

Drinking in the Shadow Economy

IEA Discussion Paper No. 43



by

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October 2012

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Executive summary

- One in ten bottles or cans of beer sold in the UK have not had duty paid on them and there are growing reports of counterfeit spirits being sold by licit and illicit retailers. HMRC seized almost ten million litres of non-duty paid alcohol in 2010/11, a rise of 30 per cent in two years. The UK loses more revenue from the cross-border movement of alcohol than any other EU state. The aim of this paper is to identify the factors that encourage the production, distribution and purchasing of alcohol in the shadow economy.
- Unrecorded alcohol encompasses smuggled alcohol, commercially manufactured counterfeit alcohol, domestic brewing and distilling, surrogate alcohol, alcohol fraud and cross-border shopping. Failing to deal with alcohol's shadow economy threatens not only the public finances, but also public health and public order. Counterfeit spirits and surrogate alcohol frequently contain dangerous levels of methanol, isopropanol and other chemicals which cause toxic hepatitis, blindness and death. Alcohol smuggling and counterfeiting is linked to other illegal activities, including drug smuggling, prostitution, violence, money-laundering and terrorism.
- Factors which lead to shadow economic activity include high taxes and social security payments, low tax morale, complex tax systems, low Gross Domestic Product, weak institutions and corruption. Evidence shows that the illicit alcohol market is also closely associated with high taxes, corruption and poverty. The affordability of alcohol appears to be the key determinant behind the supply and demand for smuggled and counterfeit alcohol. Affordability is low in some countries due to low incomes (e.g. Eastern Europe) and in others because of high alcohol duty (e.g. Scandinavia). The price of alcohol in neighbouring markets also influences rates of unofficial consumption.
- Demand for alcohol is relatively inelastic and drinkers have a series of options available to them when real prices increase. They can do as the government hopes and drink less, but they can also do any of the following: (1) make savings elsewhere in the household budget, (2) switch from the on-trade to the off-trade, (3) downshift to cheaper drinks, (4) shop abroad, (5) brew or distil their own alcohol, (6) buy counterfeit or smuggled alcohol, and finally (7) buy surrogate alcohol (e.g. methanol, antifreeze, aftershave). The extent to which consumption patterns change depends on personal income and the affordability of alcohol.
- Our analysis indicates that the affordability of alcohol does not have a strong effect on how much alcohol is consumed. Once unrecorded alcohol is included in the estimates,

it can be seen that countries with the least affordable alcohol have the same per capita alcohol consumption rates as those with the most affordable alcohol.

- Alcohol duty provides significant income to European governments, but maximising these revenues carries significant risks in terms of health, crime and secondary poverty. Lessons can be learnt from countries which have low rates of unrecorded alcohol. We conclude that economic prosperity, moderate taxation and minimal corruption are essential for a country to minimise the size the alcohol black market. Without these preconditions, efforts to tackle the illicit alcohol supply through education, deterrence and enforcement are unlikely to succeed.

The shadow economy

When the illegal vodka distillery exploded in the early hours of the evening, the blast was heard from miles around. Five men died instantly in a blaze that seemed more suited to Boston, Massachusetts in 1931 than Boston, Lincolnshire in 2011. The explosion drew the media's attention to what appeared to be a rising tide of illicit alcohol production in the UK. A few months earlier, customs officials had raided six shops in the same town and seized 88 litres of counterfeit alcohol.¹ The previous year, four men from Hackney were sent to prison for a total of 56 years after their makeshift vodka factory was raided - a factory that was reputed to be producing 24 bottles of vodka per minute.² Similar operations were uncovered in Leicestershire, Newcastle, Manchester, Worcestershire and Hertfordshire.³

These were not isolated incidents. Nationwide, there was a five-fold increase in the number of seizures of counterfeit alcohol by Trading Standards between 2008/09 and 2010/11.⁴ Meanwhile, alcohol fraud (the illegal importation of legally produced alcohol) was also booming. Her Majesty's Revenue and Customs (HMRC) seized seven million litres of non-duty paid alcohol in 2008/09, an increase of 30 per cent in two years.⁵ In 2010/11, the figure jumped to almost ten million litres (National Audit Office, 2012: 7). HMRC estimates that 'at least 1 in every 10 cans or bottles of beer sold on the UK market in 2009/10 was UK duty unpaid' (HMRC, 2012: 12).

The apparent rise in illicit alcohol consumption in Britain may be an artifact of better enforcement and policing, or it may be a temporary phenomenon resulting from recession, or it may be a permanent and growing problem due to excessive taxation. The aim of this paper is to identify the key factors that encourage the production, distribution and purchasing of alcohol in the shadow economy.

Shadow economic activity ranges from bartering, moon-lighting and tax evasion to fraud, drug-dealing and selling stolen goods. Essentially, the term shadow economy - or 'unofficial economy' - encompasses all exchanges of goods or labour which go unreported and, therefore, are untaxed. Friedrich Schneider estimates that at least ten million people work in the European Union's shadow economy (Schneider, 2000: 6).

There is a good deal of agreement between economists about which factors fuel the shadow economy. Excessive taxation and regulation are strong predictors of illicit economic activity,⁶ particularly when tax morale is low, i.e. when people feel that taxes are being misspent and/or the tax system is too complex (Frey, 2007). Schneider attributes much of the rise of undeclared work in the OECD countries between 1960 and 1998 to the 'rise in the overall tax and social security payments burden' (Schneider, 2000: 2). Working in the shadow economy can, he says, be seen as 'a reaction by individuals being overburdened by state activities' (Schneider, 2000: 2). These burdensome activities can range from convoluted tax systems to complete prohibition of products.

¹ Francis, N., 'Bottles of poison', *The Sun*, 22 April 2012.

² *Daily Mail*, '24 bottles of vodka each MINUTE: The incredible illegal distillery which made 1.3m litres of bootleg alcohol', 12 July 2010.

³ BBC News, 'Customs raids target shops selling counterfeit alcohol', 2 August 2011; BBC News, "'Growing problem" of illegally distilled alcohol', 14 July 2011.

⁴ Smithers, R., 'Seizures of fake alcohol increase fivefold in two years', *The Guardian*, 3 February 2012.

