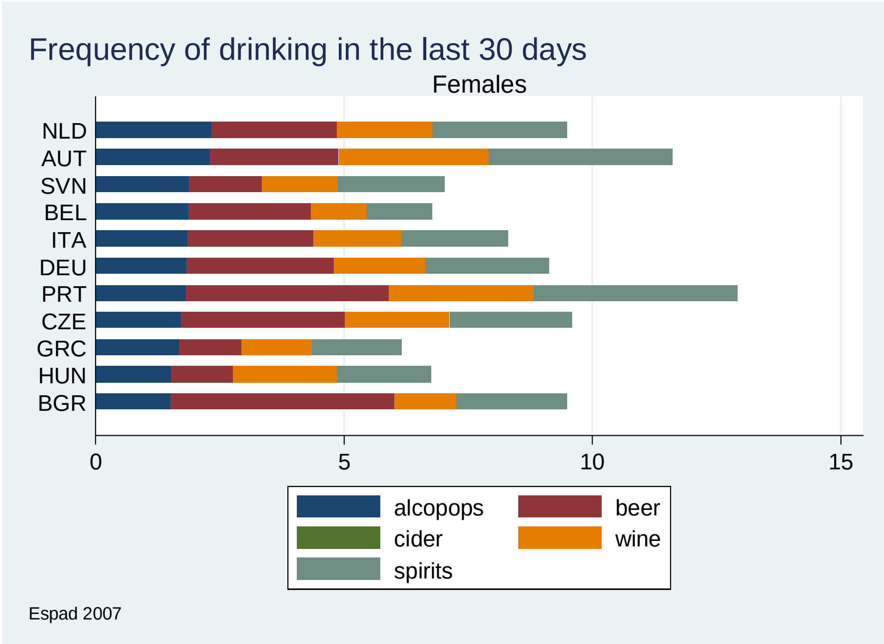


Figure B8: Frequency of drinking (average number of times), males. (Countries in which the question about cider is not asked)

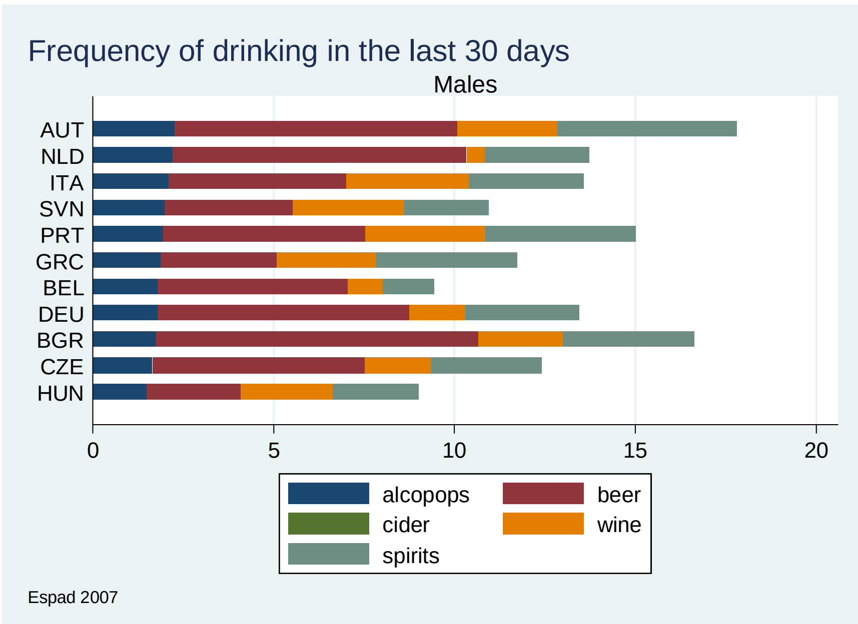


Table B7: Estimated average alcohol consumption during the last alcohol drinking day, per beverage and total. All students. 2007.
One centilitre = 8 grams alcohol

	Centilitres of 100% alcohol						Beverage proportion (percentages)					
Country	Beer	Cider Alcopops Wine	Alcopops	Wine	Spirits	Total	Beer	Cider Alcopops Wine	Alcopops	Wine	Spirits	Total
Austria	2.4	.	0.5	0.5	2.1	5.5	44	.	10	9	38	100
Belgium (Flanders)	2.4	.	0.9	0.5	0.6	4.3	55	.	20	11	13	100
Bulgaria	2.4	.	0.1	0.2	0.8	3.5	67	.	3	7	23	100
Croatia	1.9	.	0.2	1.3	1.7	5.2	37	.	4	25	33	100
Cyprus	1.2	0.0	.	0.2	0.7	2.1	56	2	.	10	32	100
Czech Republic	2.3	.	0.2	0.6	1.3	4.5	51	.	5	14	30	100
Estonia	1.2	1.0	0.6	0.4	1.9	5.1	23	20	12	8	36	100
Finland	2.2	1.1	0.7	0.3	1.4	5.7	39	19	13	5	24	100
France	1.5	.	.	0.3	1.6	3.6	43	.	.	10	46	100
Germany (7 Bundesl.)	2.1	.	0.7	0.6	1.6	5.1	42	.	13	13	30	100
Greece	0.9	.	0.4	0.6	1.3	3.1	27	.	12	18	43	100
Hungary	1.0	.	0.4	1.0	1.6	4.0	26	.	9	25	39	100
Ireland	..	.	0.7	0.3	..	..	..	..	..	..	..	..
Italy	1.3	.	0.5	0.6	1.3	3.6	37	.	13	16	35	100
Latvia	..	..	..	..	..	..	..	..	..	..	..	..
Lithuania	1.3	1.3	0.2	0.2	1.0	4.0	33	34	4	5	24	100
Malta	0.8	0.0	0.2	0.8	2.0	3.9	21	1	5	21	52	100
Netherlands	2.0	.	1.5	0.4	1.0	4.9	40	.	31	9	21	100
Norway	2.2	1.1	0.8	0.3	1.5	5.9	38	19	13	5	25	100
Poland	2.4	0.0	0.0	0.4	1.1	3.9	61	0	1	10	28	100
Portugal	0.8	.	0.3	..	..	..	..	..	..	..	..	..
Romania	1.6	.	0.1	0.5	0.3	2.5	62	.	3	22	12	100
Slovak Republic	1.0	0.0	0.1	1,0	2.1	4.2	24	1	2	23	50	100
Slovenia	1.3	.	1.0	1.1	1.2	4.5	29	.	22	24	26	100
Sweden	1.6	1.2	0.3	0.3	1.8	5.2	32	23	5	5	35	100
Switzerland	1.6	.	0.9	0.3	1.1	3.9	40	.	23	9	28	100
United Kingdom	2.1	0.8	1.1	0.7	1.5	6.2	34	13	17	12	24	100
Average (unw.)	1.6	0.6	0.5	0.5	1.4	4.2	40	6	11	13	30	100
Denmark	3.0	.	1.8	0.5	2.2	7.5	39	.	24	7	30	100

The average alcohol content of alcopops is set at 4.5%, that of beer and cider at 5%, that of wine at 12% and that of spirits at 38%. Averages refer to all students, with non-consumers set to zero (14% of the students stated that they never drank alcohol at all, when asked about consumption on their latest drinking day).

Figure B9: Consumption of alcohol (in percentage) for people who are binge drinkers (countries in which the question about cider is asked)

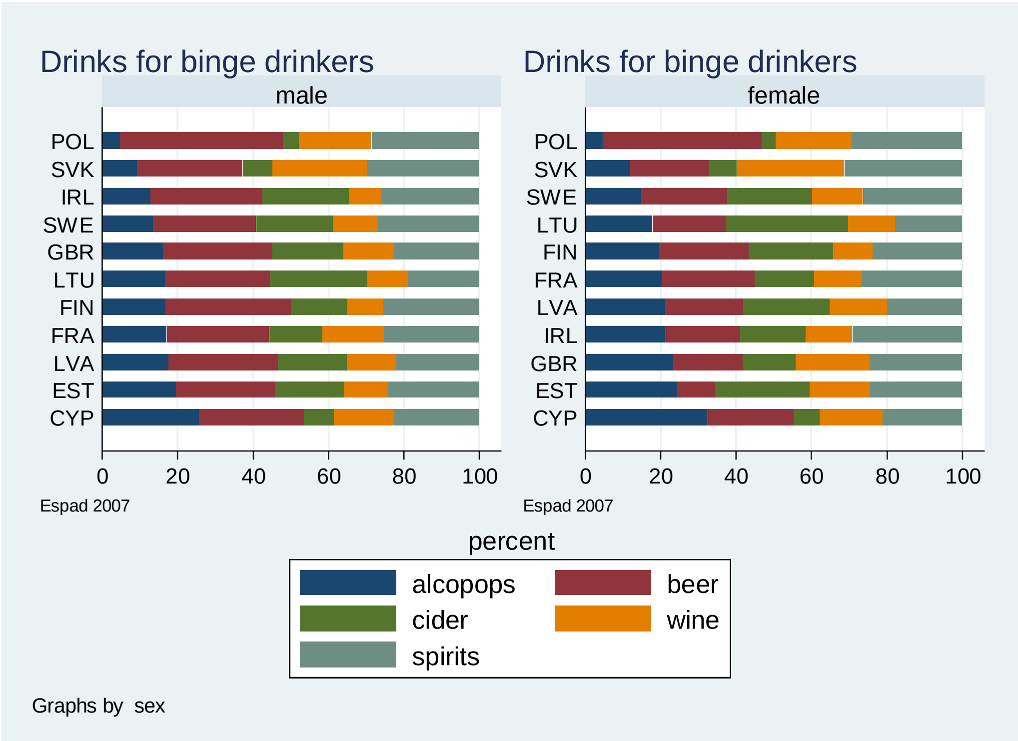


Figure B10: Consumption of alcohol (in percentage) for people who are not binge drinkers (countries in which the question about cider is asked)

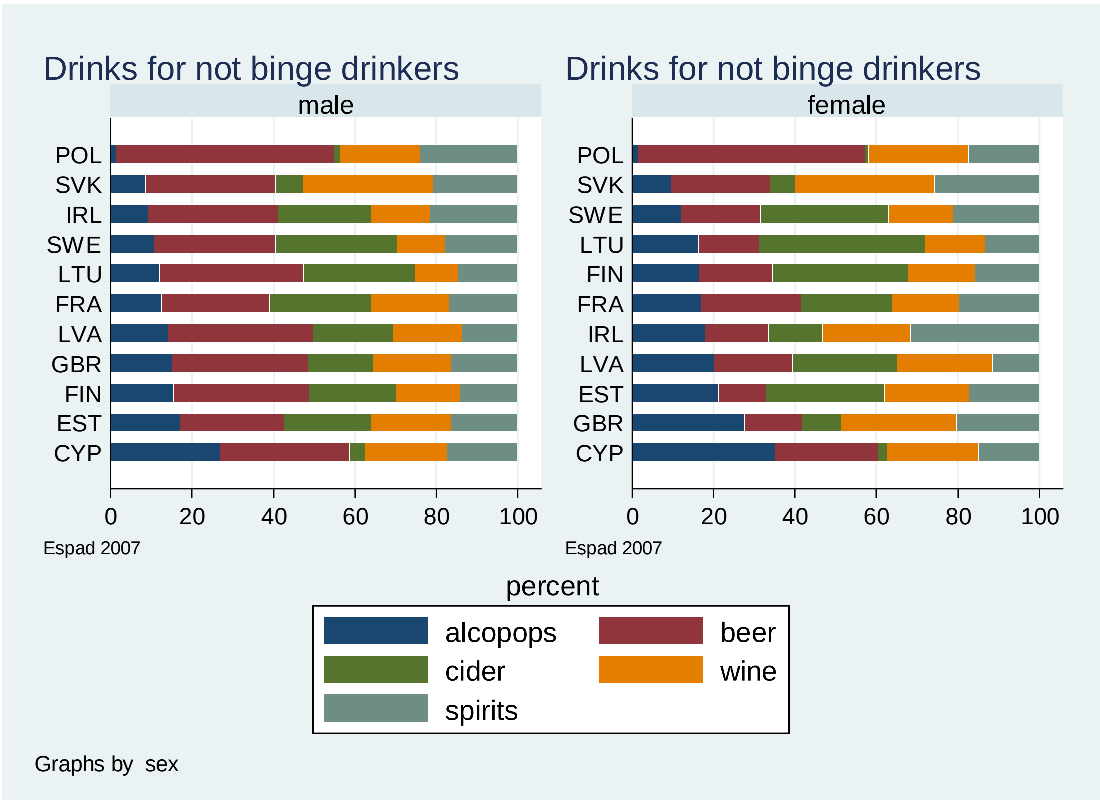


Figure B11: Consumption of alcohol (in percentage) for people who are binge drinkers (countries in which the question about cider is not asked)

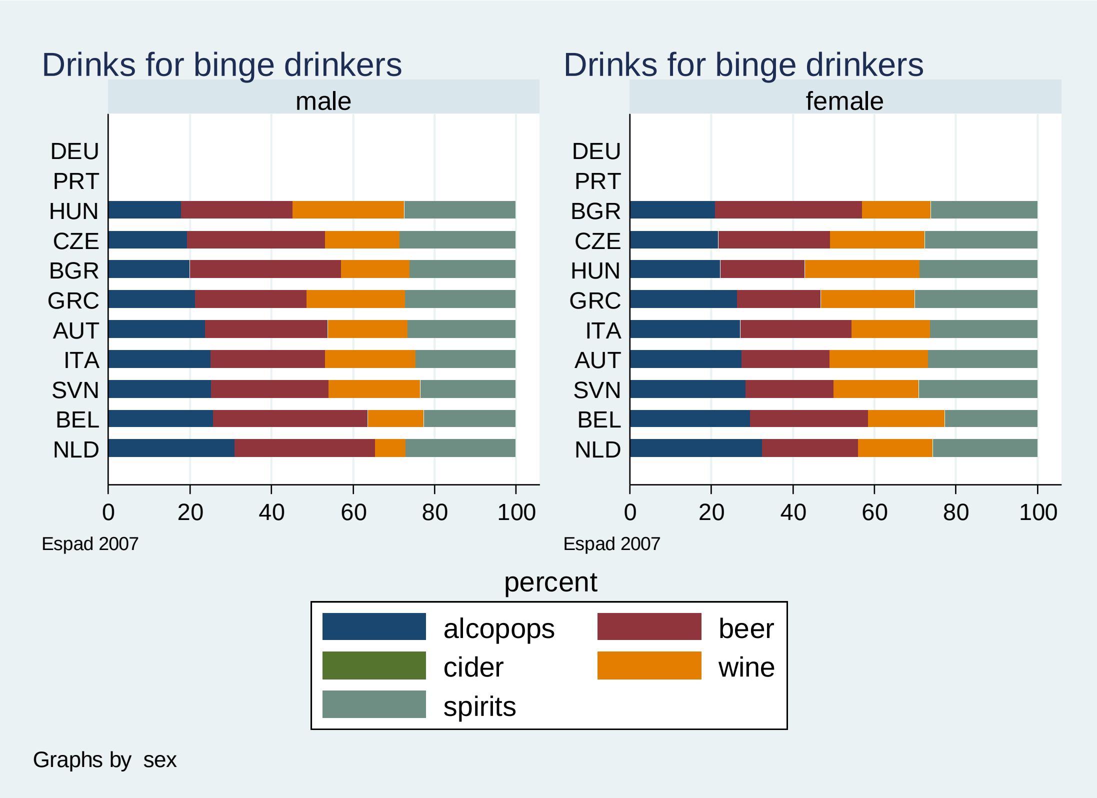
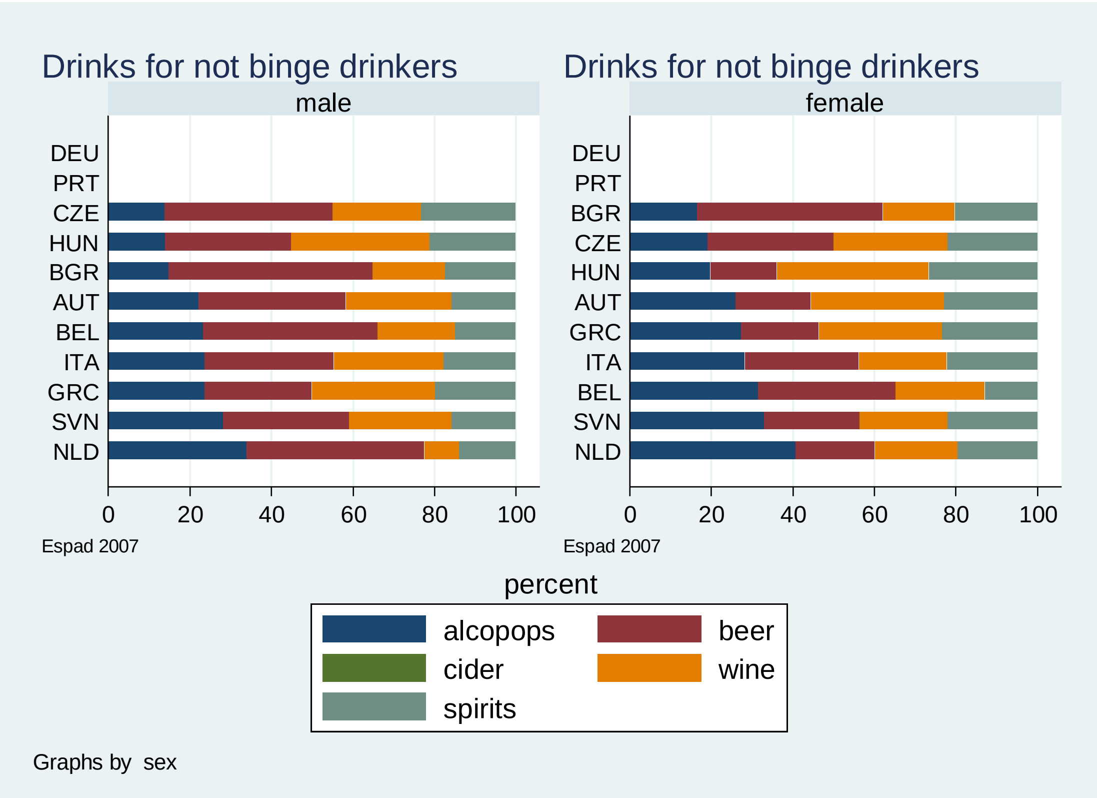


Figure B12: Consumption of alcohol (in percentage) for people who are not binge drinkers (countries in which the question about cider is not asked)



Methodologies of assessing the determinants of alcohol consumption, Tables and Figures

Methodology to assess the role of family background
We estimate a two-part model which distinguishes between the decision on whether consuming alcohol or not and the decision on how much and what kind of drinks to consume. This organization reflects the distinction between participation in consumption and intensity of consumption, as it is often made in the literature.

