

## SOCIAL VALUES AND CONSUMPTION PATTERNS IN NON-COMMERCIAL ALCOHOL MARKET OF LATVIA

Valters Kaže<sup>1</sup>, Andrejs Strateičuks<sup>2</sup>, Roberts Škapars<sup>3</sup>

<sup>1</sup>University of Latvia, Latvia, valters.kaze@gmx.net

<sup>2</sup>University of Latvia, Latvia, andrejs.strateicuks@inbox.lv

<sup>3</sup>University of Latvia, Latvia, Roberts.Skapars@lu.lv

**crossref** <http://dx.doi.org/10.5755/j01.em.17.4.3015>

### Abstract

The objective of the paper is to analyse the mechanisms of the non-commercial alcohol market in Latvia in order to suggest such social and tax policies to government that will limit the harmful influence of non-commercial alcohol and have positive effect on state tax revenues.

The study is based on a quantitative survey representatively sampling general population of Latvia, regular non-commercial alcohol consumers and producers/distributors of non-commercial alcohol. The analysis reveals the patterns related to volumes and frequency of trade / consumption, motivators and enablers to enter the shadow economy. Social Values methodology is applied to explain the human values behind these choices in order to explain the motivation and suggest prevention policies.

Practical recommendations for state policies are issued as the result of the study. Those include priorities for law enforcement bodies, actions to increase the effectiveness of control over the black market and priorities for communication with the consumers in order to prevent them from entering the shadow economy area. As the result of implementation, increasing state tax revenues and better controlled social and economic impact of the issue would be anticipated.

The study thus might represent a value from academic and state policy management perspective, as well as provide valuable insights for legal alcohol industry marketers to build competitive propositions versus both legal and illegal market offers.

*Keywords:* social values, tax revenues, hidden economy, unrecorded, non-commercial alcohol, Latvia

*JEL Classification:* A13, D12, E62, H21, H26, Z31.

### Introduction

*Context.* State tax revenues have had fallen in Latvia during the economic downturn. Increase of several tax rates, including excise tax on wine and spirits, had been chosen as the solution to support the budget. The total effective increase of excise tax for strong spirits has been +49% from 2008 to 2011. (SRS, 2012) However, the anticipated objective has not been reached. A phenomenon of Laffer curve has been observed – excise tax revenues from alcohol are declining along with the rate increase. (Strateičuks *et al*, 2011) Moreover, official alcohol market (excluding beer) has shown a significant decline estimated at -37% by volume in 2010 to pre-recession level of 2007, -14% CAGR07-11. (IWSR, 2011) This decline among other factors is significantly driven by consumers who down-trade to non-commercial alcohol market.

*Problem.* While both policy makers and industry often use arguments referring to impact of non-commercial alcohol, in fact there is very scarce information on it. Since 2009 unrecorded alcohol consumption has been excluded from official statistics due to complexity of measurement (NHS, 2011), and there are no up-to-date academic studies available. While there had been few addiction or alcohol related studies over the last decade in Latvia (Sieroslawski *et al*, 2010), none of them was specifically related to non-commercial alcohol market. These factors determine a need for related research required to provide academically proven facts.

*Methodology.* Our research strives to fill the gap by applying internationally proven ICAP methodology to explore and explain the mechanisms of non-commercial alcohol market, consumer motivators and consumption patterns in that. The novelty of the approach lies in (i) complex view – our broad quantitative survey covers not only general population but also the immediate regular consumers and producers/distributors of non-commercial alcohol; (ii) Social Values research method detailed further in this paper is applied to assist in better understanding of motivational constructs behind the choice of illegal alternatives over legal product.

*Objectives.* The ultimate goal of the study is to provide evidence-based insights that will help policy makers (i) to develop a proper and effective taxation policy to increase tax revenues derived from alcohol industry; (ii) to control social risks and minimize harmful effect of non-commercial alcohol on public health. Apart from that, legal industry marketers might benefit from these insights while developing propositions and communication targeted at down-trading consumers with propensity to prefer non-commercial alcohol.