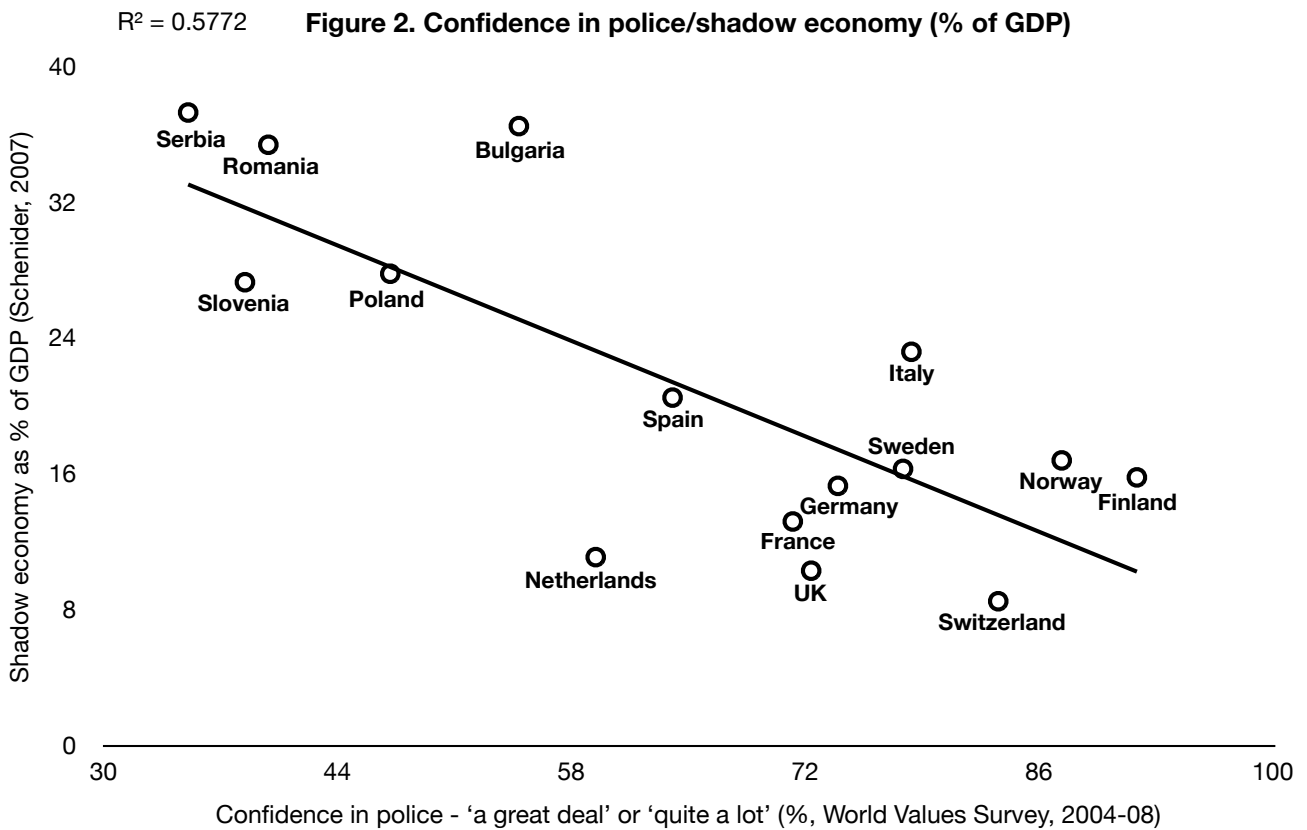
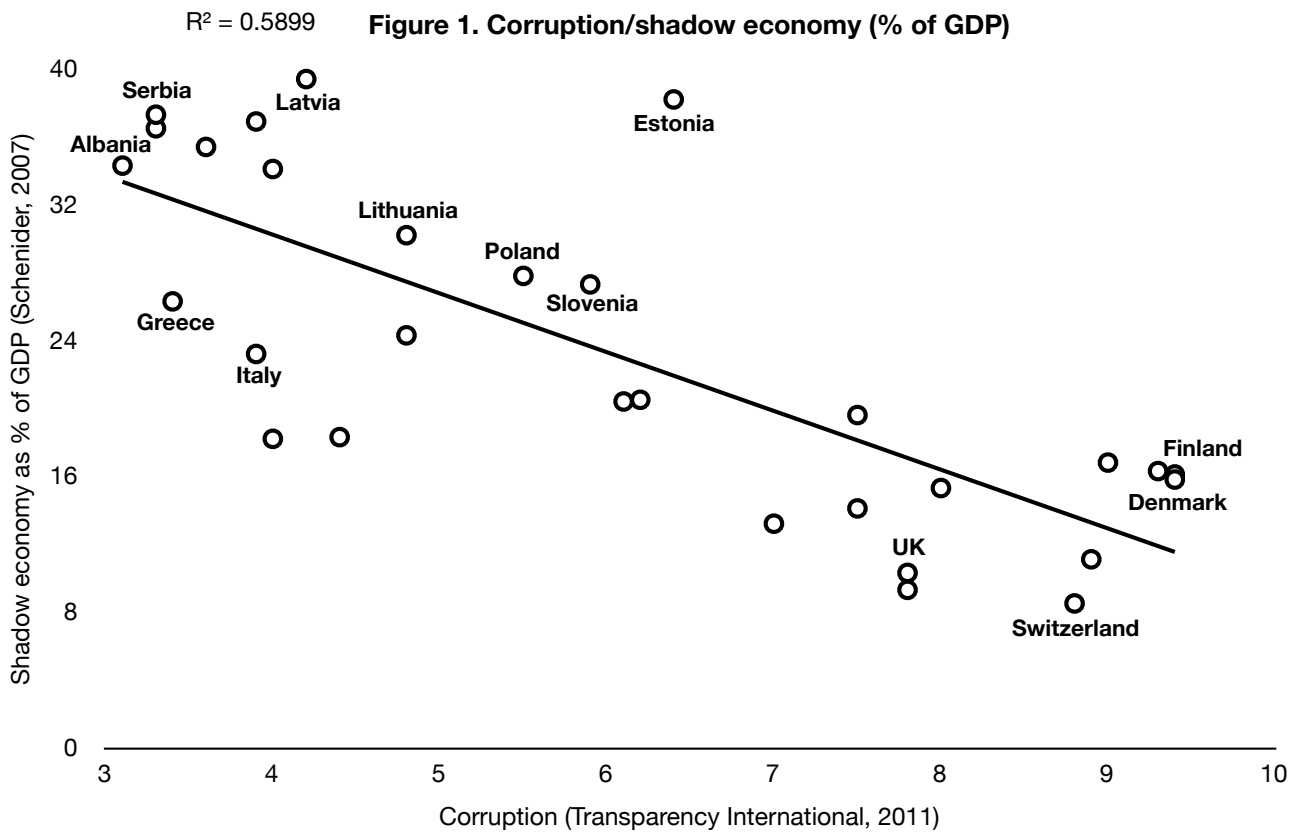
⁵ 'Criminal gangs profit from dangerous illegal alcohol', *Drink and Drugs News*, August 2011; p. 6

⁶ '...almost all studies ascertain that the tax and social security contribution burdens are among the main causes for the existence of the shadow economy' (Schneider, 2005).

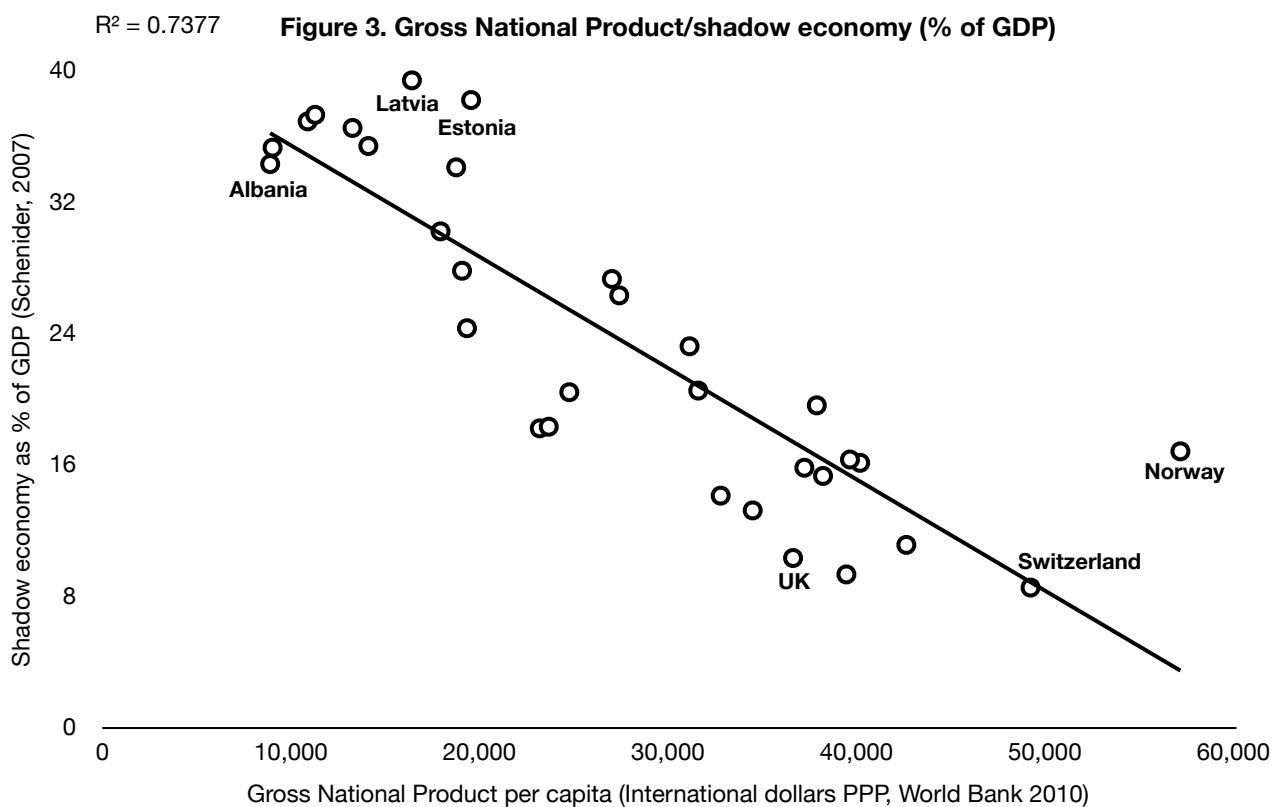
Shadow economies tend to be smaller when people have faith in state institutions, including the police and the government, and where corruption and bribery are less common. Political stability, the rule of law and strong property rights help foster an environment in which it pays to operate in the official economy. Johnson, Kaufmann, and Zoido-Lobaton argue that the wealthier OECD countries and some Eastern European countries have smaller shadow economies thanks to a 'good equilibrium' of strong institutions combined with a moderate tax regime (Johnson et al., 1998). Many Latin American and former Soviet countries, by contrast, suffer from widespread corruption and an excessive or indiscriminate regulatory system, and consequently have large unofficial economies.

The correlation between corruption and illicit economic activity can be seen in Figure 1, which charts Transparency International's 'Corruption Perceptions Index'⁷ against Schneider's estimates of the size of Europe's shadow economies (Schneider, 2007: 19-20). If we use public confidence in the police as a proxy for confidence in state institutions, we see that shadow economies tend to be larger where confidence is lower (Figure 2). All of the countries in which the shadow economy makes up more than 20 per cent of GDP are in the former Soviet Union or Southern Europe (specifically, Portugal, Italy, Greece and Spain - all of which are now struggling with enormous public debts which are partly due to tax evasion). Switzerland has the smallest shadow economy, partly due to its relatively low tax rates and a federal political system which encourages strong tax morale (Feld, 2002).

⁷ Transparency International, Corruption Perceptions Index 2011; pp. 4-5, 'The Corruption Perceptions Index ranks countries according to their perceived levels of public-sector corruption... The surveys and assessments used to compile the index include questions relating to the bribery of public officials, kickbacks in public procurement, embezzlement of public funds, and questions that probe the strength and effectiveness of public-sector anti-corruption efforts.'