There are several empirical problems to overcome in order to identify the effects we are interested in. Surprisingly, we have found that thus far these problems have only been marginally considered (Fogarty 2010). One notable exception is Apouey and Clark (2010).

The first question to be addressed is self-sorting. Both students and their families may self-sort into neighbourhoods and schools, according to their income and wealth, and in so doing they create a correlation between environmental and socio-economic conditions of the neighbourhood on and family background. In this context, the failure to properly control for the former could bias the estimated effect of the latter. To illustrate, suppose that higher alcohol consumption is mainly due to the lack of opportunities for socialization and entertainment and that these opportunities are especially scarce in the peripheral suburbs, where poor households, with less educated parents, are over-represented. Conversely, cinemas, theatres and other entertainment facilities abound in the city centre and in the elite neighbourhoods, where more affluent residents are over-represented. Such non-random geographical distribution of households will mechanically produce a negative correlation between family background and children’s alcohol consumption, regardless of the existence of a causal effect of family background on drinking.

The second concern to address, relatively less serious, is that the effect of family background may be heterogeneous and may vary across countries, as culture in general and more specifically the culture of drinking differs. We then need to specify models flexible enough to account for such heterogeneity.

A further problem specific to the dataset we use is that ESPAD lacks information on prices. Neither is it possible to impute prices from external sources as we do not have the geographical location of the schools.

We address both the absence of prices and the problem of self-sorting by including in our analysis school fixed effects. The motivation is that, typically, most students of a given school buy their drinks from the same outlets or the same bars, located relatively close to the school. This means that the students of a given school face the same average prices and thus that prices vary at the level of schools. Furthermore, school fixed effects capture all environmental conditions that are common across students of the same school, such as the relative affluence of the neighbourhood in which the school is located and the supply of entertainment facilities.

The heterogeneous influences of family background across countries is accounted for by allowing estimates to vary across four macro-regions, namely northern Europe, Mediterranean Countries, central Europe and eastern Europe, which should form groups of countries broadly internally comparable in terms of culture and traditions[1].

[1] Northern countries are Finland, UK, Ireland and Sweden. Central European countries are Austria, Belgium, Germany, Netherlands, Slovak Republic, Czech Republic, Slovenia and Hungary. Eastern countries are Bulgaria, Estonia, Latvia, Lithuania and Poland. Mediterranean countries are Cyprus, France, Greece, Italy and Portugal.

Methodology to examine determinants of drinking participation
As regards drinking participation (i.e. having drunk at least once in the past 30 days), we ran a linear probability model (with school fixed effects), separately for male and female students, where the independent variable assumes the value of one if the young person has drunk any alcohol and zero otherwise. The estimated equation has the following form:

$$Y_{ij} = \alpha_0 + \alpha_1 FB_{ij} + \alpha_2 FB_{ij} * M + \mu_j + \varepsilon_{ij} \qquad (1)$$

where Y_{ij} represents the decision of student *i* attending school *j* of consuming alcohol and FB_{ij} stands for family background. The indicator variable *M* is for Mediterranean countries which are those which proved to behave significantly different in most of the models we ran. Finally μ_j is the school fixed effect and ε_{ij} is the error term. The inclusion of school effects is enough to capture both observable and unobservable environmental characteristics varying at the school level. We have preferred to leave out additional students' controls such as school performance or psychological traits because these could be endogenous to alcohol consumption. Therefore we eventually opted for a very parsimonious specification.

Methodology to assess determinants of drinking Intensity
Turning to the intensity of consumption, we have jointly estimated the demand of different alcoholic beverages, namely beer, wine, spirits and alcopops. A joint estimation is warranted in our analysis because it accounts for the fact that the individual decision of consumption comprises all types of beverages simultaneously. A further advantage of this approach is that estimates related to the demand of alcopops can be statistically compared to those related to the demand of wine, beer and spirits.
Formally, we have jointly estimated a four-equation linear model defined as

$$Y_{ijk} = \alpha_{0k} + \alpha_{1k} FB_{ij} + \alpha_{2k} FB_{ij} * M + \mu_j + \varepsilon_{ijk} \quad for\ k = beer, wine, spirits, alcopops \qquad (2)$$

separately for male and female students, where Y_{ijk} represents either the decision of student *i* attending school *j* to consume a certain beverage *k* or the amount of beverage *k* consumed in a given period of time. As before, FB_{ij} is for family background and *M* is for Mediterranean countries. Finally μ_j is the school fixed effect and ε_{ijk} is the error term allowed to be correlated across equations.

Methodology for the assessment of peer effects
Estimating the effect of peers' alcohol consumption on one student's consumption is a major challenge for empirical analysis, because it is difficult to disentangle pure endogenous effects (those due to peers' behaviour) from exogenous (those due to peers' exogenous characteristics) and correlated effects (those due to common environment characteristics). See Manski (1993) for an illuminating discussion on this point. Furthermore peers are not exogenously allocated to each student: rather each student selects his peers, partly on the basis of their alcohol consumption. Our dataset has an advantage compared to other surveys and one disadvantage which requires we adopt a particular estimation strategy. The advantage is that students are explicitly asked to report whether their friends drink or not. Thus, students reveal what is the set of peers relevant to them or what is their reference group. Thus there is no need of assuming that the students' peer are (only) the schoolmate, as it is often the case in the studies on peers effect. Even more importantly, as student *i*'s friends do not coincide with student *j*'s friends, the reference groups of student *i* and *j* do not coincide and typically overlap only partially, even if both *i* and *j* attend the same school. This fact

alone allows for the identification of the endogenous peer effects (see De Giorgi et al. 2010), provided that the problem of self-selection of the peers is accounted for.

Our empirical specification is

$$Y_{ijk} = \beta_{0gk} + \beta_{1gk}P_{ij} + \beta_{2k}X_{ij} + \mu_j + \varepsilon_{ijk} \qquad \text{for } k = beer, wine, spirits, alcopops \quad g = males, females \tag{3}$$

where Y_{ijk} is the outcome variable, P_{ij} is peers' consumption, X_{ij} are students' exogenous characteristics and, as usual, μ_j are school fixed effects. Indices have the usual interpretation. We will consider several outcomes such as whether student *i* in school *j* has drunk any alcoholic drink in the past 30 days, whether the k-th beverage has been consumed during the last 30 days, how many times the k-th beverage has been consumed in the same time-span. We also investigate whether episodes of drunkenness are associated with peers' drunkenness. Among the X_{ij} vector we include family background characteristics, the quality of the relation of the students with their parents and the kind of rules that parents impose to their children.

As mentioned, ESPAD data have a disadvantage which leads us to estimate a transformed version of equation (3). Specifically, students do not report the proportion of friends that drink, or how much their friends drink, but rather whether none, few, some, most or all friends drink. This kind of measure is difficult to handle in an econometric analysis and results would be difficult to interpret. We have then proceeded in the following manner. First we have defined a dummy variable which takes 1 if most or all friends drink and 0 otherwise. Then we have aggregated data at the school by gender level. Aggregation has the property of transforming both categorical variables Y_{ijk} and P_{ij} in continuous variables. Model (3) turns out

$$\overline{Y}_{gjk} = \beta_{0gk} + \beta_{1gk}\overline{P}_{gj} + \beta_{2gk}\overline{X}_{gj} + \mu_j + \overline{\varepsilon}_{gjk} \qquad \text{for } k = beer, wine, spirits, alcopops \quad g = males, females \tag{4}$$

where upper-bars indicate school-by-gender averages. By taking between gender differences (females minus males) within each school we remove school characteristics and all other characteristics constant between genders in a given school, such as environmental conditions, supply of alcohol, prices etc. Eventually, we shall estimate

$$\Delta\overline{Y}_{jk} = \theta_{0k} + \beta_{1mk}\Delta\overline{P}_j + \left(\beta_{1fk} - \beta_{1mk}\right)\overline{P}_{mj} + \theta_{2k}\Delta\overline{X}_j + \Delta\overline{\varepsilon}_{jk} \qquad \text{for } k = beer, wine, spirits, alcopops$$

(5)

where the Δ operator indicates the between gender difference at the school level. Note that gender-specific peer effects can be identified and in particular the peer effect for female students is given by the sum of the coefficients attracted by $\Delta\overline{P}_j$ and $\overline{P}_{mj}$.

Following De Giorgi et al. (2010), besides OLS estimates of model (5) we have also adopted a 2SLS procedure. This is because OLS could be biased for two reasons. First, OLS could be biased because of the omission of environmental factors which induce correlated (environmental) effects that simultaneously affect all students of a given schools and their set of peers. Although we control for the component of this effect that is common across genders, we cannot exclude that such correlated effects work at a much finer level. Second and more importantly, a bias can emerge because peers are not exogenously assigned to students but rather students choose their peers. Possibly students select their peers also on the basis of their drinking behaviour. If drinkers select other drinkers as peers, a spurious relation between students' and peers' drinking will emerge. To overcome this problem we build up two instruments by using information regarding a subset of peers, i.e. student's school mates. The reason is that, conditional to the school attended, students do not choose their school mates. Specifically we look at the proportion of schoolmates who have older siblings and at the proportion of older siblings who drink. The implicit exclusion restriction is that the older siblings of the schoolmates of a given student are not part of his/her reference group so that they do not directly influence his/her behaviour. Instead the older siblings influence the behaviour of their younger siblings and in turn the overall behaviour of one student's peers. In other words the older siblings of the student *i*'s schoolmates influence student *i* only throughout their influence on student *i*'s schoolmates. The exclusion restriction is always debatable in this kind of analysis. Our justification for the exclusion restriction that we have imposed here is that at the age 16 reference groups are relatively segmented by age and hardly older teenagers hang around with younger boys and girls.

Detailed results tables

Table B8: Determinants of participation into alcohol consumption

	(1) Males	(2) Females
Both parents have more than secondary education	-0.010	-0.005
	(0.009)	(0.009)
Both parents have more than secondary education * Mediterranean Countries	0.037**	-0.001
	(0.016)	(0.015)
Household more affluent than average	0.031***	0.016**
	(0.008)	(0.008)
Household more affluent than average * Mediterranean Countries	-0.030**	-0.008
	(0.013)	(0.012)
Both parents reside with the student	-0.064***	-0.051***
	(0.008)	(0.008)
Both parents reside with the student * Mediterranean Countries	-0.001	0.033**
	(0.014)	(0.014)
Observations	32,398	30,998

Note: Estimates by gender. Linear probability model with school fixed effects.
Dependent variable:
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Additional controls are indicator variables for missing values.

Table B9: Determinants of consumption of different alcoholic beverages

	Males				Females			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	beer	wine	spirits	alcopops	beer	wine	spirits	alcopops
edparents	-0.003	0.021**	-0.005	-0.019**	-0.009	0.011	-0.004	0.001
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
edp_medit	0.002	-0.009	0.012	0.019	0.025*	0.022	-0.003	0.008
	(0.015)	(0.014)	(0.015)	(0.014)	(0.015)	(0.014)	(0.015)	(0.015)
betteroff	0.016**	0.020***	0.037***	0.035***	0.020***	0.024***	0.037***	0.032***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
beo_medit	-0.002	-0.013	-0.010	0.009	-0.006	-0.001	-0.002	0.001
	(0.012)	(0.011)	(0.012)	(0.011)	(0.012)	(0.011)	(0.012)	(0.012)
parentshome	0.044***	0.027***	0.064***	-0.039***	0.036***	0.026***	0.060***	-0.044***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.007)	(0.007)	(0.007)	(0.007)
pho_medit	0.012	0.004	0.026*	0.017	-0.003	0.004	-0.014	-0.032**
	(0.013)	(0.013)	(0.014)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Observations	25,081	25,081	25,081	25,081	26,119	26,119	26,119	26,119

Note: Joint school fixed effect estimates by gender. Dependent variables are dummies which take 1 if the corresponding beverage has been consumed in the past 30 days. edparents = both parents have more than secondary education; edp_medit = edparents * Mediterranean countries; betteroff = student report his household is economically more affluent than average; beo_medit = betteroff * Mediterranean countries; parentshome = both parents reside in the same home with the student; pho_medit = parentshome * Mediterranean countries;
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Additional controls are indicator variables for missing values.

Table B10: Determinants of age first drink, by alcoholic beverage

	Males				Females			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	beer	wine	spirits	alcopops	beer	wine	spirits	alcopops
edparents	0.099**	0.020	0.059	0.092**	0.109**	-0.007	0.042	0.112***
	(0.049)	(0.052)	(0.042)	(0.045)	(0.047)	(0.045)	(0.035)	(0.038)
edp_medit	-0.002	0.010	-0.061	-0.084	0.208***	0.204***	-0.041	-0.207***
	(0.079)	(0.082)	(0.067)	(0.072)	(0.079)	(0.075)	(0.058)	(0.063)
betteroff	0.017	0.005	-0.044	-0.132***	-0.050	-0.006	-0.040	-0.084***
	(0.039)	(0.041)	(0.033)	(0.035)	(0.038)	(0.036)	(0.028)	(0.031)
beo_medit	0.033	-0.008	0.077	0.070	0.112*	0.047	0.019	0.059
	(0.063)	(0.066)	(0.053)	(0.058)	(0.063)	(0.059)	(0.046)	(0.050)
parentshome	0.359***	0.357***	0.350***	0.436***	0.383***	0.301***	0.292***	0.324***
	(0.042)	(0.044)	(0.036)	(0.039)	(0.039)	(0.037)	(0.029)	(0.032)
pho_medit	-0.106	-0.119	0.005	-0.156**	-0.073	-0.062	-0.058	0.061
	(0.072)	(0.075)	(0.061)	(0.066)	(0.071)	(0.067)	(0.052)	(0.057)
Observations	30,285	30,285	30,285	30,285	31,871	31,871	31,871	31,871

Note: Joint school fixed effect estimates by gender. Dependent variables are the ages at which each beverage has been consumed for the first time; edparents = both parents have more than secondary education; edp_medit = edparents * Mediterranean countries; betteroff = student report his household is economically more affluent than average; beo_medit = betteroff * Mediterranean countries; parentshome = both parents reside in the same home with the student; pho_medit = parentshome * Mediterranean countries;
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Additional controls are indicator variables for missing values.

Table B11: Determinants of the frequency alcohol consumption during the last 30 days

	Males				Females			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	beer	wine	spirits	alcopops	beer	wine	spirits	alcopops
edparents	0.112	0.270**	0.090	0.172	-0.129	0.153	-0.151	-0.122
	(0.205)	(0.137)	(0.162)	(0.150)	(0.118)	(0.097)	(0.115)	(0.112)
edp_medit	-0.106	-0.071	0.174	0.061	0.348*	-0.075	0.030	0.324*
	(0.330)	(0.220)	(0.260)	(0.241)	(0.197)	(0.162)	(0.192)	(0.188)
betteroff	0.313*	0.298***	0.550***	0.611***	0.040	0.244***	0.572***	0.482***
	(0.161)	(0.107)	(0.127)	(0.118)	(0.095)	(0.078)	(0.093)	(0.091)
beo_medit	0.376	-0.056	-0.020	0.260	0.271*	0.024	-0.130	-0.018
	(0.263)	(0.175)	(0.207)	(0.192)	(0.156)	(0.128)	(0.152)	(0.149)
parentshome	-0.860***	-0.556***	-0.777***	-0.492***	-0.353***	-0.128	-0.432***	-0.308***
	(0.176)	(0.117)	(0.139)	(0.129)	(0.098)	(0.080)	(0.095)	(0.093)
pho_medit	0.123	-0.048	-0.469**	-0.459**	-0.168	-0.168	-0.442**	-0.444***
	(0.301)	(0.200)	(0.237)	(0.220)	(0.176)	(0.145)	(0.172)	(0.168)
Observations	30,742	30,742	30,742	30,742	32,219	32,219	32,219	32,219

Note: Joint School fixed effect estimates by gender. The dependent variable is the frequency of consumption by type of drink. Its is coded as follows: never=0, once-twice=1, 3-5 times=4, 6-9 times=7.5, 10-19 times=19.5, 20-39 times=29.5, more than 40 times=60. edparents = both parents have more than secondary education; edp_medit = edparents * Mediterranean countries; betteroff = student report his household is economically more affluent than average; beo_medit = betteroff * Mediterranean countries; parentshome = both parents reside in the same home with the student; pho_medit = parentshome * Mediterranean countries. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Additional controls are indicator variables for missing values.