## Socio-Economic Context of Alcohol Consumption and Regulation

Purposeful production of alcoholic beverages for consumption extends back in history to Neolithic period with references as old as 8,500BC or even beyond that. (McGovern, 2007) The perception and attitudes towards the consumption of alcohol have been quite controversial during the whole history of civilization, ranging from strong association with negative and anti-social aspects to being justified as acceptable social activity. This has been well covered by literature including numerous extensive reviews and studies, such as commonly referred SIRC (1998), Hanson (1995), Douglas (1991). Notably, this varies remarkably depending on the social, cultural and religious context and norms of particular society. (SIRC, 1998) In most societies alcohol consumption is considered “a social act and, as such, it is embedded in context of values, attitudes, and other norms”. (Heath, 1986) It is widely acknowledged that drinking patterns and the effects of consumption largely differ from culture to culture. (Grant & Litvak, 1998; SIRC, 1998)

As social activities, in most of societies both alcohol consumption and related human behaviour are subjects to self-imposed social rules. These rules to large extent regulate socially acceptable nature of consumption, nowadays complemented and enforced by normative boundaries such as legal drinking age, trade and marketing restrictions, blood alcohol concentration limits etc. Not ignoring harmful effects of alcohol consumption, still the consumption across cultures and ages demonstrates a remarkable and sustainable persistence – i.e. alcoholic beverages as products have always had a certain demand. At the same time, attempts of prohibition had been by large non-effective apart from religious bans in cultures or territories under a strong influence of specific alcohol-prohibiting religion, e.g. Islam. Positive vs. adverse effects of strict prohibition policies have been a matter of debate, and most probably will always be. United States Alcohol Prohibition in 1919-1933 had been one of the most remarkable socio-economic experiments in this respect. Irrespectively of a certain positive effects related to some aspects of public health, the prohibition had short-term and negligible impact on consumption levels. (e.g. Miron, 1997; Vick & Rhoades, 2010) Alcohol as any of goods, has a certain level of demand which is being satisfied by consumers in one or another form – if limitations to satisfy the demand within legal framework exist, this often gets done outside it. These alternatives are not limited by illicit alcohol only, but also might stimulate substitution of unavailable alcohol with other intoxicative substances (e.g. drugs or alcohol surrogate products). As well, enforcing regulation to limit access to demanded alcoholic beverages might have a variety of negative adverse effects that have to be considered before implementation of these policies. The adverse effects observed are ranging from growth of drug consumption (Di Nardo & Lemieux, 1992) and drug related crime (Conlin *et al.*, 2005), cross-border binge drinking travel (Clapp *et al.*, 2001), increase in drink-driving and number of road traffic accidents (Lovenheim & Slemrod, 2010) or might have boomerang effect related to consumer reactions to intervention (Ringold, 2002). At the same time, these opinions might be considered as case-related; and discussion is open as studies with opposite findings exist, e.g. positive impact of stricter alcohol policies on highway mortality rates (Ruhm, 1996; Saffer & Grossman, 2007) or drug consumption (Pacula, 1998). However, the findings of the both camps lead to a common position that there is enough evidence that alcohol policies might exert a significant impact on a variety of other socio-economic aspects. Therefore careful policy planning is required to avoid unexpected negative impact of good intended policies. Nowadays, the preference in alcohol policies has shifted from total prohibition to integrative approach that seeks a right balance for policies to minimize the harmful influence associated with drinking and maximize the expected consumer utility for individuals and benefits for the general society. (ICAP, 2011)

From economic perspective, alcohol production and trade might have a significant impact on national economies which is a combination of different factors where some of the most important are: (i) industry output related tax revenues (e.g. sales/VAT and excise taxes); (ii) production unrelated tax revenues (corporate income tax, tax income from employees of industry and tax from related supply chain industries); (iii) direct and indirect employment ; (iv) private consumption and related tax revenues from the employed. While these impact factors vary significantly from country to country, in industrialized countries beverage industry accounts for 2% of total manufacturing value added while in developing even twice more. Same variable yet significant importance exists regarding employment, e.g. in EU direct employment by the industry reaching 2% from total with specific markets even higher – such as France with 10% due to dominance of labor intensive wine production. (Room & Jernigan, 2000)

However the negative socio-economic of alcohol is also very high due to harm to the health of the population resulting in lost total life years and related potential contribution to economy combined with extra burden on social budget. Alcohol-related death and disability accounted 3.8% of total burden of disease globally in 2004 (WHO, 2011), ranking it as the third leading global risk factor. Total social cost (healthcare,

law enforcement and other costs combined) varies significantly across countries. However different sources (e.g. WHO, 2011; IAS, 2007) refer to similar estimates at 1-3% GDP for different periods 1990-2006.