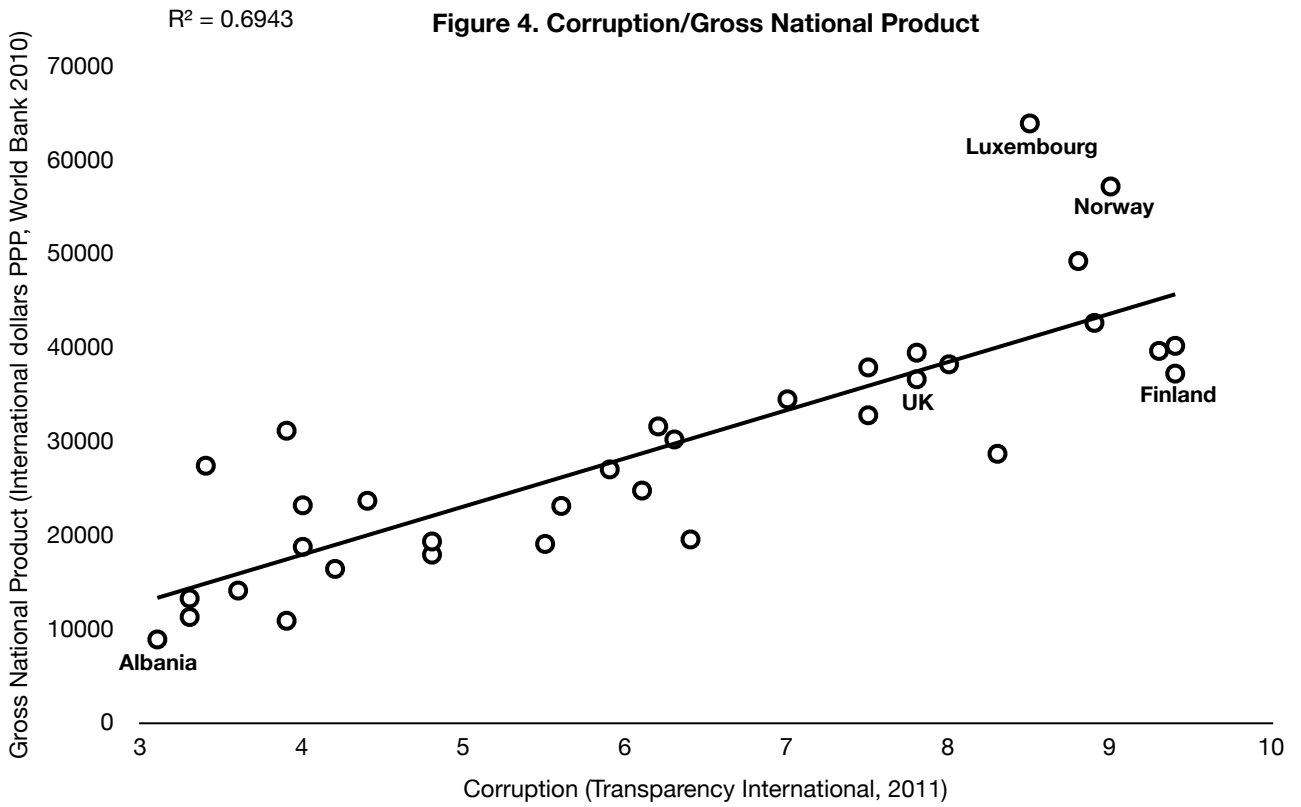


An even more robust correlation exists between Gross National Product⁸ and the size of Europe's shadow economies (Figure 3). (Here, as elsewhere in this paper, the statistics are the most recent available at the time of writing.) There are good reasons to think that this relationship is causal since poverty incentivises tax evasion and criminality, but whilst prosperity helps to dampen underground economic activity, it must be noted that the shadow economy more than doubled in size in most OECD countries in the second half of the twentieth century despite rapidly growing GNP, perhaps because of greater regulation (Schneider, 2000). The relationship is further muddled by the fact that the same factors which lay the foundations for prosperity - property rights, the rule of law, moderate regulation etc. - also help to reduce the size of the shadow economy. Consequently, national income correlates with corruption (see Figure 4), just as national income correlates with the shadow economy and the shadow economy correlates with corruption. There is, in short, a chicken and the egg question here. It is not clear from the raw data whether economic growth reduces the size of the shadow economy and reduces corruption or whether reducing corruption leads to economic growth and a smaller shadow economy.⁹ We can only observe that it is virtually impossible to achieve a minimal shadow economy in poor countries where bribery and corruption is rife.



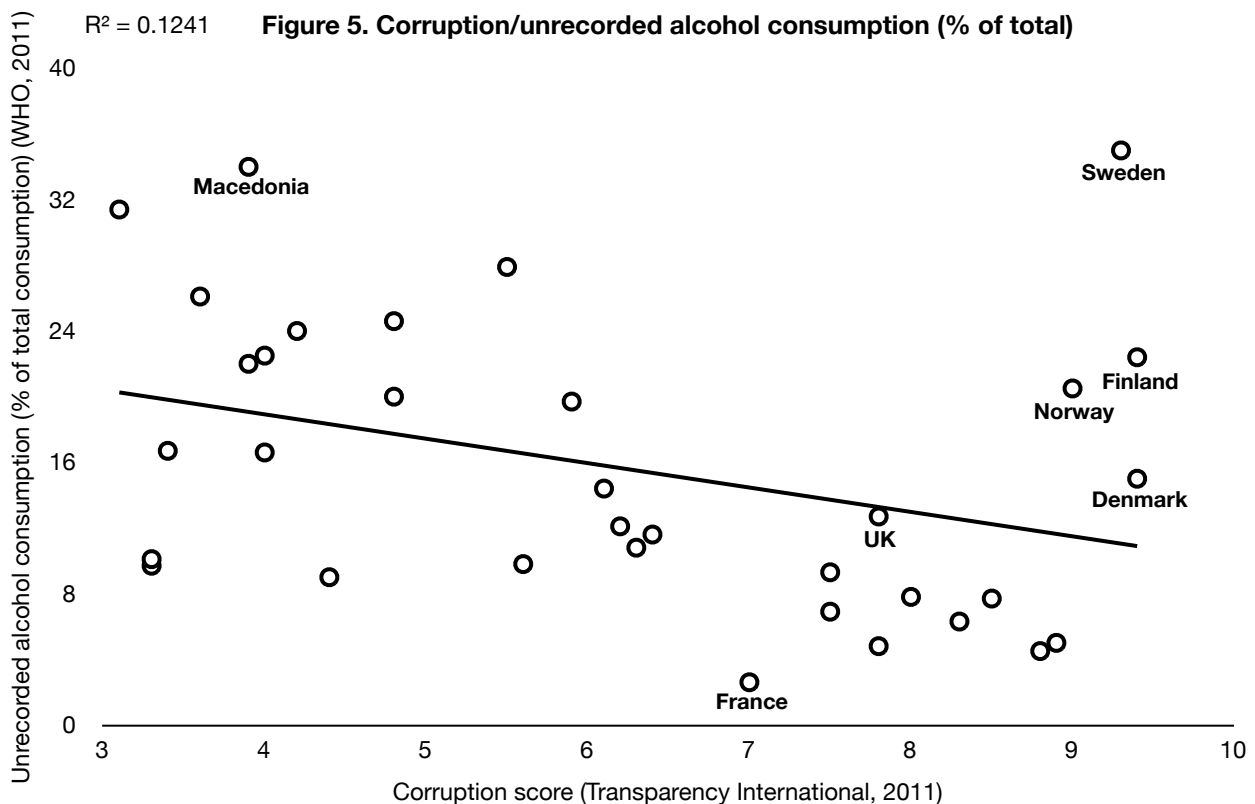
⁸ World Development Indicators database, World Bank, 1 July 2011 (purchasing power parity in international dollars)

⁹ A third possibility is that a large shadow economy causes economic stagnation and fosters corruption. None of these possibilities are mutually exclusive. For a discussion of which came first, see Friedman, 2000