Table B12: Determinants of the grams of pure alcohol consumed during the last drink occasion

VARIABLES	(1) Males	(2) Females
Both parents have more than secondary education	-0.050	-2.627***
	(1.199)	(0.815)
Both parents have more than secondary education * Mediterranean Countries	-0.187	1.160
	(1.971)	(1.400)
Household more affluent than average	6.242***	3.576***
	(0.943)	(0.659)
Household more affluent than average * Mediterranean Countries	-1.265	-0.828
	(1.554)	(1.100)
Both parents reside with the student	-10.522***	-7.048***
	(1.032)	(0.676)
Both parents reside with the student * Mediterranean Countries	2.030	-0.403
	(1.788)	(1.248)
Observations	29,599	30,922

Note: School fixed effect estimates by gender. Pure alcohol in grams is derived from the amount of each drink declared to be consumed in the last occasion multiplied by the corresponding alcohol content, using the following percentages: 5% for beer, 4.5% for alcopops, 12% for wine and 38% for spirits.

Table B13 (i): Determinants of consuming alcohol off-premises during the last 30 days, by alcoholic beverage

	Males				Females			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	beer	wine	spirits	alcopops	beer	wine	spirits	alcopops
edparents	0.161	0.142**	-0.022	0.069	0.030	0.036	-0.018	-0.010
	(0.099)	(0.061)	(0.079)	(0.067)	(0.053)	(0.039)	(0.052)	(0.049)
edp_medit	-0.169	-0.133	0.182	-0.103	-0.096	-0.033	-0.101	-0.026
	(0.157)	(0.097)	(0.125)	(0.108)	(0.088)	(0.064)	(0.086)	(0.081)
betteroff	0.297***	0.206***	0.385***	0.366***	0.023	0.107***	0.139***	0.134***
	(0.078)	(0.048)	(0.062)	(0.053)	(0.044)	(0.032)	(0.042)	(0.040)
beo_medit	-0.008	0.117	0.061	0.028	0.091	-0.029	0.147**	0.120*
	(0.126)	(0.078)	(0.100)	(0.086)	(0.070)	(0.051)	(0.068)	(0.065)
parentshome	0.431***	0.238***	0.319***	0.152***	0.257***	0.144***	0.280***	0.240***
	(0.085)	(0.052)	(0.067)	(0.058)	(0.044)	(0.032)	(0.043)	(0.041)
pho_medit	-0.234	-0.190**	0.390***	0.346***	-0.041	-0.024	-0.171**	-0.083
	(0.144)	(0.089)	(0.115)	(0.098)	(0.079)	(0.057)	(0.077)	(0.073)
Observations	29,664	29,664	29,664	29,664	31,268	31,268	31,268	31,268

Note: Joint School fixed effect estimates by gender. The dependent variable is the frequency of alcohol bought by type of drink. It is coded as follows: never=0, once-twice=1, 3-5 times=4, 6-9 times=7.5, 10-19 times=19.5, 20-39 times=29.5, more than 40 times=60. edparents = both parents have more than secondary education; edp_medit = edparents * Mediterranean countries; betteroff = student report his household is economically more affluent than average; beo_medit = betteroff * Mediterranean countries; parentshome = both parents reside in the same home with the student; pho_medit = parentshome * Mediterranean countries. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Additional controls are indicator variables for missing values.

Table B13 (ii): Determinants of consuming alcohol "on premise" during the last 30 days, by alcoholic beverage

	Males				Females			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	beer	wine	spirits	alcopops	beer	wine	spirits	alcopops
edparents	0.034	0.077	-0.012	0.023	0.017	-0.024	-0.050	-0.021
	(0.105)	(0.066)	(0.093)	(0.074)	(0.063)	(0.048)	(0.071)	(0.061)
edp_medit	-0.164	-0.062	0.232	-0.159	-0.092	-0.062	-0.097	-0.041
	(0.168)	(0.106)	(0.149)	(0.119)	(0.105)	(0.079)	(0.117)	(0.102)
betteroff	0.358***	0.195***	0.406***	0.343***	0.110**	0.191***	0.323***	0.286***
	(0.083)	(0.052)	(0.073)	(0.059)	(0.052)	(0.039)	(0.057)	(0.050)
beo_medit	0.150	0.335***	0.091	0.214**	0.045	-0.021	0.008	0.021
	(0.134)	(0.084)	(0.119)	(0.095)	(0.084)	(0.063)	(0.093)	(0.081)
parentshome	0.385***	0.274***	0.304***	-0.144**	0.260***	-0.092**	0.322***	0.219***
	(0.090)	(0.057)	(0.080)	(0.064)	(0.053)	(0.040)	(0.058)	(0.051)
pho_medit	-0.212	0.379***	0.582***	0.388***	-0.153	-0.142**	0.356***	0.274***
	(0.153)	(0.096)	(0.136)	(0.108)	(0.094)	(0.071)	(0.105)	(0.091)
Observations	29,733	29,733	29,733	29,733	31,274	31,274	31,274	31,274

Note: Joint School Ffxed effect estimates by gender. The dependent variable is the frequency of alcohol consumed on premise by type of drink. It is coded as follows: never=0, once-twice=1, 3-5 times=4, 6-9 times=7.5, 10-19 times=19.5, 20-39 times=29.5, more than 40 times=60. edparents = both parents have more than secondary education; edp_medit = edparents * Mediterranean countries; betteroff = student report his household is economically more affluent than average; beo_medit = betteroff * Mediterranean countries; parentshome = both parents reside in the same home with the student; pho_medit = parentshome * Mediterranean countries. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Additional controls are indicator variables for missing values.

Figure B13: Quantity of alcohol in (grams) drunk the last time they drank for young people who consider their household to be better off than others (very much better off, much better off, better off) (Countries sorted by quantity of alcopops)

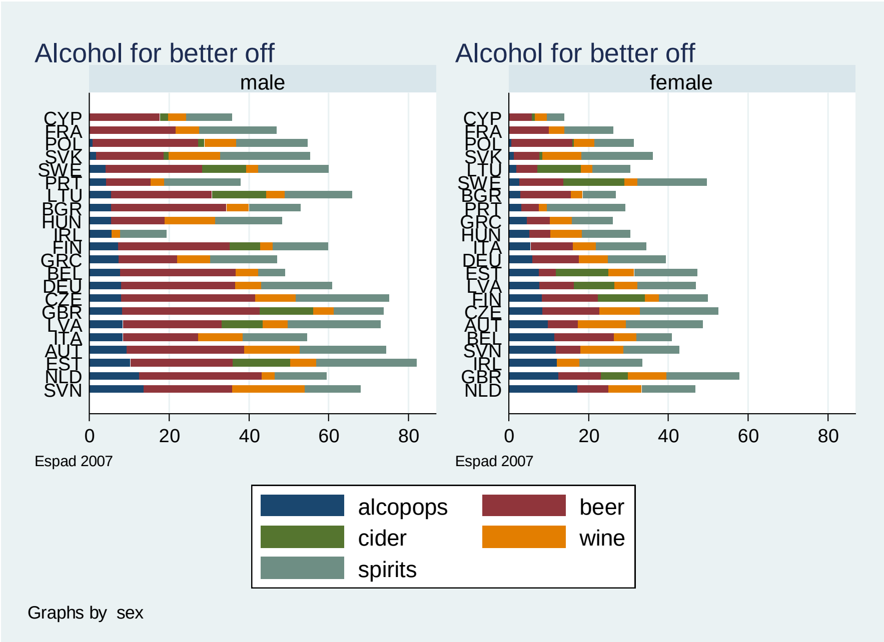


Figure B14: Quantity of alcohol in (grams) drunk the last time they drank for young people who consider their household to be about the same as the others (Countries sorted by quantity of alcopops)

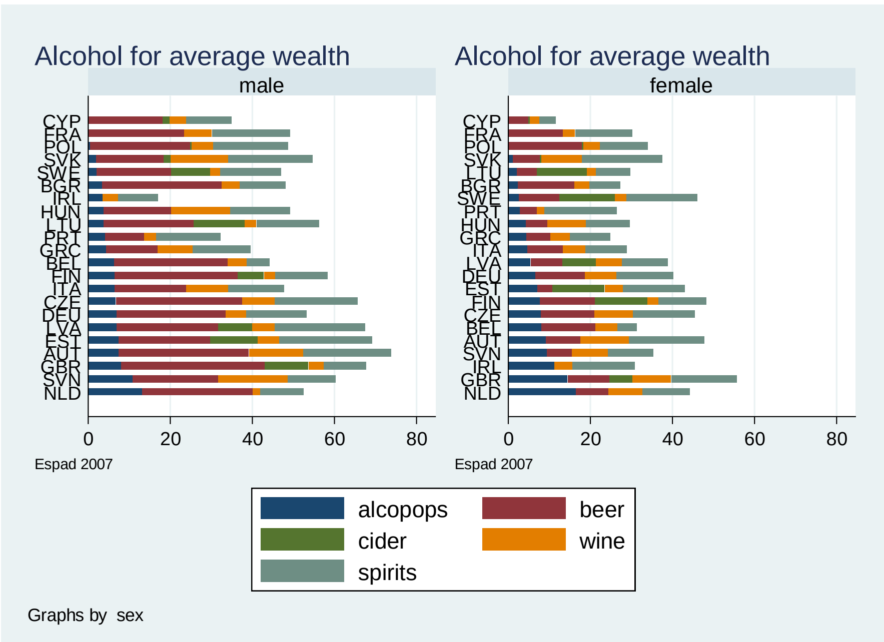


Figure B15: Quantity of alcohol in (grams) drunk the last time they drank for young people who consider their household to be about worse off the others (very much worse off, much worse off, worse off) (Countries sorted by quantity of alcopops)

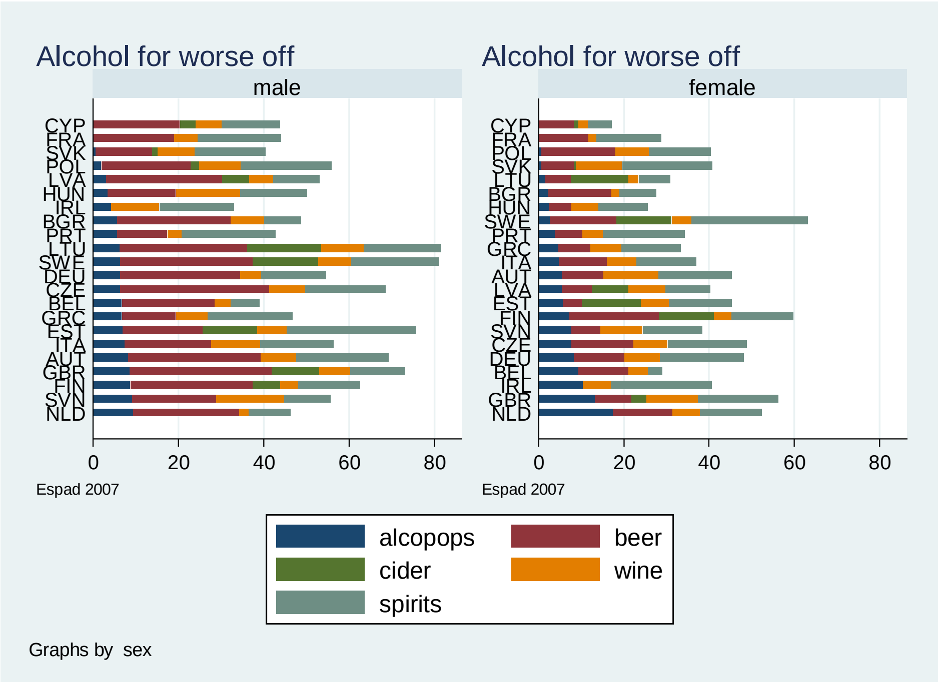


Figure B16: Grams of alcohol consumed during last time alcohol consumed by family income, Mediterranean countries. Boys left, Girls right

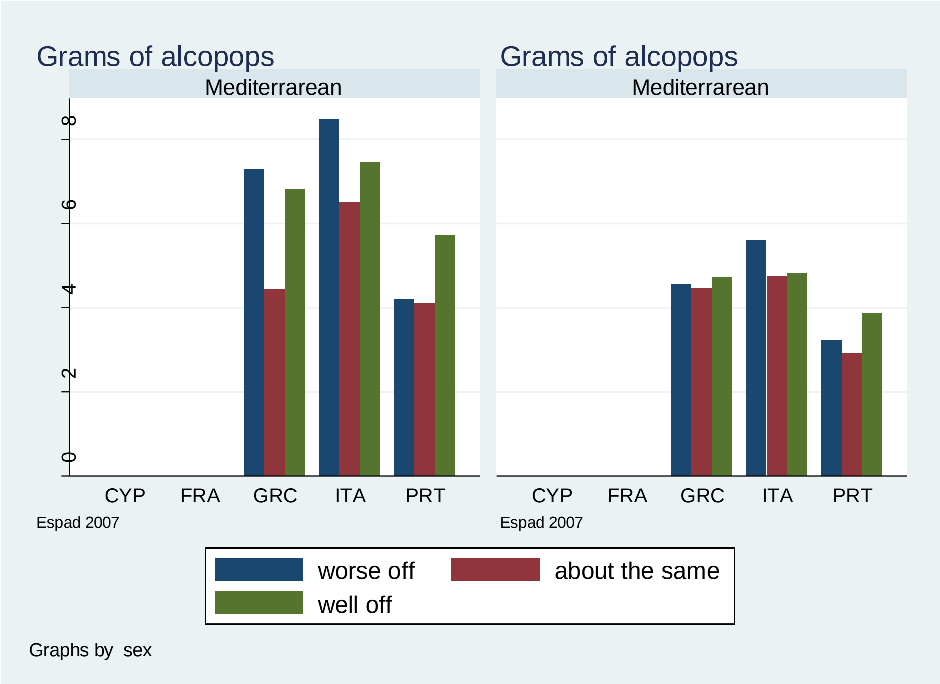


Figure B17: Grams of alcohol consumed during last time alcohol consumed by family income, eastern European countries. Boys left, Girls right

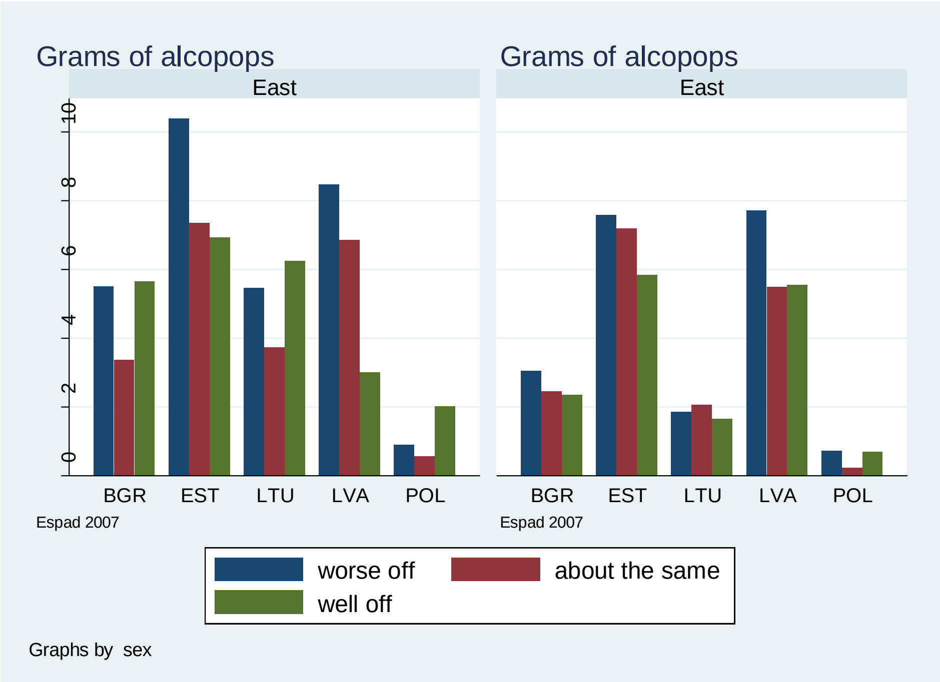


Figure B18: Grams of alcohol consumed during last time alcohol consumed by family income, central European countries. Boys left, Girls right