Given overview is aimed at providing broad generalized picture on alcohol consumption and its socio-economic impact. This is important for emphasizing the significance of well-planned alcohol policies. Due to high impact of alcohol industry and consumption they might affect a large proportion of our society – both consumers of alcohol and the rest of the population. However, our purpose is not to evaluate all these social factors and applied policies but focus on specific aspect – non-commercial alcohol.

### Unrecorded Alcohol Consumption in the World

According to World Health Organization (WHO), the share of past-year abstainers in population aged 15+ was estimated at 58.2% in total population based on surveys 1993-2009 (WHO, 2011) with a significant differences by geographic regions and sex. At current estimated world population structure assuming abstention rates stable, the number of alcohol consumers is estimated to reach 2.0-2.2 billion people.

A significant share of alcohol produced, traded and consumed is not reflected in official statistics as it is circumventing the traditional systems of government control and taxation. WHO refers to it as “unrecorded alcohol”. This scope in a country includes consumption of homemade, informally produced or smuggled alcohol, trans-national trade and tourism consumption accounted under different jurisdiction and medical/industrial use alcohol. (WHO, 2011) Exact estimate of the actual unrecorded consumption in the world represents a significant issue; thus no country has complete records of alcohol consumption. (Nordlund & Österberg, 2000; WHO, 2004; WHO, 2011) Most of the assumptions regarding this part of consumption are based on data aggregation from different sources and consumer surveys.

Worldwide per capita consumption of alcoholic beverages had reached 6.13 litres of pure alcohol in 2005 with a relatively stable trend since 90’s and a remarkable share of 28.3% or 1.76 litres per capita unrecorded alcohol consumption. 2001-2005 five year trend estimates for recorded adult per capita consumption shows a stability of consumption in countries with 74.9% world’s population and 23.5% population exhibiting increasing trend mostly driven by Africa and South-East Asia. (WHO, 2011) However, a change in recorded consumption might be the effect of very different causes ranging from straight increase in consumption levels or improved regulation and statistics to specific factors like transition from unrecorded to recorded consumption, changes in regulation that facilitate consumption or international trade. There is no simple single-factor explanation for this. WHO admits also significant regional differences in proportion between recorded and unrecorded consumption (Table 1).

**Table 1.** Adult per capita (APC) consumption, litres of pure alcohol in 2005 by regions (WHO, 2011)

WHO Region	Total APC	Recorded APC	Unrecorded APC	Proportion of unrecorded APC, %
Africa	6.15	4.22	1.93	31.4
Americas	8.67	6.66	2.01	23.1
Eastern Mediterranean	0.65	0.29	0.36	56.2
Europe	12.18	9.51	2.67	21.9
South-East Asia	2.20	0.68	1.52	69.0
Western Pacific	6.23	4.60	1.63	26.2
<b>World</b>	<b>6.13</b>	<b>4.37</b>	<b>1.76</b>	<b>28.7</b>

Traditionally higher total consumption is observed in Europe and Americas while much lower in Eastern Mediterranean and South-East Asia regions which might be strongly related to culture and religion related factors. Despite high total APC consumption, proportion of unrecorded consumption in these regions is lower which suggests negative relationship between income of population by regions and proportion of unrecorded consumption. This is supported by finding that both total and recorded APC is higher in countries representing higher income group (Table 2). That suggests an economic motive behind this consumption pattern – the higher is income level, the lower share of unrecorded alcohol consumption is.