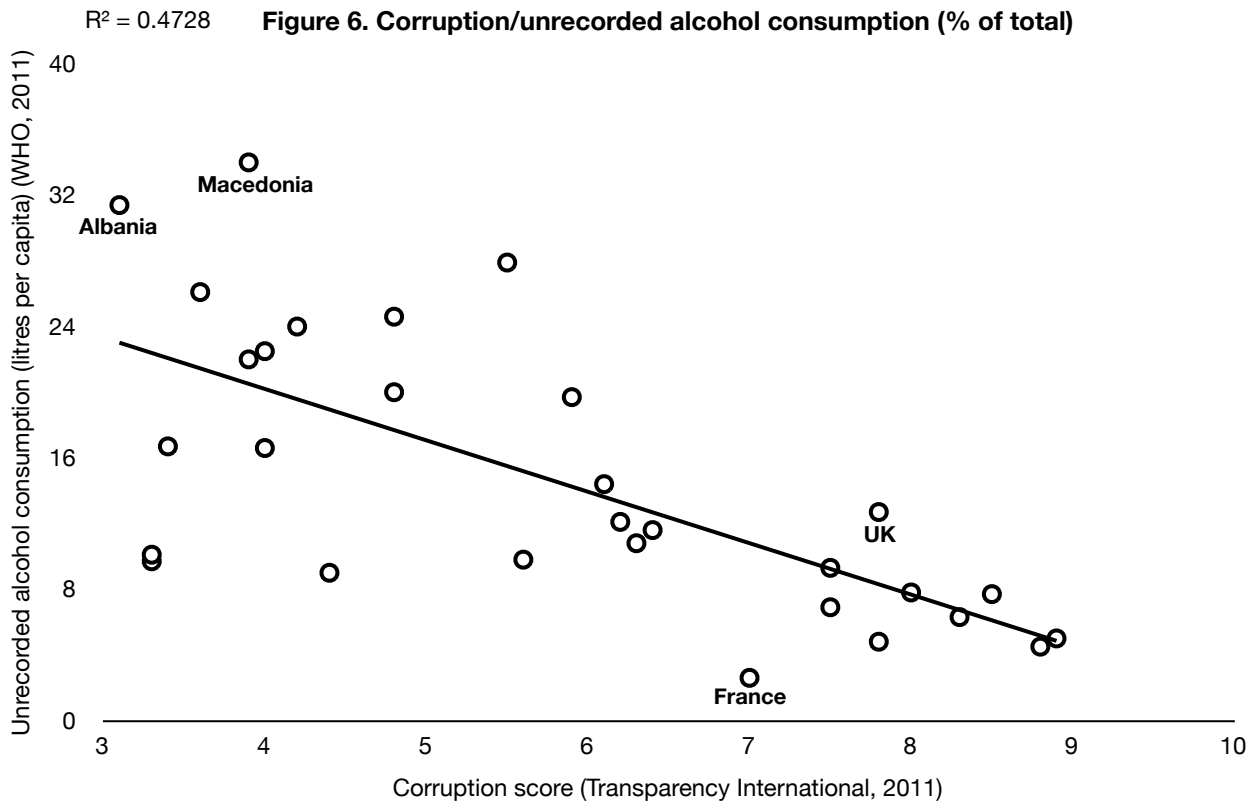
Alcohol's black market

Illicit alcohol is only one small part of the shadow economy, but it seems likely that this black market responds to the same incentives and disincentives as other unofficial economic activities. In particular, we would expect the market to expand when regulation is too onerous, taxation is excessive and corruption thrives. At first glance, there does not appear to be a strong relationship between corruption and unrecorded alcohol consumption in the 35 European countries shown in Figure 5.¹⁰ However, this lack of statistical association is due to the Scandinavian countries, all of which have the lowest levels of corruption while enjoying reasonably strong tax morale and solid faith in state institutions.¹¹ Despite this, they have high levels of unrecorded alcohol consumption. When these four countries are excluded from the analysis, we can see that for the great majority of European nations, corruption - and the weak institutions associated with corruption - is an important driver of the unofficial alcohol market (see Figure 6).



¹⁰ Alcohol consumption figures come from the World Health Organization (2011: 273-277).

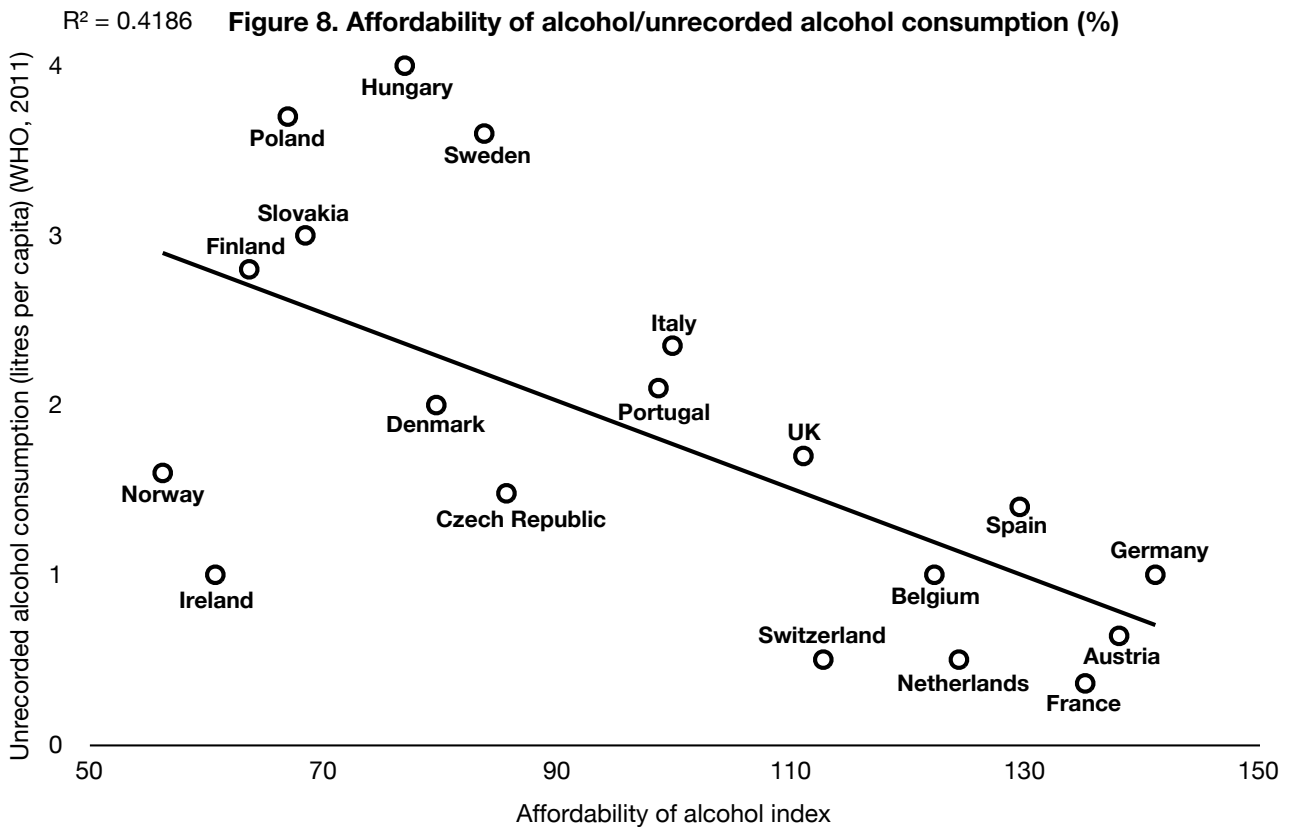
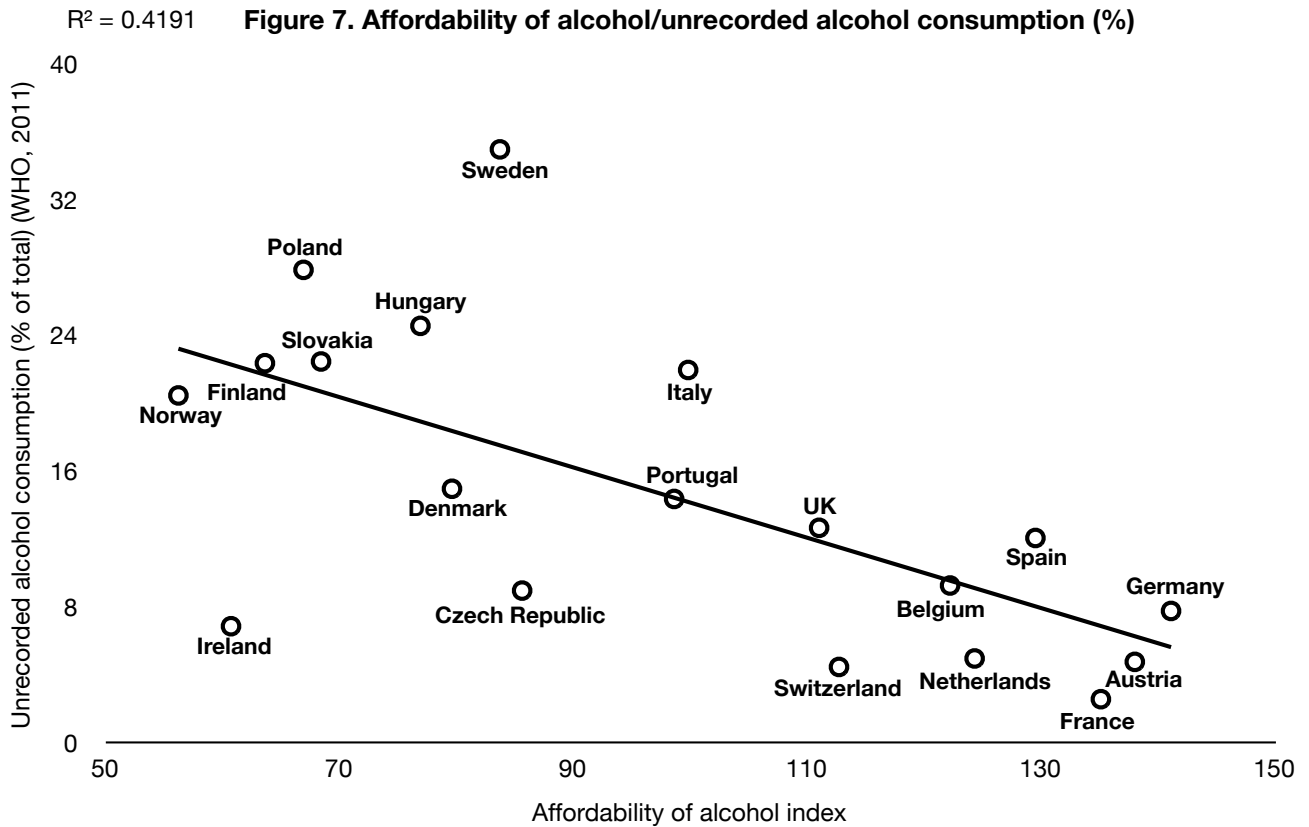
¹¹ For tax morale values, see Torgler and Schaltegger (2005: Table 3b).