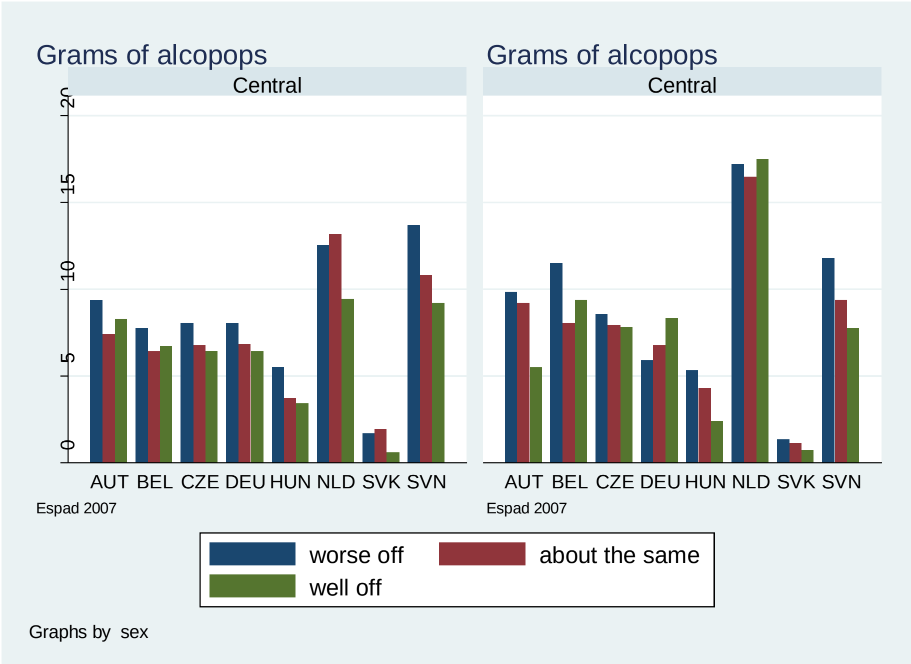


Figure B19: Grams of alcohol consumed during last time alcohol consumed by family income, northern European countries. Boys left, Girls right

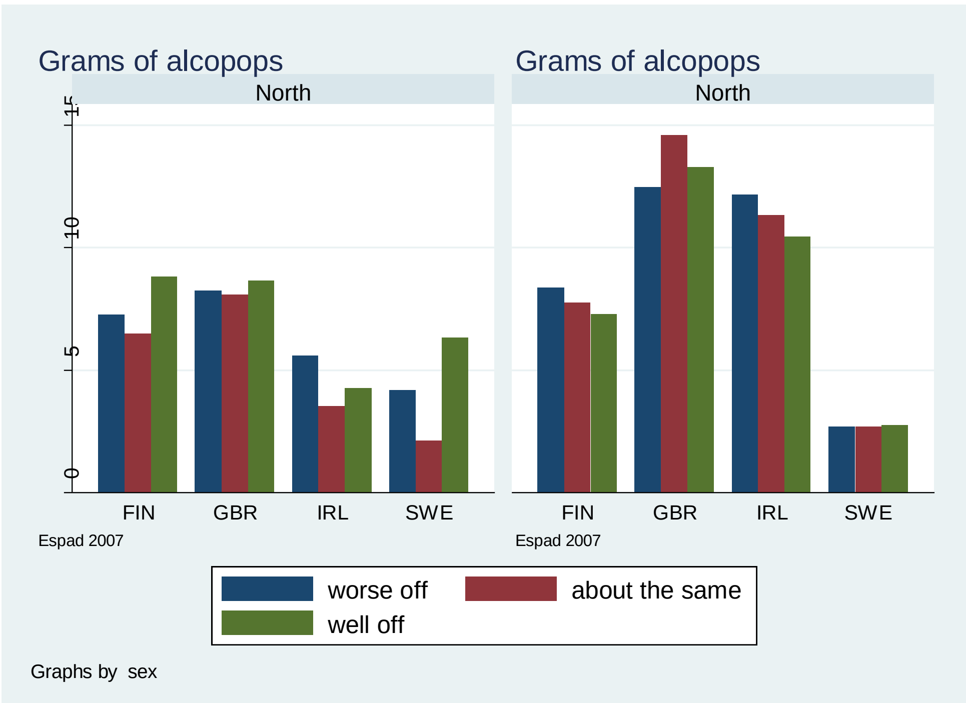


Figure B20: Share of alcohol consumed as alcopops as proportion of all alcohol consumed during last time alcohol consumed by family income, Mediterranean European countries. Boys left, Girls right

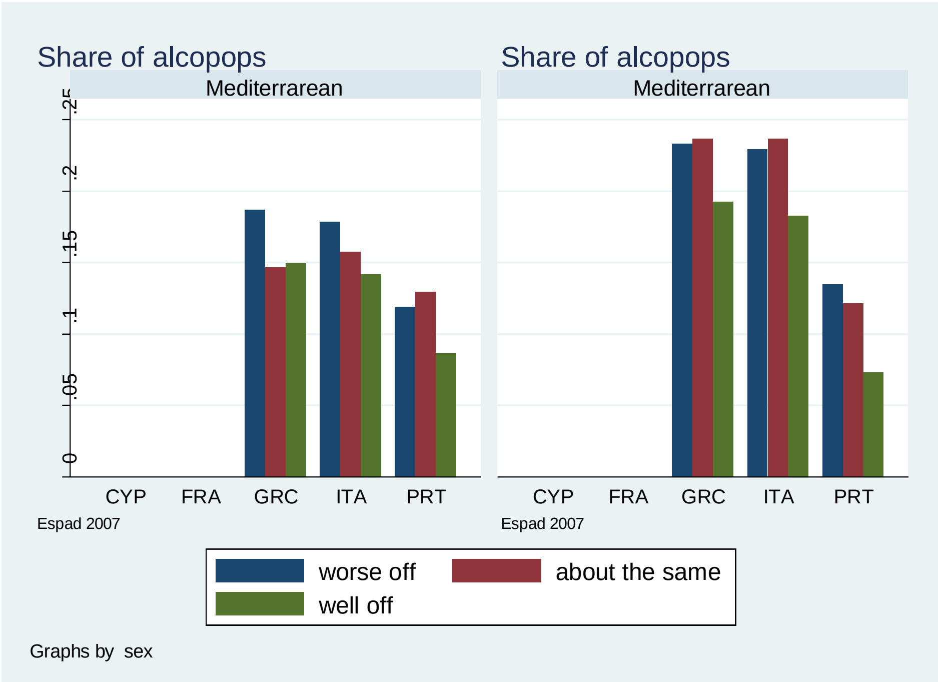


Figure B21: Share of alcohol consumed as alcopops as proportion of all alcohol consumed during last time alcohol consumed by family income, eastern European countries. Boys left, Girls right

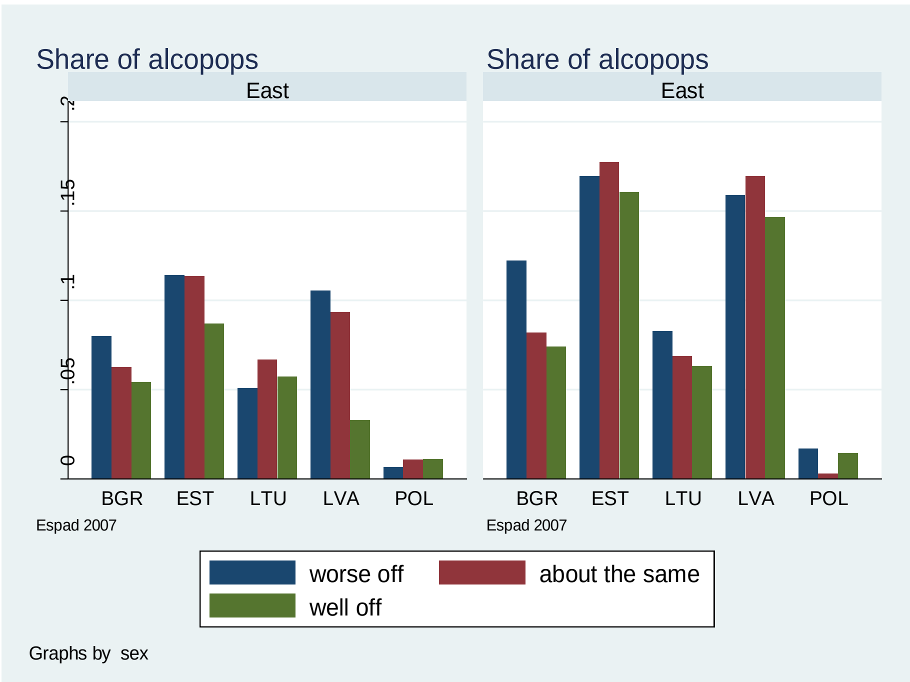


Figure B22: Share of alcohol consumed as alcopops as proportion of all alcohol consumed during last time alcohol consumed by family income, central European countries. Boys left, Girls right

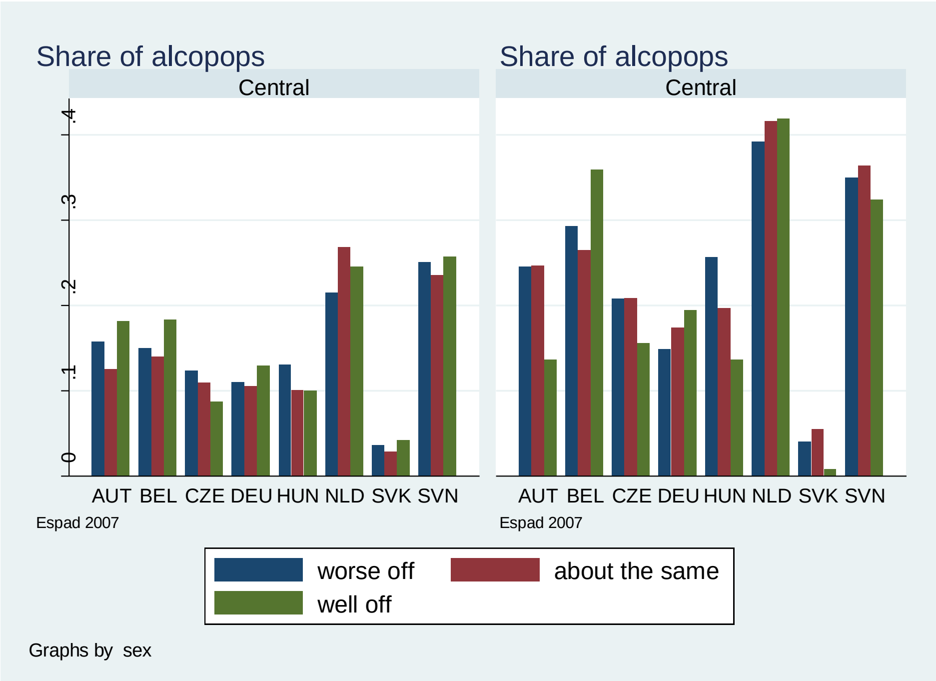


Figure B23: Share of alcohol consumed as alcopops as proportion of all alcohol consumed during last time alcohol consumed by family income, northern European countries. Boys left, Girls right

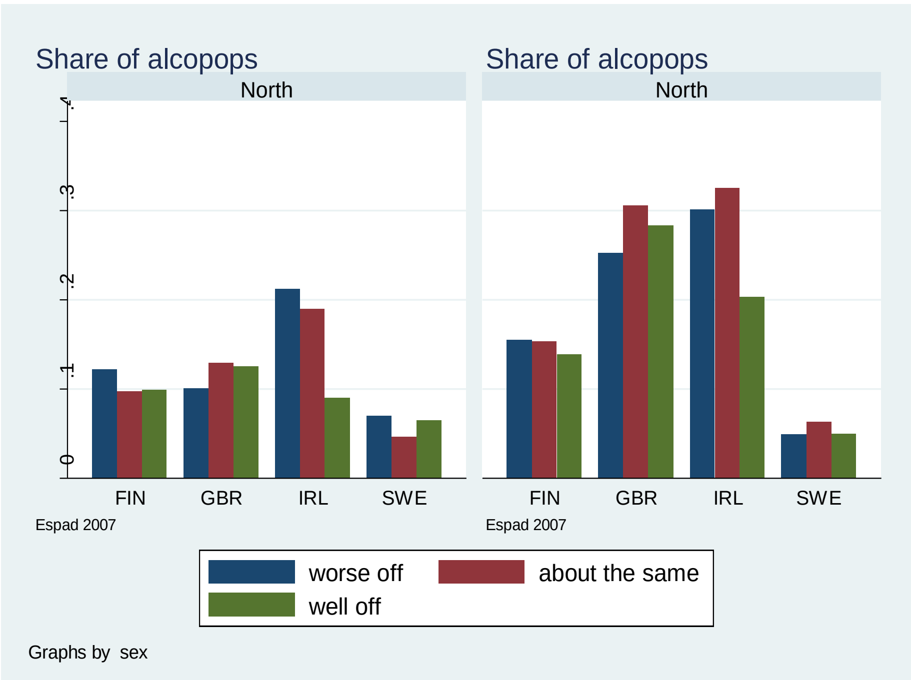


Table B14: Peers' effect on the probability of having drunk any alcohol in the past 30 days

	OLS			2SLS		
	All	Winebelt	Others	All	Winebelt	Others
peers effect on male students	0.319***	0.212***	0.385***	0.844***	0.638***	0.994***
	(0.021)	(0.038)	(0.024)	(0.113)	(0.192)	(0.130)
differential peers effect on female students	0.128***	0.134***	0.024	0.245***	0.147*	-0.00765
	(0.021)	(0.034)	(0.026)	(0.0519)	(0.0810)	(0.0635)
Observations	2,571	868	1,703	2,571	868	1,703

Note: Between gender differences of microdata aggregated by school and gender. Winebelt countries are Bulgaria, Cyprus, France, Greece, Hungary, Italy and Portugal. Others countries are Finland, UK, Ireland, Sweden, Austria, Belgium, Germany, Netherlands, Slovak Republic, Czech Republic, Slovenia, Estonia, Lithuania, Latvia and Poland. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table B15: Peers' effect on the probability of having drunk specific beverages in the past 30 days

		OLS			2SLS		
Beverage		All	Winebelt	Others	All	Winebelt	Other
beer	peers effect on male students	0.300***	0.209***	0.357***	0.688***	0.439**	0.837***
		(0.023)	(0.041)	(0.028)	(0.119)	(0.201)	(0.147)
	differential peers effect on	0.012	0.169***	-0.112***	0.129**	0.200**	0.0113
	female students	(0.023)	(0.038)	(0.031)	(0.0523)	(0.0864)	(0.0741)
wine	peers effect on male students	0.077***	0.187***	0.039	0.246**	0.419**	0.187
		(0.022)	(0.041)	(0.025)	(0.113)	(0.197)	(0.129)
	differential peers effect on	0.207***	-0.050	0.203***	0.477***	0.00726	0.350***
	female students	(0.022)	(0.039)	(0.028)	(0.0498)	(0.0847)	(0.0651)
spirits	peers effect on male students	0.266***	0.264***	0.279***	0.359***	0.240	0.442***
		(0.022)	(0.041)	(0.026)	(0.116)	(0.203)	(0.140)
	differential peers effect on	0.138***	0.106***	0.090***	0.325***	0.167*	0.206***
	female students	(0.022)	(0.039)	(0.029)	(0.0511)	(0.0871)	(0.0703)
alcopops	peers effect on male students	0.143***	0.193***	0.131***	0.452***	0.428**	0.495***
		(0.022)	(0.041)	(0.025)	(0.111)	(0.198)	(0.132)
	differential peers effect on	0.188***	0.085**	0.181***	0.387***	0.218**	0.284***
	female students	(0.022)	(0.039)	(0.028)	(0.0489)	(0.0850)	(0.0666)
	Observations	2,571	868	1,703	2,571	868	1,703

Note: Between gender differences of microdata aggregated by school and gender. Joint estimation across beverages. Winebelt countries are Bulgaria, Cyprus, France, Greece, Hungary, Italy and Portugal. Others countries are Finland, UK, Ireland, Sweden, Austria, Belgium, Germany, Netherlands, Slovak Republic, Czech Republic, Slovenia, Estonia, Lithuania, Latvia and Poland. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table B16: Peers' effect on the frequency of drinking specific beverages in the last 30 days