The correlation between economic conditions, lower standard of living and higher propensity for unrecorded alcohol consumption is also noted by other studies. At the same time, studies note that often the unrecorded alcohol consumption observed also is driven by local socio-cultural traditions and values. (e.g. McKee *et al*, 2005; WHO, 2005; Lang *et al*, 2006; Adelekan *et al*, 2008)

**Table 2.** Adult per capita (APC) consumption, litres of pure alcohol in 2005 by income group (*WHO, 2011*)

Income group	Total APC	Recorded APC	Unrecorded APC	Proportion of unrecorded APC, %
Low	2.97	1.55	1.42	47.9
Lower middle	4.41	2.70	1.71	38.9
Upper middle	9.46	6.58	2.88	30.5
High	10.55	9.37	1.18	11.2
<b>World</b>	<b>6.13</b>	<b>4.37</b>	<b>1.76</b>	<b>28.7</b>

Taking into account the high socio-economic impact of alcohol and relatively high share of unrecorded consumption, it is important to understand the nature of this shadow economy segment in order to develop effective policies. However, the magnitude and complexity of the issue results in scarce and scattered research – mostly *ad hoc* and applying non-standardized methodologies. (ICAP, 2010; Sieroslowski *et al*, 2010) Global or wide regions based view, such as WHO statistics, does not provide a clear view on national level due to high diversity among countries with different economic development and cultural traditions. Attempts to use global datasets is usually limited by scale, thus most of data might be outdated. For instance, WHO in 2011 reports refers to unrecorded consumption data from 2003-2005 while socio-economic conditions have changed remarkably since then during the global economic recession. These changes might be significant, as studies referred before point at the importance of living standard and local traditions. However even national surveys performed suffer from failure to recruit the actual consumers of unrecorded alcohol. (ICAP, 2010)

### Latvia in Recession: Growing Threat of Non-commercial Alcohol

Latvia has been remarkably hit by economic recession since 2008. Real GDP growth rate has been negative since then: -3.3% to prior year in 2008, -17.7% in 2009 and -0.3% in 2010. First growth is shown just in 2011 with estimate of +5.3% to prior year. (CDS, 2012) These trends had also a negative impact on state fiscal revenues. As one of the means to mitigate this impact, three incremental increases of excise tax rate on strong alcohol (i.e. >22% alcohol by volume) were applied resulting in effective increase by +49% combined – from EUR 896 per 100 litres of pure alcohol in 2008 to EUR 1 337 from June 2011. (SRS, 2012) At the same time, state excise tax revenues from alcohol beverages (excluding beer) declined by -8% to prior year in 2009 and 2010 by EUR 19.4m over period, showing a slight recovery in 2011 of +3%. (SRS, 2012)

This is partially explained by a remarkable decline of recorded alcohol market by volume – recorded sales of alcoholic beverages (excluding beer) have declined since 2007 by -37% in 2010 or -14% CAGR<sub>07-10</sub>. (IWSR, 2011) At the same time, official statistics on household consumption show slightly growing share of alcohol and tobacco in total household consumption at level of 3.7% in 2010 vs 3.0% in 2007. APC of recorded alcohol has remarkably decline in 2010 to prior year from 11.5 litres of pure alcohol to 7 and retains the same level in 2010. (CDS, 2012)

At the same time, mortality rate from alcohol attributable causes has grown to 36.6 per 100 000 population in 2010 vs. 34.1 in 2009. (NHS, 2011) The actual rate is suspected to be even higher accounting for a remarkable correction to base population size in Latvia followed by 2011 census – 2.08m population at the beginning of 2011 vs. 2.23m population register data (CDS, 2012) for the same period which is extensively used in statistics still in 2011.

Growth of alcohol related mortality and stable share of alcohol in household consumption in a combination with remarkably declining recorded, legal alcohol market and related tax revenues – this suggests that a certain part of consumers have down-traded to unrecorded alcohol. We aim to explore this issue and analyze focusing on unrecorded alcohol consumption patterns from a perspective of motivational construct facilitating it.

### Scope and Methodology of the Study

Within the scope of research we refer to beverages from informal sector as non-commercial alcohol (NCA) with slightly more detailed taxonomy (Table 3) which is in line with methodology used by International Center for Alcohol Policies. (ICAP, 2011) This covers locally relevant forms of beverages while might not represent the full scope of unrecorded consumption due to variety of hidden economy forms.