What, then, explains the Nordic anomaly? The answer lies in price or, more accurately, affordability. The affordability index used in Figure 7 and Figure 8 is constructed by dividing the real disposable income index¹² by the relative price index (Kurkowiak, 2010: 2), multiplied by 100. This is the standard methodology used by the National Health Service and the European Commission. Higher scores indicate greater affordability (see Rabinovich, 2009: 25). There is a strong correlation between low affordability and high rates of unrecorded alcohol consumption. This is equally true of the proportion of total alcohol consumed unofficially (Figure 7) as it is of the absolute quantity of unrecorded alcohol consumed (Figure 8).¹³

¹² National per capita disposable income divided by average per capita national income (OECD, 'Household gross adjusted disposable income per capita', 2007)

¹³ Due to limitations in the affordability data, these graphs only show OECD countries which are also EU members.



Tax, affordability and corruption

In Europe, the affordability of alcohol is largely dictated by the rate of alcohol duty, the effects of which can be cushioned or exacerbated by income. The highest rates of unofficial alcohol consumption exist in the low-income countries of Eastern Europe and the high-income, but very high-alcohol-tax, countries of Scandinavia. Nearly a fifth of all alcohol consumed in Sweden is bought abroad and the figure in Finland is around 14 per cent (Rabinovich, 2009: 84). These cross-border purchases are supplemented with domestically produced alcohol which has been part of Nordic culture since the region flirted with prohibition in the early 21st century.¹⁴

Numerous examples demonstrate the importance of affordability in dictating the scale of domestic alcohol production in Scandinavia. Recession in the early 1990s led to a boom in domestic wine-making in Finland, whereas the practice virtually disappeared in Denmark in the same period as a result of Danish excise taxes on wine being halved (Nordlund, 2000: S556). In 1991, a quarter of all spirits consumed in Norway were distilled in the home, but this proportion declined as real prices fell (Nordlund, 2000: S557). There may be some Scandinavians who view wine-making and distilling as a hobby, but financial considerations are paramount. It is telling that home-brewing has never been as popular as distilling in the Nordic countries. Beer simply does not provide as big a bang for one's buck.

It is not only the domestic price, but the price of alcohol in neighbouring countries which dictates the scale of domestic production, cross-border shopping and smuggling. Governments are sometimes tempted to lower alcohol taxes in a bid to reduce non-duty paid consumption and to attract foreign shoppers. Rabinovich notes that 'lower taxation in neighbouring countries, typically reflected in lower prices, attracts cross-border shoppers and effectively reduces the average price of alcohol in a country. This effect is reinforced when countries reduce their excise duty rates to protect their tax base, which further reduces the price of alcoholic beverages' (Rabinovich, 2009: 84). In 1997, Sweden reduced beer duty by nearly 40 per cent in an attempt to reduce cross-border trafficking and maintain tax revenues. Finland and Denmark also reduced alcohol taxes to protect revenues after joining the EU (ibid:). Some believe that Britain's proximity to cheaper markets has kept alcohol taxes lower than they would otherwise be (ibid: 78). Nevertheless, the UK still loses more revenue in the cross-border movement of alcohol than any other EU state, according to a 2001 European Commission report (ibid: 77).

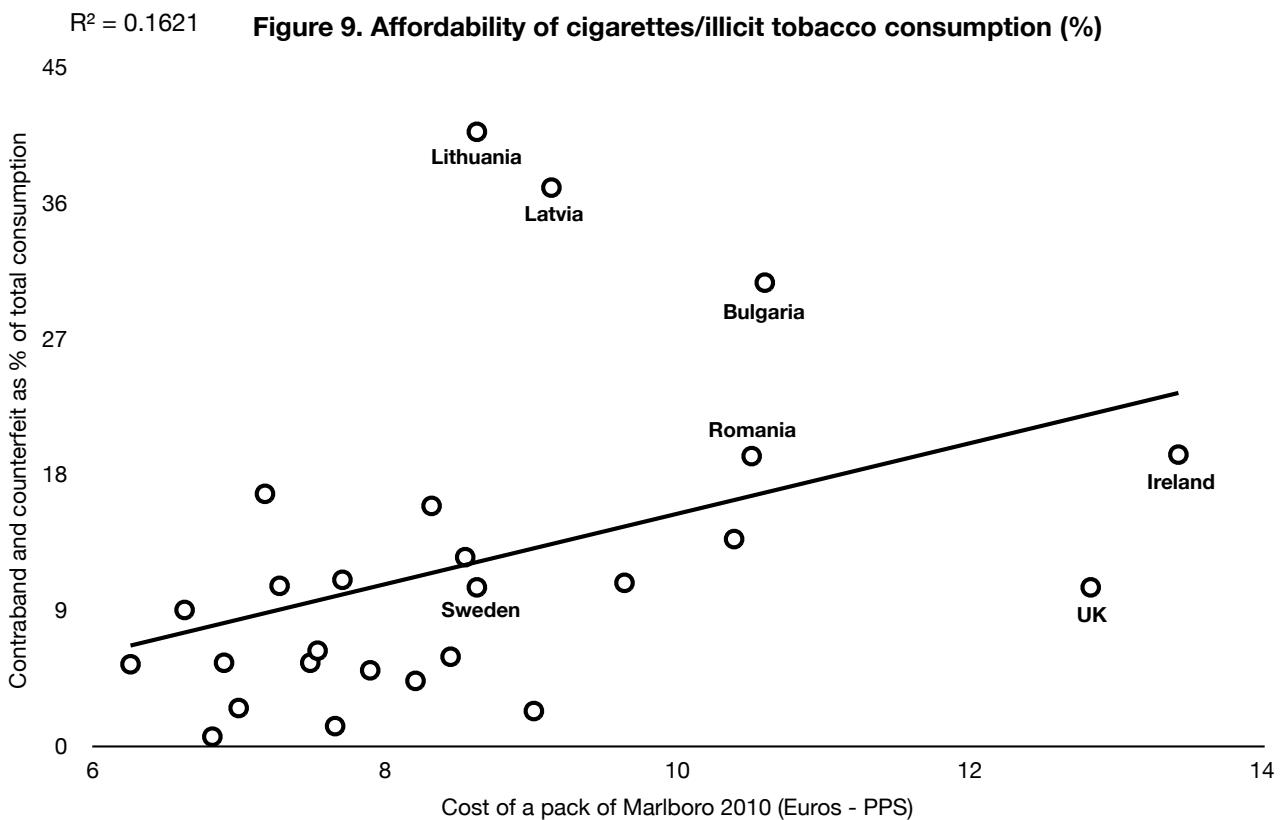
Since a country cannot dictate the tax regimes of its neighbours, geographical location is a key factor in the size of the black market. High (alcohol) tax Sweden is connected to lower tax Denmark by the Øresund Bridge. Denmark, in turn, borders the much lower taxing Germany. High-tax Finland shares a vast land border with very low-tax Russia, and Estonia is only a short ferry ride away. The

¹⁴ Finland lived under full prohibition between 1919 and 1932. Norway banned the sale of spirits between 1916 and 1927. A referendum in Sweden narrowly rejected prohibition in 1922, but alcohol was effectively rationed under the Bratt System for many years (see Snowdon, 2011: 87-89).

movement of alcohol and tobacco between these countries - whether legal and illegal - has been well-documented.

High-tax Norway, on the other hand, shares borders with two other high-tax countries, Sweden and Finland. Although the scale of alcohol smuggling between Norway and its neighbours is not trivial, the financial incentives are less strong and Norwegians must cross several borders to find very cheap alcohol (notwithstanding the small border with Russia which is in the thinly populated Arctic Circle and is well policed). Sweden's proximity to the lower taxing countries of Northern Europe is surely a factor in its exceptionally high rate of unrecorded alcohol consumption, and Norway would likely have a similar rate if, like Sweden, it was (a) situated near relatively low-tax markets, and (b) a member of the EU.

All the evidence points to price and affordability being the main factors driving demand for smuggled and cross-border alcohol, but easy access to cheap alcohol is also clearly important. This is further illustrated by the case of Iceland, which combines Nordic rates of alcohol tax with French rates of unrecorded alcohol consumption (a mere 0.4 litres per capita, or 6.3 per cent of total consumption).¹⁵ It is reasonable to assume that Iceland's geographical isolation, along with its non-membership of the EU, is largely responsible for the lack of contraband entering the country. It is possible that being surrounded by open water also gives Ireland and the UK some protection from smugglers, although the high prevalence of counterfeit and contraband tobacco in those countries suggests not (see Figure 9).¹⁶



¹⁵ See World Health Organisation (2011: 275). Iceland is not shown in the affordability graphs above because Eurostat does not include it in its index.

¹⁶ The Republic of Ireland does, of course, share a border with Northern Ireland and there is significant smuggling of tobacco, alcohol and diesel over it.

The nations of Eastern Europe are at the opposite end of the scale to Iceland. Low incomes mean that alcohol may not be very affordable to the residents of these countries, but it is very cheap by Western European standards and tends to become cheaper the further East one travels. Weak institutions, corrupt officials and proximity to countries which have still larger shadow economies, notably Russia and the Ukraine, make Eastern Europe a ready source of smuggled and counterfeit goods.¹⁷ Moreover, the material deprivation experienced by many Eastern Europeans encourages home production of intoxicants on a scale that 'renders official statistics on alcohol sales nearly useless', according to the International Centre for Alcohol Policies (ICAP, 2008: 17).