		OLS			2SLS		
Beverage		All	Winebelt	Others	All	Winebelt	Other
beer	peers effect on male students	5.188***	5.327***	5.351***	11.40***	4.988	15.06***
		(0.434)	(0.871)	(0.492)	(2.228)	(4.223)	(2.584)
	differential peers effect on	-2.817***	-2.304***	-3.970***	-0.485	0.803	-2.789**
	female students	(0.431)	(0.820)	(0.545)	(0.980)	(1.812)	(1.299)
wine	peers effect on male students	0.806***	3.135***	-0.042	1.425	6.445*	-0.745
		(0.307)	(0.699)	(0.291)	(1.536)	(3.354)	(1.487)
	differential peers effect on	1.445***	-1.343**	1.538***	4.767***	-1.035	4.388***
	female students	(0.305)	(0.658)	(0.323)	(0.676)	(1.439)	(0.748)
spirits	peers effect on male students	2.195***	3.856***	1.607***	4.419***	5.953*	3.766**
		(0.332)	(0.690)	(0.362)	(1.688)	(3.338)	(1.868)
	differential peers effect on	0.851**	-0.879	0.778*	2.711***	-1.094	2.182**
	female students	(0.330)	(0.650)	(0.401)	(0.743)	(1.432)	(0.939)
alcopops	peers effect on male students	1.262***	2.859***	0.763**	3.040*	3.191	3.433**
		(0.310)	(0.666)	(0.322)	(1.564)	(3.207)	(1.657)
	differential peers effect on	1.877***	0.484	1.230***	4.978***	2.424*	2.778***
	female students	(0.308)	(0.627)	(0.357)	(0.688)	(1.376)	(0.833)
	Observations	2,571	868	1,703	2,571	868	1,703

Note: Between gender differences of microdata aggregated by school and gender. Joint estimation across beverages. The dependent variable is the frequency of consumption by type of drink. It is coded as follows: never=0, once-twice=1, 3-5 times=4, 6-9 times=7.5, 10-19 times=19.5, 20-39 times=29.5, more than 40 times=60. Winebelt countries are Bulgaria, Cyprus, France, Greece, Hungary, Italy and Portugal. Others countries are Finland, UK, Ireland, Sweden, Austria, Belgium, Germany, Netherlands, Slovak Republic, Czech Republic, Slovenia, Estonia, Lithuania, Latvia and Poland. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table B17: Peers' effect on the amount of pure alcohol consumed during the last occasion

	OLS			2SLS		
VARIABLES	All	Winebelt	Others	All	Winebelt	Others
peers effect on male students	35.952***	26.620***	40.827***	46.58***	34.37*	51.93***
	(2.746)	(4.265)	(3.439)	(12.96)	(19.68)	(16.71)
differential peers effect on	-9.307***	-6.268*	-12.943***	14.18**	0.128	22.42***
female students	(2.375)	(3.747)	(3.327)	(5.560)	(8.546)	(8.055)
Observations	2,569	866	1,703	2,569	866	1,703

Note: Between gender differences of microdata aggregated by school and gender. Pure alcohol in grams is derived from the amount of each drink declared to be consumed in the last occasion multiplied by the corresponding alcohol content, using the following percentages: 5% for beer, 4.5% for alcopops, 12% for wine and 38% for spirits. The resulting number is finally multiplied by 0.789 to transform volume in grams. Winebelt countries are Bulgaria, Cyprus, France, Greece, Hungary, Italy and Portugal. Others countries are Finland, UK, Ireland, Sweden, Austria, Belgium, Germany, Netherlands, Slovak Republic, Czech Republic, Slovenia, Estonia, Lithuania, Latvia and Poland. Robust Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table B18: Effect of minimum legal drinking age on the age at which an adolescent had her first drink[2]

	Males				Females			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	beer	wine	spirits	alcopops	beer	wine	spirits	alcopops
min_beer	0.087***			0.105***	0.033**			0.079***
	(0.015)			(0.014)	(0.014)			(0.012)
min_wine		0.122***				0.119***		
		(0.017)				(0.014)		
min_spirits			0.007				0.006	
			(0.012)				(0.010)	
Constant	9.510***	12.500***	1.006	7.951***	7.386***	9.726***	7.800***	3.485***
	(1.515)	(1.687)	(1.187)	(1.472)	(1.707)	(1.545)	(1.011)	(1.301)
Observations	26,218	25,926	25,932	25,937	27,542	27,341	27,329	27,389
R-squared	0.058	0.039	0.028	0.038	0.055	0.041	0.025	0.042

Note: Regressions estimated equation by equation (by gender) with clustered standard errors at the school level estimates by gender. The dependent variable is the age at which young people had their first drink. Min_beer, min_wine and min_spirits are the legal minimum drinking ages for each drink. Country level controls are: log GDP, enrolment in primary education, percentage of isced 3 and 5/6 graduates, winebelt, unemployment below 25, duration of compulsory education. Additional controls are indicator variables for missing values and family background. Additional controls are indicator variables for missing values and family background. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

[2] Due to the low variability of the drinking age across European countries (the variable is at the national level and the legislation on this respect is often similar) the use of school and even country fixed effects was not possible. Instead we estimated the model controlling for a rich set of country level variables taken from different datasets (mainly from the World Bank and Eurostat). In particular we included in the equation:
• A dummy variable indicating whether or not the country mainly consume wine ("winebelt")
• The proportion of residents who attained an ISCED-3 and ISCED-5 degree as a share of the total population, to indirectly control for the average education of students' parents
• Log of per capita GDP
• Unemployment rate for individuals aged under 25 (as it could lead to risky behaviours and deprivation)
• Duration of compulsory education (in years)
The model is estimated equation by equation. The correlation of the error term within school is taken into account by clustering at the school level.

Table B19: Effect of minimum legal drinking age on frequency of drinking

	Males				Females			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	beer	wine	spirits	alcopops	beer	Wine	spirits	alcopops
min_beer	-0.162***			-0.096**	0.042			-0.102***
	(0.056)			(0.041)	(0.030)			(0.028)
min_wine		-0.033				0.005		
		(0.043)				(0.025)		
min_spirits			0.159***				-0.046	
			(0.058)				(0.034)	
Constant	27.063***	-0.580	-0.444	15.096***	20.640***	-2.647	18.708***	18.135***
	(5.806)	(4.091)	(4.392)	(3.656)	(3.424)	(2.949)	(3.229)	(3.122)
Observations	26,294	26,012	26,190	26,142	27,591	27,368	27,530	18.581***
R-squared	0.027	0.026	0.018	0.030	0.023	0.019	0.020	(3.143)

Note: Regressions estimated equation by equation (by gender) with clustered standard errors at the school level estimates by gender. The dependent variable is the frequency young people drunk in the last 30 days. Min_beer, min_wine and min_spirits are the legal minimum drinking ages for each drink. Country level controls are: log GDP, enrolment in primary education, percentage of isced 3 and 5/6 graduates, winebelt, unemployment below 25, duration of compulsory education. Additional controls are indicator variables for missing values and family background. Additional controls are indicator variables for missing values and family background. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table B20: Effect of minimum legal drinking age on the main place where young people drink[3]

	Males							
	beer		wine		spirits		alcopops	
	pub or shop	shop	pub or shop	shop	pub or shop	shop	pub or shop	shop
min_beer	-0.007	0.008					-0.032**	-0.020
	(0.014)	(0.016)					(0.015)	(0.017)
min_wine			-0.003	0.004				
			(0.019)	(0.018)				
min_spirits					0.010	0.068***		
					(0.015)	(0.019)		
Obs.	12,970	12,970	6,406	6,406	9,245	9,245	9,259	9,259

	Females							
	beer		wine		spirits		alcopops	
	pub or shop	shop	pub or shop	shop	pub or shop	shop	pub or shop	shop
min_beer	0.011	0.039**					-0.034**	0.024
	(0.019)	(0.020)					(0.015)	(0.018)
min_wine			-0.013	0.038*				
			(0.019)	(0.021)				
min_spirits					0.013	0.135***		
					(0.017)	(0.020)		
Obs.	8,361	8,361	5,867	5,867	8,460	8,460	9,801	9,801

Note: Regressions estimated equation by equation (by gender) with clustered standard errors at the school level estimates by gender. The dependent variable is the main place where young people drunk in the last 30 days (in a subsample of drinkers). The reference category is main on premise. The other categories are equally on premise or in a shop and mainly in a shop. Min_beer, min_wine and min_spirits are the legal minimum drinking ages for each drink. Country level controls are: log GDP, enrolment in primary education, percentage of isced 3 and 5/6 graduates, winebelt, unemployment below 25, duration of compulsory education . Additional controls are indicator variables for missing values and family background. Additional controls are indicator variables for missing values and family background. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

[3] In this specific exercise we consider a sub-sample of students (people who had either drunk at least once on premise or bought any drink). We ran a multinomial probit regression constructing the dependent variable as follows: it takes 1 if the adolescent drank at the pub/disco as often as he drinks off-premise; 2 if her preferred place of consumption is the pub/disco and 3 if she mainly consumes alcohol bought in a shop. 2 is chosen as reference point thus excluded by the equation.

References

Apouey B and Clark AE (2010). Winning big but feeling no better? The effect of lottery prizes on physical and mental health. *IZA Discussion Paper* 4730.

De Giorgi G, Pellizzari M and Radaelli S (2010). Identification of social interactions through partially overlapping peer groups. *American Economic Journal: Applied Economics* 2: 241-275.

Fogarty J (2010). The demand for beer, wine and spirits: a survey of the literature. *Journal of Economic Surveys* 24: 428-478.

Manski CF (1993). Identification of endogenous social effects: the reflection problem. *The Review of Economic Studies* 60: 531-542.

Annex C
Supplement to Chapter 4

Table C1: Number of students per cluster, Germany

Cluster n.	Males	Females	Observations
high	143	35	178
upper-middle	203	276	479
lower-middle	453	358	811
low	576	861	1,437
total	1,375	1,530	2,905

Table C2: Consumption in grams of pure ethanol in each cluster and for each type of drink, Germany

Cluster n.	Type of drink	Males	Females
high	total	161	180
	beer	95	92
	wine	6	15
	spirits	34	41
	alcopops	25	32
upper-middle	total	92	78
	beer	30	12
	wine	5	8
	spirits	54	52
	alcopops	4	6
lower-middle	total	66	64
	beer	37	26
	wine	10	18
	spirits	7	7
	alcopops	13	14
low	total	11	13
	beer	5	3
	wine	2	4
	spirits	2	2
	alcopops	2	4

Table C3: Number of students per cluster, UK

Cluster n.	Males	Females	Observations
high	188	34	222
upper-middle	83	219	302
lower-middle	349	380	729
low	252	401	653
Total	872	1,034	1,906

Table C4: Consumption in grams of pure ethanol in each cluster and for each type of drink, UK

Cluster n.	Type of drink	Males	Females
high	total	171	243
	beer	98	93
	wine	4	19
	spirits	26	53
	alcopops	16	38
	cider	27	40
upper-middle	total	111	91
	beer	25	9
	wine	6	5
	spirits	52	55
	alcopops	13	15
	cider	15	7
lower-middle	total	63	69
	beer	30	13
	wine	8	19
	spirits	4	6
	alcopops	8	22
	cider	13	9
low	total	7	9
	beer	2	1
	wine	2	3

Table C5: Number of students per cluster, Netherlands

Cluster n.	Males	Females	Total
high	123	23	146
middle with preference for spirits and alcopops	140	423	563
middle with preference for beer	206	87	293
low	343	382	725
total	812	915	1,727

Table C6: Consumption in grams of pure ethanol in each cluster and for each type of drink, Netherlands

Cluster n.	Type of drink	Males	Females
high	total	145	161
	beer	99	99
	wine	5	12
	spirits	24	28
	alcopops	18	23
middle with preference for spirits and alcopops	total	60	67
	beer	6	4
	wine	4	16
	spirits	21	20
	alcopops	30	27
middle with preference for beer	total	65	73
	beer	43	39
	wine	1	2
	spirits	12	15
	alcopops	10	16
low	total	9	10
	beer	5	3
	wine	1	2
	spirits	1	1
	alcopops	2	4

Table C7: Number of students per cluster, Italy

Cluster n.	Males	Females	Total
high	57	14	71
upper-middle with preference for beer	71	16	87
upper-middle with preference for wine	110	50	160
upper-middle with preference for spirits	38	23	61
lower-middle with preference for beer	198	84	282
lower-middle with preference for spirits	189	164	353
low	692	808	1,500
total	1,355	1,159	2,514

Table C8: Consumption in grams of pure ethanol in each cluster and for each type of drink, Italy

Cluster n.	Type of drink	Males	Females
high	total	241	261
	beer	76	75
	wine	62	60
	spirits	72	83
	alcopops	30	36
upper-middle with preference for beer	total	118	115
	beer	80	74
	wine	11	11
	spirits	13	9
	alcopops	13	21
upper-middle with preference for wine	total	92	77
	beer	20	13
	wine	44	46
	spirits	12	9
	alcopops	18	9
upper-middle with preference for spirits	total	139	115
	beer	14	7
	wine	8	3
	spirits	99	99
	alcopops	18	7
lower-middle with preference for beer	total	40	41
	beer	30	30
	wine	3	2
	spirits	3	4
	alcopops	5	5
lower- middle with preference for spirits	total	79	67
	beer	19	12
	wine	9	7
	spirits	42	41
	alcopops	10	9
low	total	11	11
	beer	4	3
	wine	3	2
	spirits	2	3
	alcopops	3	3

RTD/HS data for Germany, the Netherlands and Italy

The RTD/HS market in Germany

The German market for RTDs and high-strength (HS) pre-mixes has been dominated by malt-based RTDs, with no clear leader but rather a small set of leading brands, including Oettinger, Veltins, Beck's and Schöfferhofer (Figure A9). A considerable share of the market (35%) is accounted for by smaller brands taken together. Krombacher and Veltins have realized the biggest gains over the observation period (Figure A10).

Figure C1: Market shares by brands in Germany, 2010

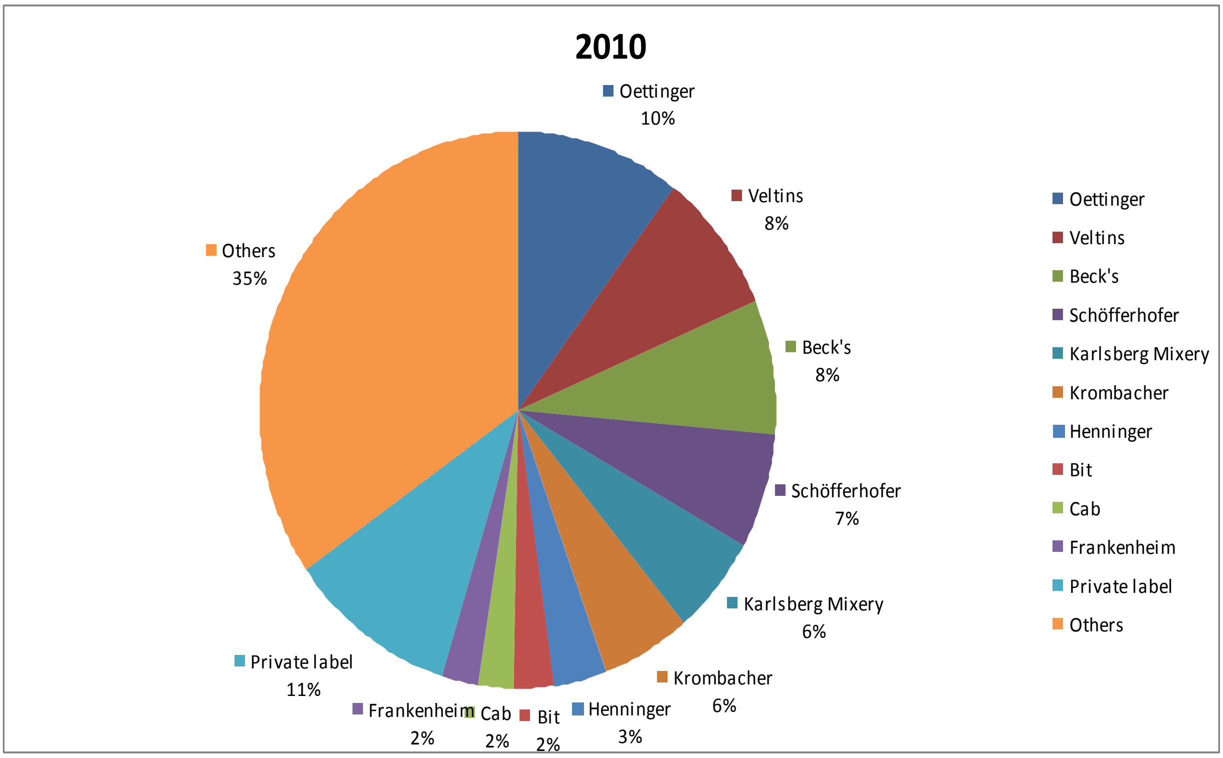
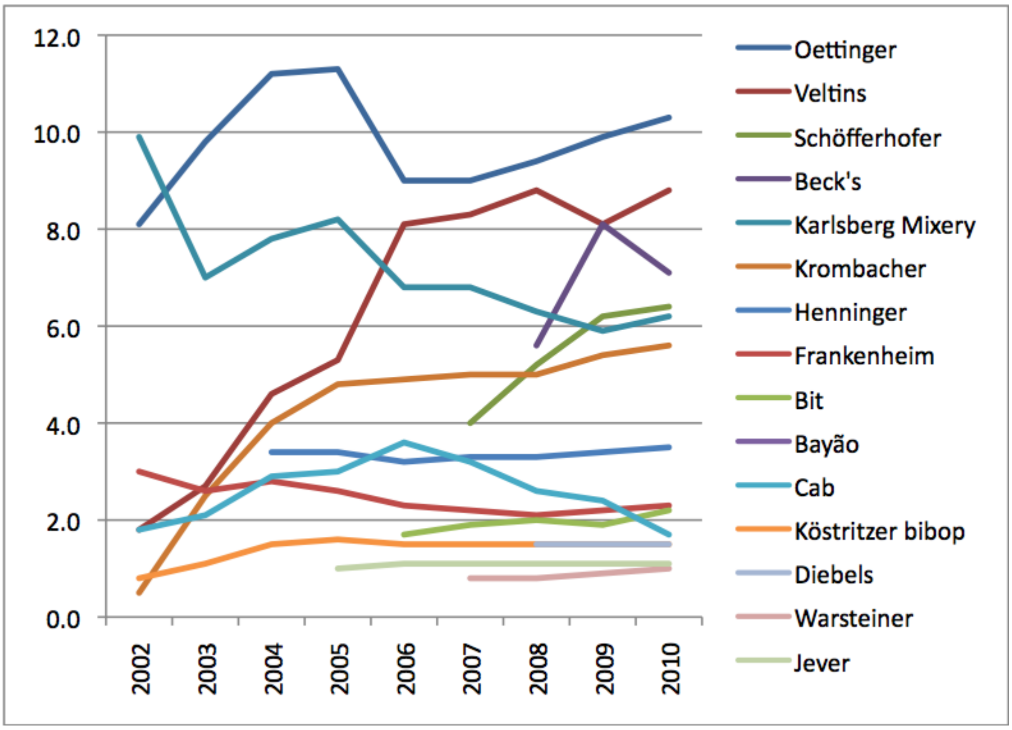
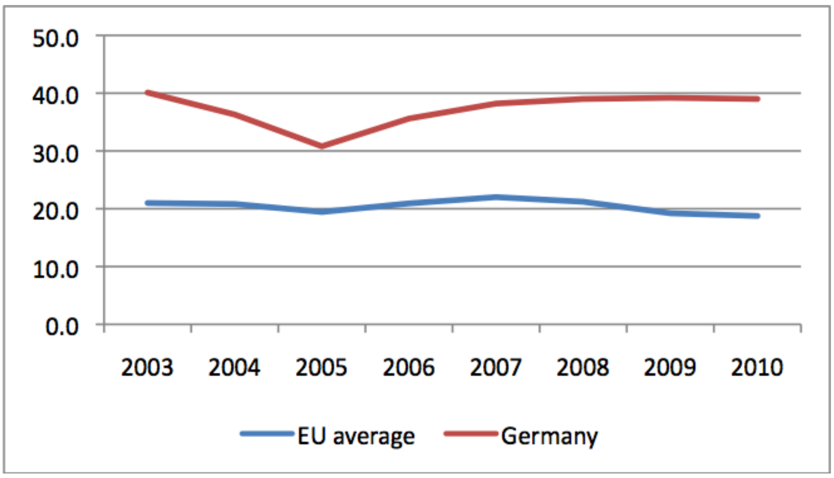