¹⁷ In Ukraine, consumption of unofficial alcohol is much more common than consumption of regulated alcohol (10.5 litres per capita against 6.09 litres per capita) (ICAP, 2008: 20).

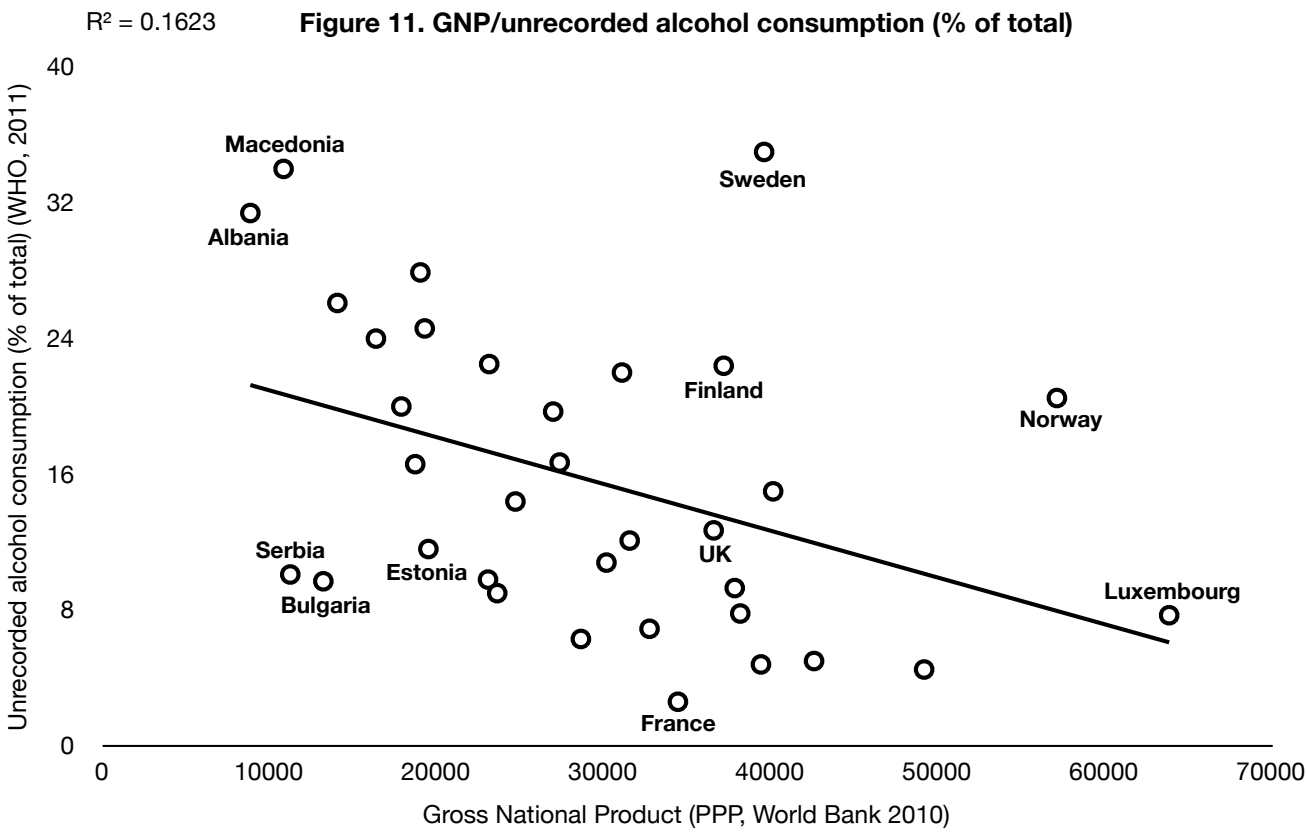
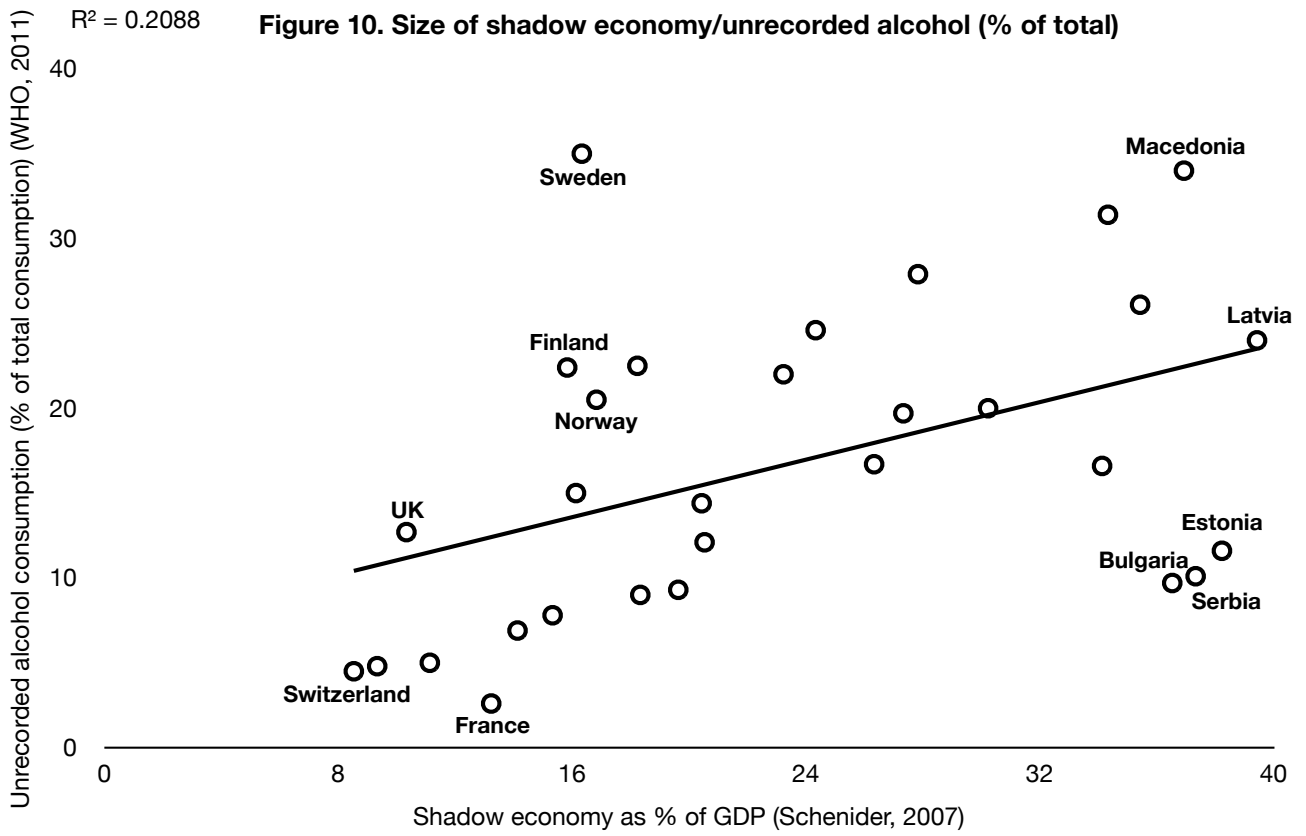
Countering the illicit alcohol market

We have seen that many of the factors which fuel supply and demand in the wider shadow economy also influence the size of the illicit alcohol market. Schneider concludes that high taxes and low tax morale are the single largest contributors to the shadow economy - accounting for between 57 and 63 per cent of its size (Schneider, 2005) - and it is not unreasonable to suggest that the same economic incentives lie behind the black market for alcohol. The path to reducing the illicit alcohol market is therefore a relatively straight and simple one. Governments should foster prosperity, since illicit alcohol is mainly consumed in lower-income countries and in the more deprived communities of high-income countries. They should also strive to build strong and trustworthy state institutions which uphold the rule of law and protect intellectual property. And they should set excise duty at a moderate rate that is comparable to neighbouring countries and avoid excessive regulation and restrictive opening hours.

France is in an ideal position to avoid alcohol fraud, smuggling and counterfeiting. It produces most of its wine domestically, its population generally prefers to drink French wine, its excise taxes on alcohol are low and its neighbouring markets are generally more expensive. The nation's most popular drink is barely taxed at all; wine duty in the UK is 72 times higher than that of France (Rabinovich et al., 2009: 78). There is therefore little incentive for the French to shop abroad or buy alcohol on the black market.

At the other extreme are countries in which alcohol prices are kept artificially high by 'sin taxes' which are designed to reduce per capita consumption and therefore - it is hoped - reduce the harms associated with excessive drinking. Depending on incomes and access to cheaper markets, these taxes can lead to alcohol fraud, cross-border trafficking, surrogate alcohol consumption, moonshining, organised crime and all the harms associated with prohibition, albeit at a lower level.

The illicit alcohol market differs from the wider shadow economy in several respects. As Figure 10 shows, unrecorded alcohol consumption is not intimately entwined with the wider shadow economy, although there does seem to be a relationship. Figure 11 shows a similarly loose association between illicit alcohol and Gross National Product despite GNP being very closely correlated with the shadow economy (see Figure 3). In both instances, Sweden, Norway and Finland consume more unrecorded alcohol than might be expected while Estonia, Bulgaria and Serbia consume less. Price surely explains the position of the Scandinavian trio in these graphs, but it is unclear why the three Eastern European countries consume so much less unrecorded alcohol than their neighbours.



If illicit alcohol is only loosely connected to the wider shadow economy, we might conclude that alcohol is not just another commodity to be bought and sold by people who have chosen to exit the formal economy. Much of the literature about the shadow economy focuses on labour markets and it is therefore not surprising that income tax, social security payments and labour market inflexibility are shown to be its major drivers. In the case of alcohol's shadow economy, however, taxes on income may be of less significance than taxes on the product itself.

It has been observed that liberalisation of markets and greater flexibility in the labour market can reduce the size of the shadow economy (Thießen, 2010: 21). No doubt general liberalisation would reduce the size of the shadow economy in alcohol. There has been a form of liberalisation caused by the creation of the European common market. This, however, has created a different dynamic because it has created new opportunities for alcohol traffickers who wish to arbitrage between the different regimes.¹⁸ For example, Sweden and Finland saw a surge in professional smuggling when their borders were opened up in the mid-1990s (Nordlund, 2000: S557). There was very little cross-border alcohol trafficking in Denmark before it joined the EEC in 1973 (Nordlund, 2000: S560) and British cross-channel shopping for alcohol and tobacco only began in earnest in 1993. As HMRC explains: 'Opportunities for excise fraud emerged effectively with the creation of the European Union (EU) single market on 1 January 1993... As excise duty rates on alcohol are far higher in the UK than on mainland Europe, perpetrators of fraud have exploited this new regime' (ibid: S560).

Economists are generally pessimistic about the chances of reducing shadow economic activity through deterrence, persuasion or enforcement. There is little evidence to show that people working - or tempted to work - in the shadow economy respond to appeals to conscience or the common good. The World Health Organization acknowledges that its prescription of higher alcohol taxes and restricted availability 'may promote the development of a parallel illicit market' (National Audit Office, 2012: 9-10), but its hopes of countering this market through 'awareness raising' and 'community mobilization' may be forlorn (World Health Organization, 2010: 17). Torgler concludes that 'moral suasion has hardly any effect on taxpayers' compliance behaviour' - a verdict that is 'in line with previous findings' (Torgler, 2004: 22). The sheer scale of the illicit alcohol and tobacco markets suggests low tax morale when it comes to excise taxes on these products, if not the tax regime generally. Those who buy smuggled vodka or cigarettes from a man in a pub can be under no illusion that they are buying from the legitimate market and it is reasonable to assume that British 'booze cruisers' are not plagued by a guilty conscience when they deprive the exchequer of alcohol duties.

It is likely that duty stamps, tracking systems and electronic payments (Schneider, 2011) can be of more use in curtailing the illegal movement of legitimately produced alcohol (and tobacco) across borders (National Audit Office, 2012: 6). This, however, is only one aspect of the black market. Home-grown counterfeiters have little to fear from such anti-smuggling techniques and governments can do little about home distilling or the covert production of illicit alcohol.

¹⁸ Freer movement of labour may also help to spread illicit production practices to other countries. It may or may not be a coincidence that the five men who died in the Boston vodka factory blaze were all Lithuanian.

Why tax alcohol?

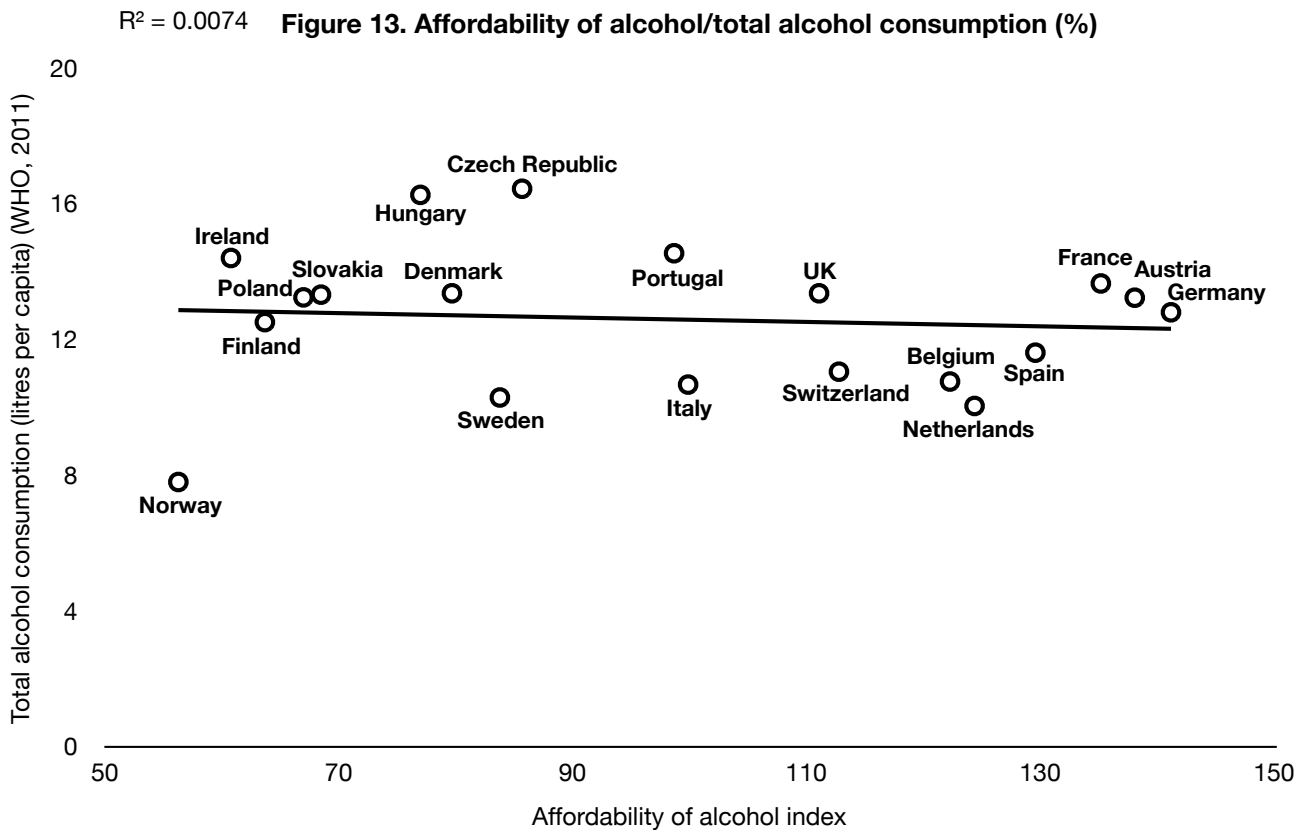
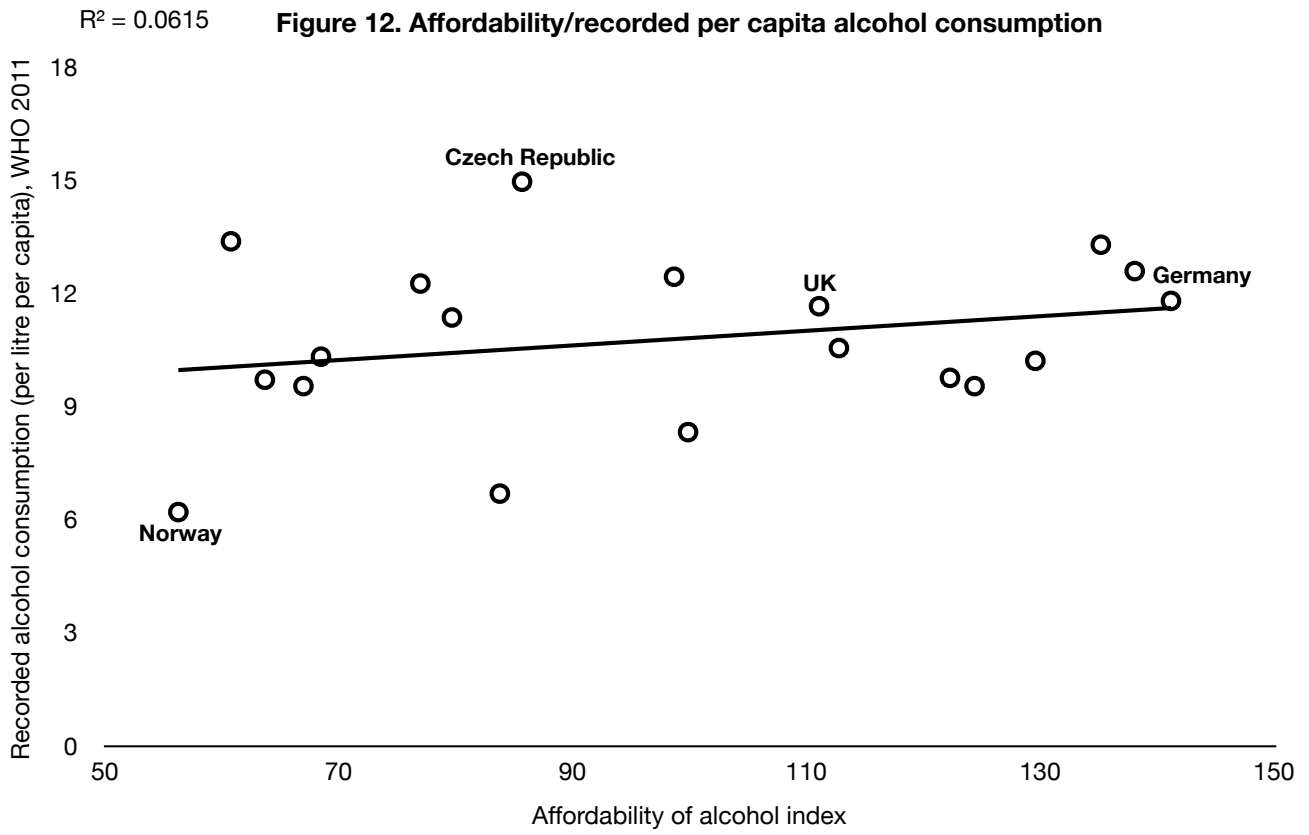
Temperance and public health campaigners typically dismiss the black market as a problem that can be suppressed through rigorous enforcement and tougher sentencing. At worst, they view a growing unofficial market as a price worth paying for a more sober society. This view is rooted in the belief that affordability is the main driver of alcohol consumption and that increasing prices by raising excise duty is therefore the single most effective way of reducing alcohol sales.