Figure C2: Trends in the top 15 market shares by brands in Germany, 2002-2010



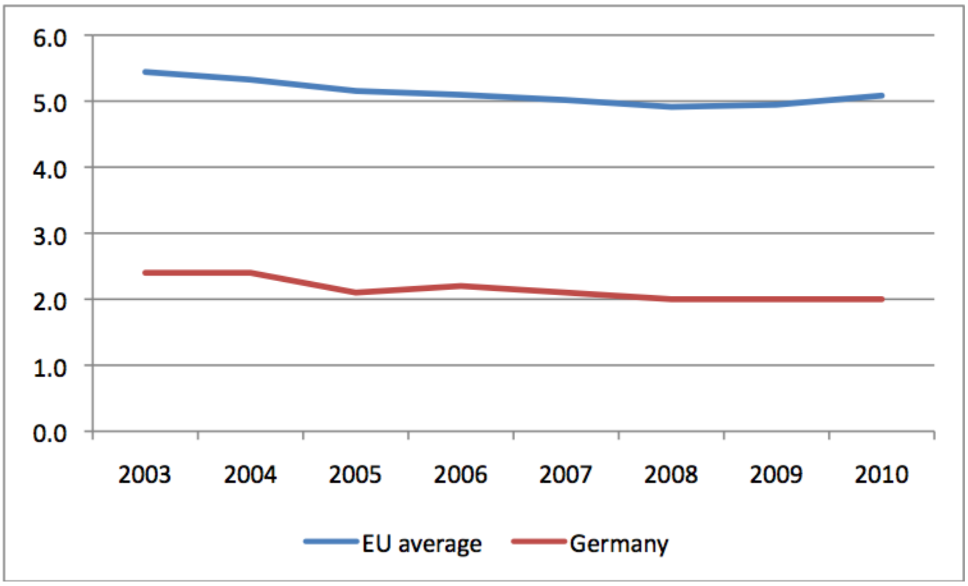
Measured in terms of per capita sales value (in €), Germany ranks 3rd among the EU countries, as of 2010 (see Figure 1 in Chapter 2). The share of sales going into the RTD/HS category in Germany was slightly more than 3% out of the total sales value of alcoholic products, and thus the fourth highest in the EU (Figure 1 in Chapter 2). While trends in the EU as a whole have remained fairly stable over the past decade, the German trajectory of per capita sales has been well above the EU average and has increased steadily since 2005 (Figure A11).

Figure C3: Spending on RTD/HS drinks per person of legal drinking age (constant 2010 prices; fixed exchange rates), off- and on-trade retail sales price, 2003-2010, in EU average (unweighted) and Germany



The prices of RTD/HS drinks appear to be considerably below the EU average (measured in price per litre of RTD/HS drink), and the gap appears to be increasing slightly, as we observe a fairly constant average decline in the price across the EU and a modest decrease of the price in Germany since at least 2003 (Figure A12).

Figure C4: Unit price per litre of RTD/HS drinks, in Euros, constant 2010 prices, fixed exchange rate, EU average and Germany, 2003-2010



RTD/HS market in the Netherlands

The market for RTDs and high-strength (HS) pre-mixes in the Netherlands has been dominated by Bacardi Breezer (38% of sales volume), followed by Smirnoff Ice – by a considerable distance (see Figure A17). A lower percentage of the Dutch market is accounted for by the category 'Others' (9%), which subsumes the brands making up less than 2% of the market. Bacardi Breezer has been a market leader for many years, though its lead has been narrowing steadily over the past decade, at the expense of an increasing market share of smaller brands (Figure A18).

Figure C5: Market shares by brands in the Netherlands, 2010

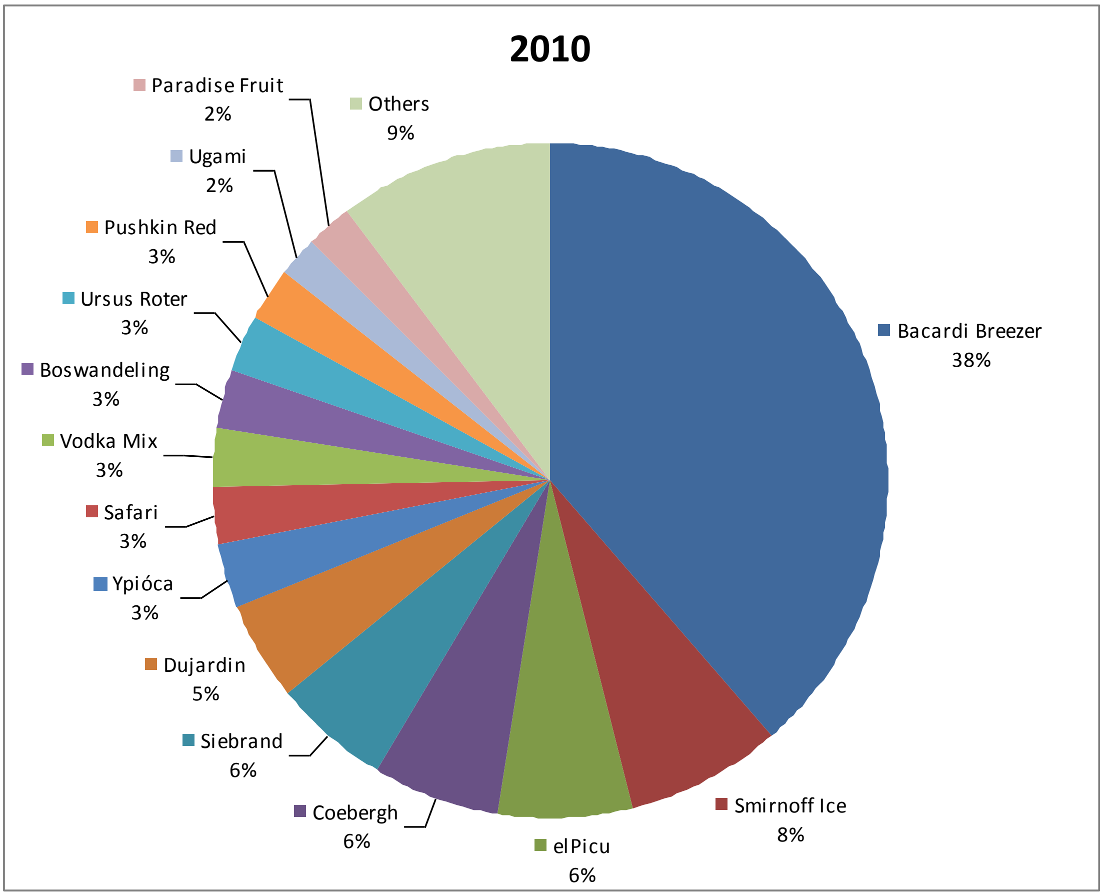
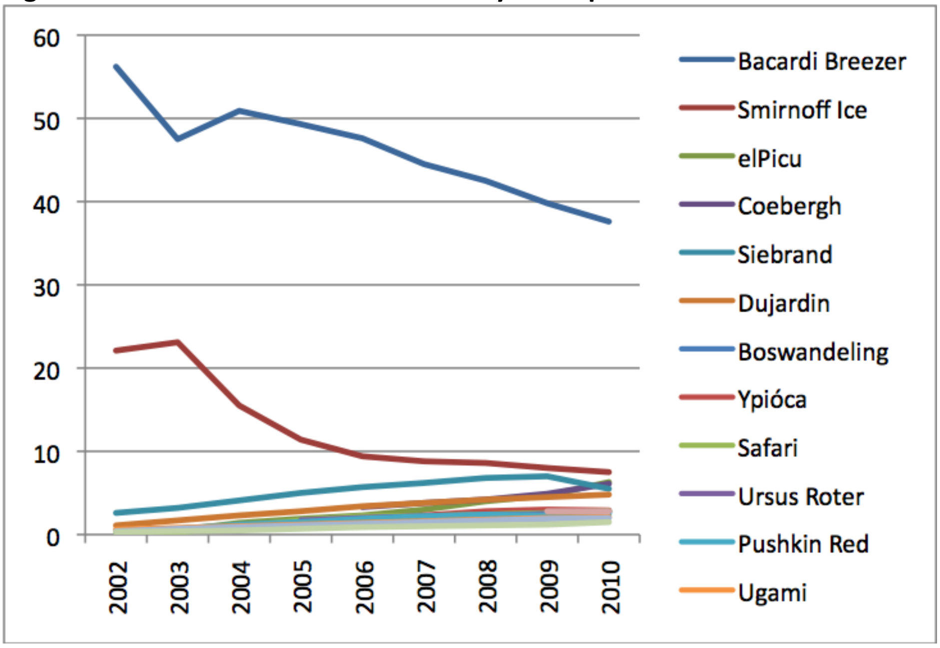
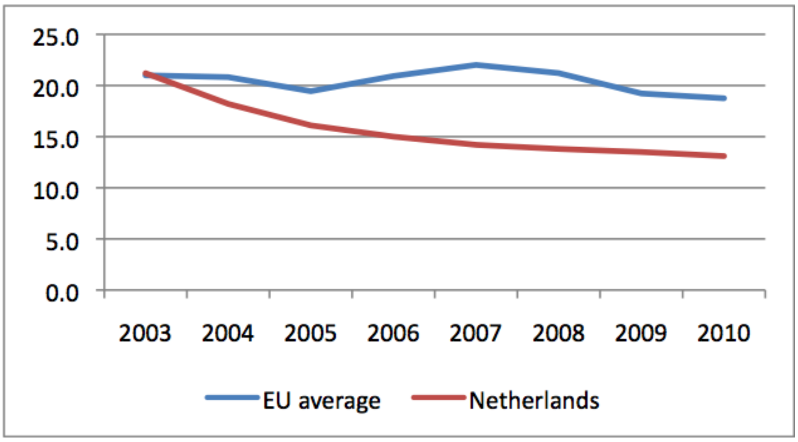


Figure C6: Trends in the market shares by the top 15 brands in the Netherlands, 2010



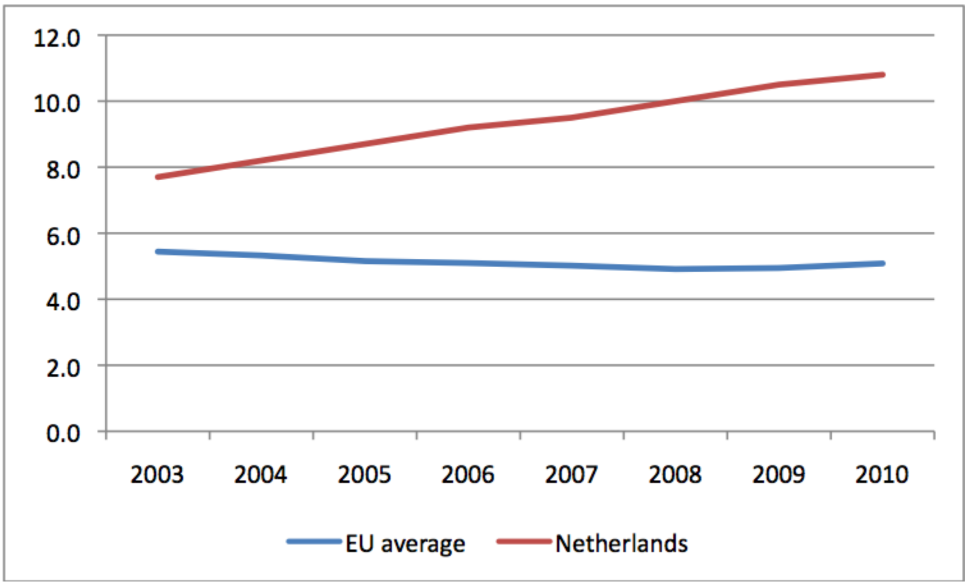
Measured in terms of per capita sales value (in €), The Netherlands ranks 11th among the EU countries, as of 2010 (see Figure 1 in Chapter 2). The share of sales going into the RTD/HS category in the Netherlands was about 2% out of the total sales value of alcoholic products, and thus the 11th highest in the EU (see Figure 1 in Chapter 2).While trends in the EU as a whole have remained fairly stable over the past decade and the Netherlands was at the average EU level in 2003, the country has since seen a reduction in per capita sales well below the EU average (Figure A19).

Figure C7: Spending on RTD/HS drinks per person of legal drinking age (EURO, constant 2010 prices; fixed exchange rates), off- and on-trade retail sales price, 2003-2010, EU average (unweighted) and the Netherlands



The prices of RTD/HS drinks in the Netherlands have been consistently well above the EU average since at least 2003, and the gap has increased steadily since then (Figure A20). While causality cannot be inferred, it is tempting to conclude that the relatively more expensive cost of RTD/HS drinks may help explain the below-average sales levels in this country.

Figure C8: Unit price per litre of RTD/HS drinks, in Euros, constant 2010 prices, fixed exchange rate, EU average and the Netherlands, 2003-2010



RTD/HS market in Italy

During the latest year for which complete data is available, Campari Soda was the leading brand in the Italian market for RTDs and high-strength (HS) pre-mixes, occupying 31% of the market, measured in terms of sales data (see Figure A13). As Figure A14 indicates, Campari Soda has maintained that leading position over almost the entire observation period. Two more brands from the same company (Campari Mix and Aperol) occupied 3 and 6% of the Italian market in 2010.