Ceteris paribus, economists would expect there to be some truth in this assertion, but there is too much real world evidence to the contrary for it to be taken as an iron rule. For example, alcohol consumption has fallen in most European countries since 1980 despite alcohol becoming significantly more affordable (OECD, 2011: 275).¹⁹ In Denmark, Sweden and Finland, the sudden drop in alcohol prices that resulted from EU accession did not bring about the kind of surge in alcohol consumption that the price elasticity models predicted.²⁰

A comparison of European countries suggests that affordability has a negligible and statistically insignificant negative effect on recorded alcohol consumption (see Figure 12). Moreover, as Figure 13 shows, when unrecorded alcohol consumption is included in the analysis, affordability does not appear to be a decisive factor in determining alcohol consumption from one country to the next.

¹⁹ It should be noted that greater affordability over time does not imply lower prices in real terms. As Rabinovich (2009: 28) notes in his discussion of trends in the EU between 1996 and 2004, '84% of the increase in alcohol affordability was driven by increases in income, and only 16% was driven by changes in alcohol prices'. Some countries, including the UK, have seen alcohol become more affordable despite above-inflation increases in price.

²⁰ 'What still needs to be explained however is the levelling off of or even drop in consumption once consumers adjusted to the availability of cheap alcohol in neighbouring countries, a phenomenon witnessed in Sweden and to a lesser extent in Finland after 2004' (Rabinovich, 2009: 84).



The evidence of this graph does not preclude the possibility of future price rises leading to less consumption of licit alcohol although, as already noted, most EU countries have seen consumption fall in recent decades despite increased affordability. It does, however, appear to be the case that countries with less affordable alcohol have similar rates of consumption to those with more affordable alcohol.

How do we explain the apparent lack of association between affordability and consumption? Demand for alcohol is relatively inelastic and drinkers have a series of options in front of them when real prices increase. They can do as the government hopes and drink less, but they can also do any of the following: (1) make savings elsewhere in the household budget, (2) switch from the on-trade to the off-trade, (3) downshift to cheaper drinks, (4) shop abroad, (5) brew or distil their own alcohol, (6) buy counterfeit or smuggled alcohol, and finally (7) buy surrogate alcohol (e.g. methanol, antifreeze, aftershave). The extent to which consumption patterns change depends on personal income and the price of drink. There is little doubt that financial considerations have helped shift drinking from the pub to the home in countries such as Britain,²¹ whereas surrogate alcohol use is rare in Western Europe but common in poorer countries such as Kenya and Russia (ICAP, 2008).

It is self-evidently true that the rich are able to afford more alcohol than the poor. On average, rich countries consume more alcohol than poor countries and rich people consume more alcohol than poor people. According to the International Center for Alcohol Policies, 'as income levels rise, consumption of unlicensed alcohol tends to drop, driven by consumers' general preference for more expensive drinks of higher quality - when they can afford it' (ICAP, 2008: 22). For individuals, as with whole nations, income is positively related to total alcohol consumption and negatively related to unrecorded alcohol consumption. But the relationship is not linear and, as Rabinovich notes, 'material deprivation can increase alcohol consumption' (Rabinovich, 2009: 37).

Since illicit alcohol plugs the gap in the market that is created by high excise taxes and low incomes, it is most often consumed in places where excise taxes are high or incomes are low. In Britain, counterfeit alcohol is sold in 'areas of deprivation, as affluent people can afford to buy the genuine stuff'.²² Outside of Europe and North America, where incomes are lower, unrecorded alcohol consumption tends to be much higher, although total consumption is lower. In South-East Asia, for example, 69 per cent of alcohol is bought or produced in the unofficial economy (World Health Organization, 2011: 5).

Contrary to temperance rhetoric, high alcohol taxes are not necessarily good for public health because, although excessive alcohol consumption undoubtedly carries risks to health, so too does moonshine. Counterfeit spirits and surrogate alcohol frequently contain dangerous levels of methanol, isopropanol and other chemicals which cause toxic hepatitis, blindness and death. These are the unintended consequences one associates with prohibition, albeit at a less intense level than was seen in America in the 1920s.

It should not be surprising that excessive taxation encourages the same illicit activity as prohibition since the difference is only one of degrees. As John Stuart Mill noted in 1859: 'To tax stimulants for

²¹ According to Banerjee et al. (2010: 21), 'The qualitative research revealed the key motivations for drinking in home (as opposed to going out to a pub, bar or restaurant) were that primarily, in-home drinking offers a relaxed, private environment with no external "stresses" (e.g. other people's annoying behaviour or not having to drive or pay for a cab home). Cost savings were also cited as a key motivator to drink at home for all groups regardless of age or social grade, as it is generally considered cheaper to drink in the home than at a pub or club.'

²² 'Criminal gangs profit from dangerous illegal alcohol', Drink and Drugs News, August 2011; p. 6

the sole purpose of making them more difficult to be obtained is a measure differing only in degree from their entire prohibition, and would be justifiable only if that were justifiable. Every increase of cost is a prohibition to those whose means do not come up to the augmented price' (Mill, 1974: 170-171).

But in a less frequently quoted passage, Mill appears to approve of taxing alcohol to the apex of what we now call the Laffer Curve. Appreciating that governments need to raise funds and that these politicians must decide 'what commodities the consumers can best spare', Mill argues that taxation of stimulants 'up to the point which produces the largest amount of revenue (supposing that the State needs all the revenue which it yields) is not only admissible, but to be approved of' (Mill, 1974: 171).

This message tends to resonate more powerfully with politicians than Mill's more libertarian pronouncements. Drinkers generally prefer low alcohol prices. Temperance campaigners nearly always demand higher prices. The politician, however, usually seeks to maximise tax revenues and will only react to the shadow economy when it becomes a serious threat to state finances. Nordlund and Österberg summarise the politician's dilemma as follows:

'Domestic economic actors can, of course, support the rules and regulations imposed by the state for controlling unrecorded alcohol consumption, but for these actors a better solution in combating unrecorded alcohol consumption would be the lowering of alcohol excise taxes... In most cases the state is not willing to follow this policy, as lower alcohol excise taxes in most cases mean lower levels of alcohol-related tax incomes. However, if the state is no longer able to control the amount of unrecorded alcohol consumption by different kinds of legal administrative restrictions the only remaining way to counteract, for instance, huge increases in travellers' border trade with alcoholic beverages or an expansive illegal alcohol market is to lower the price difference between unrecorded and recorded alcohol by decreasing excise taxes on alcoholic beverages.' (Nordlund, 2000: S559)

It scarcely matters to the politician whether unrecorded alcohol comes from legal or illegal sources. In either case, the treasury loses out on revenue. In Britain, HMRC estimates that the alcohol tax gap could be as much as £1.2 billion per annum, plus the costs of enforcement, and that this is largely because 'duty rates on alcohol are far higher in the UK than in mainland Europe' (National Audit Office, 2012: 2, 10). This is the price the state must pay for excessive taxation, but the politician is also aware that these high alcohol taxes raise £9 billion a year (Collis, 2010: 3). Being in possession of these facts he may conclude that reducing the illicit alcohol supply through tax cuts will probably reduce net alcohol tax revenues.

We argue that such a focus on maximising tax revenues is short-sighted and carries significant risks. Failing to deal with alcohol's shadow economy threatens not only the public finances, but also public health and public order. Unrecorded alcohol has, as Nordlund and Österberg note, 'the potential to lead to political, social and economic problems' (Nordlund, 2000: S562). In addition to the health hazards presented by unregulated spirits, alcohol fraud in the UK is, according to the HMRC, 'perpetrated by organised criminal gangs smuggling alcohol into the UK in large commercial quantities' (HMRC, 2012: 8). Alcohol smuggling and counterfeiting is linked to other illegal activities,

including drug smuggling, prostitution, violence, money-laundering and - in a few instances - terrorism.

It is too early to say whether the recent well-publicised cases of large-scale illegal alcohol production in the UK represent a lasting shift towards a Moonshine Britain, but it may not be a coincidence that they have come to light at a time when regulated alcohol has become less affordable as a result of successive tax rises²³ and a major recession.²⁴ Policy-makers should take the threat of illicit production seriously when considering alcohol pricing in the future.

²³ Alcohol duties began rising above inflation from 2008 and VAT rose from 17.5 per cent to 20 per cent in January 2011.

²⁴ Although published in 2011, the WHO's estimates of unrecorded alcohol consumption date from 2005. The graphs in this paper therefore do not reflect the growth in the illicit market reported by government and the media in recent years.

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