Figure C9: Market shares by the top 15 brands in Italy, 2010

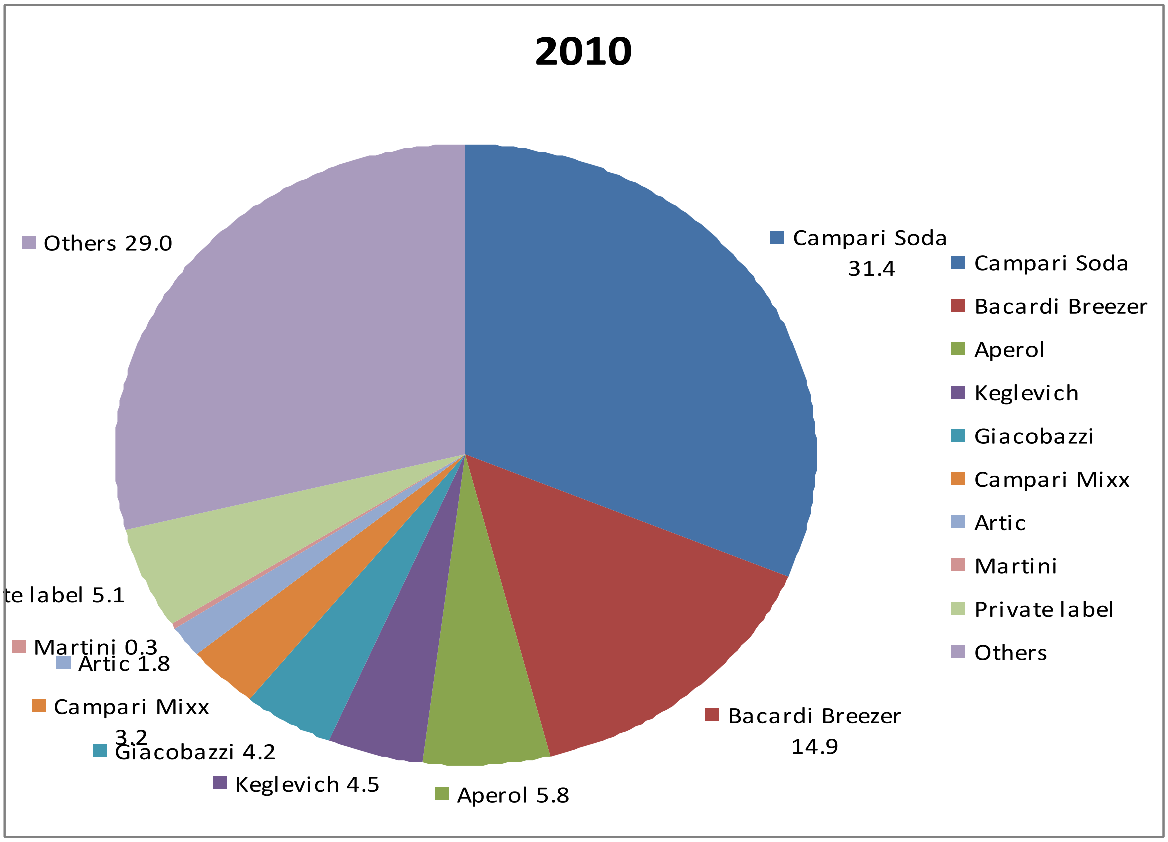
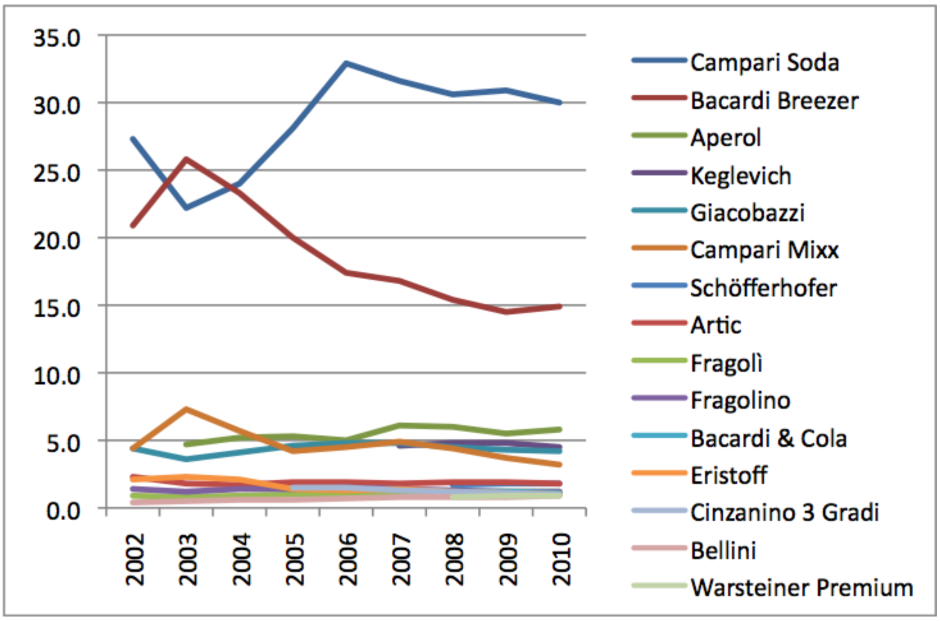
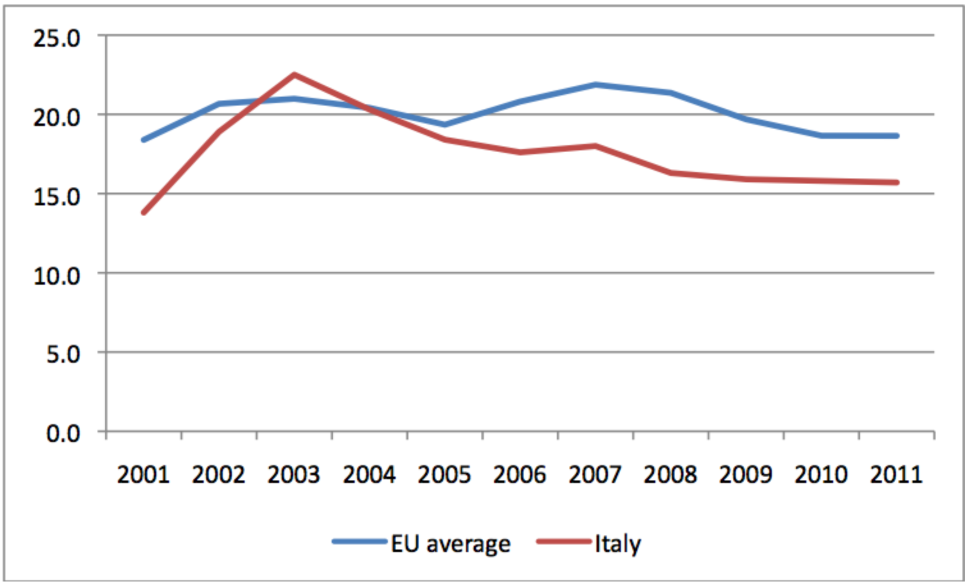


Figure C10: Trends in the market shares by brands in Italy, 2001-2010



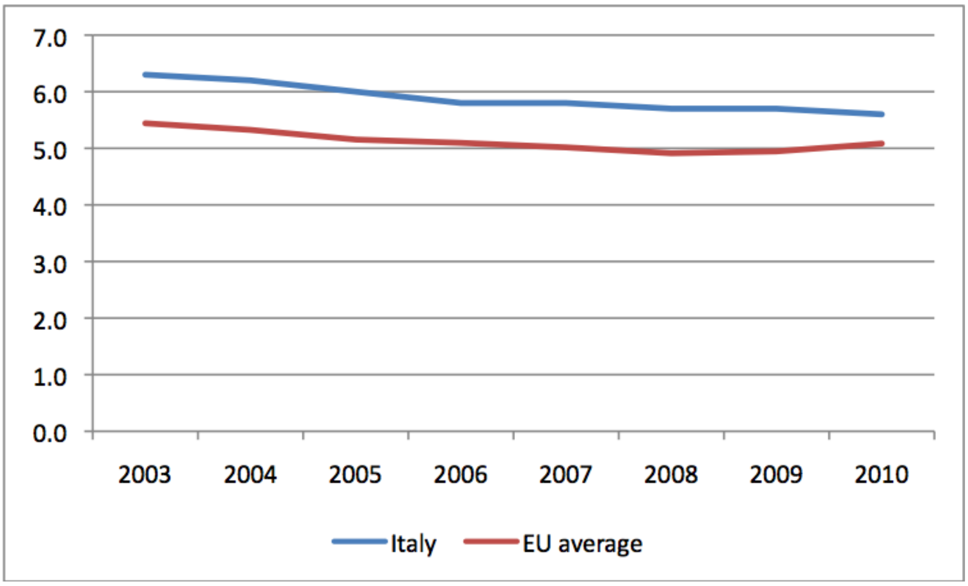
Measured in terms of per capita sales value (in €), Italy ranks 8th among the EU countries, as of 2010 (see Figure 1 in Chapter 2). The share of sales going into the RTD/HS category in Italy was about 3% out of the total sales value of alcoholic products, and thus the fifth highest in the EU (Figure 1 in Chapter 2). While trends in the EU as a whole have remained fairly stable over the past decade, there has been a slight decrease in sales in Italy since about 2004 (Figure A15).

Figure C11: Spending on RTD/HS drinks per person of legal drinking age (constant 2010 prices, fixed exchange rates), off- and on-trade retail sales price, 2001-2010, in EU average (unweighted) and Italy



Prices of RTD/HS drinks appear to be slightly below the EU average (measured in price per litre of RTD/HS drink), though the gap appears to be narrowing, as we observe a fairly constant average decline in the price across the EU and some stabilization of the price in Italy since 2007 (Figure A16).

Figure C12: Unit price per litre of RTD/HS drinks, in Euros, constant 2010 prices, fixed exchange rate, in EU average and Italy, 2003-2010



Annex D
Supplement to Chapter 5

Table D1: Vodka-RTD ingredients

Product	Alcohol content (by volume)	Ingredients	Nutritional information (per 100ml serving)
Vodka-RTD variant 1	4%	Carbonated water Vodka Sugar Acids: Citric Acid (E330), Phospheric Acid (E338), Tartaric Acid (E334) Acidity regulator: Trisodium Citrate (E331) Flavours Preservative: Sodium Benzoate (E211) Salt	60 kcal 251 kJ 8g carbohydrate 3g alcohol per serving
Vodka-RTD variant 2	5%	Carbonated water Vodka Sugar Acids: Citric Acid (E330), Phospheric Acid (E338), Tartaric Acid (E334) Acidity regulator: Trisodium Citrate (E331) Flavours Preservative: Sodium Benzoate (E211) Salt	52 kcal 217 kJ 6g carbohydrate 4g alcohol per serving

Source: www.knowyourdrink.com (accessed 21 November 2011).

Table D2: Brand share of Vodka-RTD in comparison with other RTDs/high-strength premixes, 2002-2011 (% of total volume)

Country	Brand position in country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
UK	3rd WKD is leading RTD brand (34.7% share in 2011)	-	-	-	-	17.5	17.0	13.6	12.3	10.6	9.9
Sweden	4th Xide (Carlsberg) is leading RTD brand (36.6% share in 2011)	-	1.7	9.0	11.7	12.5	13.4	13.4	14.0	11.9	11.6
Bulgaria	2nd Bacardi Breezer is leading RTD brand (48.3% share in 2011)	-	28.6	30.3	31.8	32.8	34.0	34.6	34.7	35.3	36.2
Poland	3rd Sobieski Impress is leading RTD brand (39.8% share in 2011)	-	56.7	31.2	29.1	27.9	29.3	25.0	23.0	19.7	18.5
Netherlands	2nd Bacardi Breezer is leading RTD brand (37.4% share in 2011)	22.1	23.1	15.5	11.4	9.4	8.8	8.6	8.0	7.5	7.4
Czech Republic	3rd Staropramen Cool Lemon which was introduced in 2011 is leading RTD brand (62.7% share in 2011)	-	49.2	25.8	16.2	12.1	9.1	8.1	4.8	4.5	1.7
Denmark	2nd Bacardi Breezer is leading RTD brand (55.9% share in 2011)	48.9	48.2	45.0	45.2	46.9	46.4	42.2	41.2	19.6	19.6
Finland	9th Hartwell Original Gin Long Drink (Heineken NV) Is leading RTD brand (18.6% share in 2011)	-	1.4	2.8	2.9	2.4	2.1	1.5	1.2	1.1	1.1
Romania	7th Salitos (flavoured beer) is leading RTD brand (43.3% share in 2011)	-	12.3	12.1	6.6	8.0	2.7	1.2	0.8	0.3	0.2

Country	Brand position in country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Ireland	3rd West Coast (Pernod Ricard Groupe) is leading RTD brand (40.1% share in 2011)	-	-	-	-	21.2	22.4	20.2	17.6	15.0	13.4
Belgium	5th William Lawson (Bacardi & Co Ltd) is leading RTD brand (13.3% share in 2011)	13.2	18.1	17.5	14.9	14.2	12.7	11.3	8.7	5.7	3.8
France	5th Panach' (Heineken NV) is leading RTD brand (37.1% share in 2011)	-	-	4.1	5.7	5.0	3.4	2.7	2.2	1.9	1.5
Portugal	Leading RTD brand (31.9% share in 2011)	43.1	38.8	36.6	35.4	34.6	32.1	32.1	32.3	32.4	31.9
Estonia	NO DATA	-	-	-	-	-	-	-	-	-	-
Greece	5th Gordon's (Diageo Plc) is leading RTD brand (39.6% share in 2011)	9.3	8.5	11.1	11.5	9.9	9.9	10.3	10.6	9.0	10.8
Spain	8th Tinto de La Casera which was launched in 2010 is the leading RTD brand (14.9% share in 2011)	8.2	8.0	7.5	6.9	6.7	6.4	5.8	5.2	4.3	3.7
Slovenia	4th Bandidos is leading RTD brand (42.2% of share in 2011)	0.6	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2
Hungary	7th Soproni (Heineken NV) which was introduced in 2011 is leading RTD brand (24.3% share in 2011)	-	-	-	4.3	5.4	5.7	6.1	4.5	2.0	1.1
Lithuania	NO DATA	-	-	-	-	-	-	-	-	-	-
Latvia	8th Cesus is leading RTD brand (31.7% share in 2011)	-	-	0.9	0.9	0.9	1.2	1.2	1.4	1.1	0.9

Country	Brand position in country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Austria	10th Gosser (Heineken NV) is leading RTD brand (35.1% share in 2011)	4.8	2.7	1.9	1.4	1.1	1.0	0.8	0.7	0.5	0.4
Germany	20th Oettinger is leading RTD brand (10.4% share in 2011)	4.0	5.5	3.9	1.0	0.5	0.3	0.2	0.3	0.3	0.4
Italy	17th Campari Soda is leading RTD brand (31.6% share in 2011)	-	1.8	1.7	1.2	0.6	0.5	0.4	0.4	0.4	0.4
Europe (average share)		**-**	**-**	**-**	**-**	**12.9**	**12.3**	**11.4**	**10.7**	**8.8**	**8.3**

Table D3: Pricing and packaging of Vodka-RTD

Country	Outlets sold	ABV	Pack size	Pack type	Price
UK	Bar/club	6%	330ml	Flexible packaging	€2.70 (£2.30)
Ireland	Bar/club	1%	330ml	Glass bottles	€5.10
	Bar/club	5.5%	330ml	Glass bottles	€5.10
	Food/drink/tobacco specialists	5.5%	24 x 275ml	Glass bottles	€30.50
	Restaurant	5.5%	330ml	Glass bottles	€5.20
	Supermarket/ hypermarket	5.5%	700ml	Glass bottles	€6.00
Czech Republic	Supermarket/ hypermarket	4%	0.28 litres	Glass bottles	€2.09 (52CZK)
	Supermarket/ hypermarket	5%	0.28 litres	Glass bottles	€1.80 (44.9CZK)
	Internet retailing	5.6%	0.28 litres	Glass bottles	(35CZK)
	Restaurant	5.6%	0.28 litres	Glass bottles	(68CZK)
Estonia	Supermarket/ hypermarket	4%	0.7 litres	Glass bottles	€4.10 (64EEK)
	Supermarket	4%	0.25 litres	Glass bottles	(1.25EEK)
	Restaurant	4%	0.25 litres	Glass bottles	(3.20EEK)
Greece	Supermarket/ hypermarket	4%	275ml	Glass bottles	€1.70
Spain	Food/drink/tobacco specialists	4%	275ml	Glass bottles	€1.90
	Supermarket/ hypermarket	4%	275ml	Glass bottles	€1.50
Sweden	Food/drink/tobacco specialists	4%	275ml	Glass bottles	€2.17 (19.9SEK)
	Pub	4%	275ml	Glass bottles	€6.34 (58SEK)
Bulgaria	Restaurant	40%	275ml	Glass bottles	€1.79 (3.5BGN)
	Hypermarket	14%	275ml	Glass bottles	(3.50BGN)
	Supermarket	14%	275ml	Glass bottles	(3.59BGN)
Nether-lands	Supermarket/	5.3%	275ml	Glass bottles	€1.50
	hypermarket	5.3%	700ml	Metal Beverage Cans	€3.20
	Bar/club	5.5%	275ml	Glass bottles	€4.70
Denmark	Bar/club	5.5%	275ml	Glass bottles	€6.72 (50DKr)
	Supermarket/ hypermarket	5.5%	275ml	Glass bottles	€2.59 (19.3DKr)

Country	Outlets sold	ABV	Pack size	Pack type	Price
Poland	Supermarket/ hypermarket	5.6%	0.28 litres	Glass bottles	€1.19 (5.2PLN)
Slovenia	Supermarket/ hypermarket	5.6%	0.28 litres	Glass bottles	€1.90
Hungary	Pub	5%	275ml	Glass bottles	€3.24 (990HUF)
	Supermarket/ hypermarket	5%	275ml	Glass bottles	€1.70 (520HUF)
Lithuania	Supermarket/ hypermarket	5%	275ml	Glass bottles	€1.53 (5.3LTL)
Romania	Supermarket/ hypermarket	5%	275ml	Glass bottles	€1.30 (5.7RON)
Belgium	Internet retailing	5%	275ml	Glass bottles	€1.60
Finland	Food/drink/tobacco specialists	5%	275ml	Glass bottles	€2.40
France	Supermarket/ hypermarket	5%	2 x 0.7 litres	Glass bottles	€3.90
Latvia	Bar/club	7%	250ml	Glass bottles	€3.55 (2.5LVL)

Source: Euromonitor (accessed 2 November 2011).

Table D4: Brand shares of all German RTD producers

Brand	Company name	2002	2003	2004	2005	2006	2007	2008	2009	2010
Oettinger	Oettinger Brauerei GmbH	8.5	10.2	11.7	11.8	9.3	9.3	9.6	10.2	10.6
Veltins	Brauerei C & A Veltins GmbH & Co KG	1.9	2.8	4.8	5.6	8.5	8.6	9.1	8.3	9.0
Schöfferhofer	Oetker-Gruppe	-	-	-	-	-	4.2	5.4	6.3	6.6
Beck's	Anheuser-Busch InBev NV	-	-	-	-	-	-	5.8	8.3	7.3
Karlsberg Mixery	Karlsberg Brauerei GmbH & Co KG	10.4	7.3	8.2	8.5	7.1	7.0	6.5	6.1	6.4
Krombacher	Krombacher Brauerei Bhd Schadeberg GmbH & Co KG	0.5	2.6	4.2	5.0	5.1	5.2	5.2	5.5	5.8
Henninger	Oetker-Gruppe	-	-	3.5	3.6	3.3	3.4	3.4	3.5	3.6
Frankenheim	Warsteiner Brauerei Haus Cramer GmbH & Co KG	3.1	2.7	2.9	2.7	2.4	2.2	2.2	2.2	2.4
Bit	Bitburger Braugruppe GmbH	-	-	-	-	1.8	2.0	2.1	2.0	2.2
Bayão	Bayão Getränke GmbH	-	-	-	-	-	-	-	-	-
Cab	Krombacher Brauerei Bhd Schadeberg GmbH & Co KG	1.9	2.1	3.0	3.1	3.7	3.3	2.7	2.4	1.8
Köstritzer bibop	Bitburger Braugruppe GmbH	0.8	1.2	1.6	1.7	1.5	1.5	1.6	1.5	1.5
Diebels	Anheuser-Busch InBev NV	-	-	-	-	-	-	1.5	1.6	1.6
Warsteiner	Warsteiner Brauerei Haus Cramer GmbH & Co KG	-	-	-	-	-	0.8	0.9	0.9	1.0
Jever	Oetker-Gruppe	-	-	-	1.1	1.1	1.1	1.1	1.1	1.1
Holsten	Carlsberg A/S	-	-	1.4	1.3	1.3	1.2	1.1	0.7	0.7
Wernesgruener Lemon	Bitburger Braugruppe GmbH	-	-	-	-	0.6	0.6	0.6	0.6	0.6
Sinco Radler	Deutsche Sinalco GmbH Markengetränke & Co KG	-	-	-	-	-	-	-	-	0.5
Smirnoff Ice	Diageo Plc	4.2	5.7	4.1	1.0	0.5	0.3	0.2	0.3	0.4
Cool Up	Katlenburger Kellerei Dr Demuth GmbH & Co KG	0.2	0.2	0.5	0.5	0.4	0.3	0.3	0.3	0.3
Jim Beam	Beam Inc	-	-	-	-	-	-	-	-	-
Bacardi & Cola	Bacardi & Co Ltd	0.6	0.6	0.7	0.4	0.2	0.1	0.1	0.1	0.1
Jack Daniel's	Brown-Forman Corp	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1
Jim Beam	Fortune Brands Inc	0.6	0.6	0.5	0.3	0.2	0.1	0.1	0.2	0.2
Bacardi	Bacardi & Co Ltd	4.0	6.3	4.1	1.2	0.6	0.3	0.2	-	-
Bacardi Breezer	Bacardi & Co Ltd	1.2	1.5	0.7	0.2	0.1	0.1	0.0	-	-
Beck's	InBev NV SA	-	-	-	4.2	5.4	5.4	-	-	-
Diebels	InBev NV SA	-	-	2.4	1.9	1.6	1.5	-	-	-
Henninger	Radeberger Gruppe KG	4.2	3.7	-	-	-	-	-	-	-
Diebels	Interbrew NV SA	4.0	2.7	-	-	-	-	-	-	-
Holsten	Holsten-Brauerei AG	1.6	1.4	-	-	-	-	-	-	-

Brand	**Company name**	2002	2003	2004	2005	2006	2007	2008	2009	2010
Private label	Private Label	16.8	15.5	14.7	15.7	13.1	11.8	11.6	10.1	10.2
Others	Others	35.2	32.3	30.9	30.0	32.0	29.5	28.6	27.6	26.0
Total	Total	100	100	100	100	100	100	100	100	100

Source: Passport, 2011.

Annex E
Data needs

This report overviews the market for alcoholic beverages of potentially particular appeal to minors. In identifying data and areas of research, the key starting point is to assess alcoholic beverages of potentially particular appeal to minors. Broadly these can be taken as:

1. Products where the alcohol flavour is masked by sweet/sugar/fruit flavours
2. Products packaged to appeal to minors (e.g. using vibrant colours, challenging brand names, readily portable and drinkable) – in short branded in such a way as to be something which minors might wish to be associated with, and which can be readily used in the context of the social life of minors
3. Products which have intentionally (or occasionally unintentionally) achieved brand recognition and approval from younger people, often through association with sport and music/cultural events.

Categorisation of a new product as of potentially particular appeal to minors, except in the case of heavily sweetened and flavoured drinks, is therefore to a large extent determined by subjective assessment of what will appeal to minors.

The authors assume that what is seen as being desirable for one cohort of young people, very often becomes rather unfashionable moderately rapidly, and is replaced by the next ‘trend’. In the same way that youth musical tastes and youth fashions mutate, the market for ABPPAMs is rapidly changing and responding to both the market (and its regulations) and youth trends.

So the first issue is that to identify emerging trends in ABPPAMs would require researchers located in a range of member states, to pick up the trend through observation and close study of the drinking habits of young and underage drinkers before it is picked up in sales figures (for which naturally there is a considerable time lag). There are very few organisations that are explicitly monitoring the market for alcoholic beverages of potentially particular appeal to minors, in the way in which the Centre for Alcohol Marketing and Youth does in the USA. Establishing an observatory function in this field would be helpful, to enable the EU and MS to consider a policy response to emerging products. Helpfully this might link with CAMY and others so that insights into alcoholic products potentially aimed at minors can be considered.

It will always be very difficult to gauge the drinking habits of minors, since by definition they are illicit, and therefore prone to the double bias of individuals wishing to appear ‘mature’ in their drinking habits, and yet acknowledging that purchasing alcohol underage is illegal. The ESPAD survey and HBSC survey give us the best opportunity of gauging EU wide information on drinking behaviours of minors. The limits of ESPAD and to a lesser extent HSBC are described below. National surveys can help to provide useful country specific information.

Drinks industry data on consumer testing of products, and marketing would be highly valuable in gauging the extent to which alcohol products and marketing are explicitly aimed at a youth market. It might be possible to ask for disclosure of such information through the European Alcohol and Health

Forum[1]. It is doubtful however whether any research is carried out with minors except in countries with a lower drinking limit (e.g. Germany at 16 years).

Overall we have found that the alcohol market for minors is largely made up of alcoholic beverages which are drunk by the general population. We would want to add a caveat to that most alcoholic drinks have a youth appeal because of the alcohol content, brand identify and affordability, rather than specific 'youth appeal'. Improving estimates for the size of the market for minors, and their preferences, particularly at initiation of drinking, would be helpful in gauging the utility of youth orientated versus population wide policy responses to addressing underage drinking as a public health challenge.

Increasingly marketing campaigns are being rolled out through the internet, on YouTube and through social media including Facebook, Flickr, Bebo and Twitter. Particularly in the case of viral marketing campaigns it is impossible to gauge intended and unintended impacts for marketing, and to gauge the level of marketing which reaches the underage market. Facebook has an age restriction of 13 in most jurisdictions, which, as with all internet age restrictions, is largely honoured in the breach. The unregulated nature of the internet with its international reach, and the relative difficulty of tracing the origins of web and video content makes it a prime space for marketing to minors.

Access to loyalty card information might assist in identifying sales by age if the loyalty card data were available, though it will again be unlikely to pick up underage purchases. Age of purchaser also gives little information on the age of the consumer. Such information is of course only useful in countries with a large 'supermarket' culture, or widely rolled out loyalty card scheme.

Limitations of the ABBPAM sales data

1) **Substantial cost of commercial market research reports/data**: A general problem with obtaining relevant data on sales of ABBPAMs was the significant cost of the mostly commercial reports on offer. Acquiring the information on all the available reports was far beyond the available resources of the project. Instead we made a decision to purchase temporary access to one prominent source of commercial information, i.e. the Euromonitor Passport Alcohol. Our decision to focus on this specific database was motivated by (1) a general impression from experts in the field that this is a "good" source of data and (2) based on the fact that we were able to negotiate an affordable price. While our initial ambition was to be able to compare various sources of sales data, we could not meet this objective due to the prohibitive cost involved. Hence, we have to focus our discussion of the limitations in the sales data to the Euromonitor data, not knowing whether other data sources have smaller or greater (or different) limitations.
   <u>Potential solutions</u>: as it would not be realistic to expect the market research companies to lower the prices of their information, the only solution is for public bodies, including possibly the European Commission, to be ready to invest in the acquisition of such information, so that it can be submitted to scientific scrutiny and can be used by public health researchers.

2) The main limitations we see in the Euromonitor data include:
   a. **Lack of disaggregation by age and gender** (and possibly other characteristics): the sales data given in Euromonitor is presented at the aggregate country level; this is very useful for providing the broad context, but in light of our primary interest in a specific age group (i.e. minors), the aggregate information is of limited use. Ideally, we would want to know what age group and gender the alcohol has been sold to. Since this

[1] http://ec.europa.eu/health/alcohol/forum/index_en.htm

disaggregated information is not available, we cannot present sales data for minors or youth only.
Potential solution: the data Euromonitor uses to compile their aggregate numbers already comes at some level of aggregation, and that level does not contain information on the characteristics of the buyer. In this case, the only solution is to estimate where the sales go based on additional consumer surveys. It is likely that market research companies or the alcohol industry do collect information on the age profile of their consumers but this information is typically not made publicly available. What is needed therefore is investment in data collection on product-specific sales and consumption by age and gender (and possibly other characteristics).

b. **A certain lack of transparency about the underlying methods**: we appreciate the fact that assembling sales data at national level must be a challenging undertaking that inevitably involves using a wide range of data sources. Euromonitor does provide a long list of all the sources used or at least consulted in order to calculate the sales data for each different product category. However, there is no information on how this information has been used specifically, how the sources are evaluated and how – in the end – an aggregate estimate of overall sales of alcohol product X in country Y in year t is derived. The same applies to the methodologies used to forecast future trends. Judged by some of the figures, these forecasts are simple extrapolations of past trends, but it is not clear whether that is really the case. Some methodological uncertainty also revolves around the price data in the database. The time series available for, say, RTDs or high strength premixes give prices per litre for each category, but there is no information about how this price data was calculated, e.g. whether some kind of weighting was applied, and if so, what kind of weighting.
Potential solution: the straightforward solution would be for Euromonitor to make the methodologies more explicit.

c. **Definition of "Brand" and how it is operationalised in the data is not fully clear:** Euromonitor has interesting data on volumes and market shares of sales by national brands. It is not clear, however, what is behind a given brand of, say, RTDs in a country. For instance, in the case of the RTD brand "Beck's" in Germany, it may well be that this includes different products produced by Beck's that all fall under the RTD definition. For those interested in the analysis of specific products rather than of the potentially broader brand, it would be helpful to know which products are contained in each major national brand.
Potential solution: it is reasonable to assume that Euromonitor does have the product level information; hence, one solution would be to ask Euromonitor to make this data available. This will, however, again come at a cost.

Limitations of the alcohol consumption data

The two main sources of cross-country European alcohol consumption data we considered for our analysis were ESPAD and HBSC data. In principle, they represent the best available source of data to allow for a cross-country comparison of both patterns and trends as well as of determinants of ABBPAM consumption by minors. (There do, however, exist more in depth and bigger single country surveys.) However, neither ESPAD nor HBSC data are in the public domain, although it is in principle possible to obtain part of at least the HBSC data by filling in requests. In the time available we have been able to gain access to the 2007 ESPAD data, but not the 2011 round, which has only recently been collected. Hence our discussion of limitations again is focused on one source of data (albeit an important one), i.e. the ESPAD data, which we were able to obtain access to thanks to intermediation from EC side and personal contacts. Many of the issues are likely to apply to HBSC data as well.

- **Access to the data**: the overall limitation is limited access to the data for researchers more generally, leading to the data sources probably being far under-exploited.

Potential solution: It may be worth the EC financial support to the existing surveys, on the condition that the data be made available for researchers outside the ESPAD and HBSC network or researchers, in the interest of maximising the information and knowledge gains that could be reaped from the data analysis (as well as from a more public scrutiny of the data). There may of course be issues which would need to be overcome of commercial organisations utilising the data for commercial ends (e.g. to aid with alcohol marketing).

- **Incomplete age profile of "minors"**: ESPAD data focuses on students aged 16 only. Hence we have no information about alcohol (and specifically ABBPAM) consumption across the age distribution of minors. This limits the extent to which we can generalise the findings of both our descriptive analysis and the analysis of determinants to a broader range of minors, and of course to youth more generally.
  Potential solution: It may be worth considering, but obviously comes at a potentially prohibitive cost, to expand the age range to include both 14 and 18 year olds. This is probably more a decision of the funders of the surveys to consider. There may also be scope for considering a merger of the ESPAD and HBSC survey, since the latter targets a lower age group. However, it may be difficult to achieve such a merger, and instead it may be easier to seek an expansion of one or both separately.

- **No information on overall age profile of ABBPAM consumption**: a problem closely related to the previous one, but larger and obviously impossible to overcome on the basis of a youth-targeted survey itself, is the lack of information on the actual profile of ABBPAM consumption across the entire population. Hence, we cannot ascertain the extent to which ABBPAM consumption does in fact occur disproportionately among minors and/or youth. Potential solution: If the interest is in giving a Europe-wide picture, there is a need for a European cross-country comparable alcohol survey (possibly joint with other health and health behaviour issues). EU-SILC offers in principle the basis for doing this, though it is currently without alcohol questions and it is mainly an adult survey so far. The European Health Interview Survey (EHIS) does contain self-reported alcohol questions EHIS includes alcohol and may be a promising source of information, at least for adults (see http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:European_health_interview_survey_(EHIS)).

- **Lack of intertemporal comparability of the data**: since the ESPAD data has been harmonised across countries only since the 2007 round and the 2011 data is not yet available, we cannot truly compare trends over time.
  Potential solution: again the solution would be in the hands of funders to decide to call for such longitudinal surveys.

- **Lack of longitudinal data limits the assessment of causal effects of determinants and policies**: since ESPAD data, even when the 2011 round of the data becomes available, is cross-sectional data and hence does not include the same individuals in more than one round, we cannot apply dynamic econometric techniques in the analysis of determinants and policy impact – a feature that would have allowed us to control for time-invariant unobserved factors and would thus have increased the confidence in the estimates reflecting a causal relationship.
  Potential solution: once the longitudinal survey is in place, it is straightforward to apply these advanced methods. Information from existing WHO databases variation of alcohol policies over time and across countries in the EU (and beyond) could be used in an empirical framework to test the impact of these policies on alcohol consumption.

- **Lack of parental wealth or income indicator**: ESPAD does have a proxy measure of economic family background which is a categorical variable based on the self-reports of the students. To the extent that this is a biased proxy for actual income or wealth, which it most likely is, any relationships we have estimated between income and ABBPAM consumption could be biased, too.
  Potential solution: the solution would be to include a better, i.e. more validated question (or questions); the family affluence score used in HBSC may be one option, or a questionnaire for the parents collecting either income directly (though with potential limited response rate) or a collection of asset questions that could be merged into a composite wealth measure.

- **Our assessment of the commercial value of underage drinking is limited by the underlying ESPAD data**: our estimates of the commercial value of underage drinking have to be taken as a first approximation as they rest - inevitably - on several assumptions. The major problem is the lack of microdata detailing the age-specific alcohol consumption for students older or young than 16 years – a point raised above already. This forces us to assume that the consumption of the students 16 year old is representative also of the consumption of younger and older students in the age interval 12-20. While it is likely that age 16 consumption overstates the consumption at ages 12-15, it is equally likely that it (substantially) understates alcohol consumption in the 17-20 age group. We attempted to recover at least the frequency of consumption from the EUROBAROMETER 72.3 survey of 2009 but the sample is too small to obtain reliable estimates.
- Potential solution: as mentioned above, the key is the availability of general population (including minors) surveys of alcohol consumption.