**Table 3.** Non-commercial alcohol taxonomy of the study

Non-commercial alcohol	
Licit	Illicit
Traditional home beverages within legally defined limit Trans-national trade (taxes paid under other jurisdiction)	Home beverages for commercial distribution over limit Smuggled products Industrially counterfeit products Substitute or refill counterfeit products Surrogate alcohol (medicine, industrial compounds)

The study is based on adapted generic ICAP instrument to assess the nature and extent of the informal alcohol market to assess (i) the volumes of NCA produced/distributed/consumed; (ii) patterns and composition of consumption; (iii) motivational construct behind that. Data collection was performed via quantitative survey in November, 2011 using face to face interviews. The sample covered 3 groups of respondents: (i) 'population': 1040 respondents representatively sampling the general population of Latvia; (ii) 'NCA consumers': 152 regular non-commercial alcohol consumers; (iii) 'hustlers': 50 producers and distributors of illicit non-commercial alcohol.

Part of the study related to attitude and motivation of respondents employed Social Values methodology. (Data Serviss, 2002-2011; Kaže, 2010) Methodology uses a set of 32 most significant universal social values from 64 selected via multi-dimensional scaling as relevant for Latvia population. Values are grouped in 8 domains by similarity and assigned a common descriptive for simpler referencing:

1. Rationalist (e.g. being logical, treating others equal, respecting differences);
2. Traditionalist (e.g. humbleness, good relationship with other people);
3. Peaceful (e.g. inner harmony, honesty, politeness, avoiding conflict situations);
4. Domestic (e.g. family security, thrift, loyalty, health);
5. Profound (e.g. settled personal life, wealth, friendship);
6. Self-centred (e.g. self-respect, self-determination, enjoying life, independence);
7. Ambitious (e.g. fame, influence, authority, exploring new opportunities);
8. Maximalist (e.g. activity, creativity, life-long education, holding ground).

Domains are organized in respect to motivational similarities into 4 dimensions: living for tomorrow vs. today, identity vs. relations, self vs. other, domination vs. adjustment. Any social group, e.g. NCA consumers, will have a certain value profile featuring mean values of importance of a certain value domain for the group. This serves as hands-on tool to compare different social groups and identify core differences regarding their social values. This not only offers the insight which is linked to core beliefs of the group but also enable to manage these attitudes by building proper relevant policies and communication to achieve the desired consumption patterns. Approach has been applied to hidden economy research to interpret behavior and impact of uniform actions by homogeneous groups on economy, e.g. tax evasion (Kaže *et al.*, 2011).

### Findings of the Study

As the scope and size of this paper limit us in thorough review of the extensive research, we focus on core findings describing most significant attitudinal aspects.

#### **1. General population in Latvia has relatively easy access to non-commercial alcohol; and population is tolerant to distribution of NCA**

A large proportion of respondents (n=1040) also admitted having friends or relatives who use non-commercial alcohol, mostly strong spirit drinks – 36% vodka or moonshine, 37% other home brewed strong spirits. This by far exceeds the popularity of lighter alcohol (25% home brewed beer, 42% wine). Different types of surrogate alcohol are less popular, led by medicine spirit (9%). 32% have ever had some kind of personal problems related to alcohol consumption, predominantly health issues (e.g. intoxication) – 22%.

In a perception of general population top reasons why people consume NCA are lower price tag than legal products in retail (78%), availability of NCA after 22:00 - legal time limit for alcohol trade (47%) with other factors falling behind (e.g. 18% referred to higher alcohol contents and higher intoxicative impact). Population would consider purchase of NCA if it is priced at 65-68% (depending on alcohol category) of retail price tag of legal alcohol – the gap is rather narrow to represent a warning regarding potential tax increases which might reflect if remarkable price increase

50% of respondents have ever purchased counterfeit alcohol sold as legal product of well-known brand. 21% claim the purchase was made at chain-operating retailers, 24% - at sole retailers. The reaction of

victims of counterfeit products is rather characteristic for less mature consumer markets – 55% of them still consumed the drink, 29% disposed it, only 2% contacted the brand owner of the legal product however none filed a claim to consumer protection institution.

18% of population admitted that they support production and distribution of NCA which is in line with insights, e.g. 75% of respondents admitted that illicit alcohol is harmful to health and 80% of respondents try to purchase legal alcohol at all the times.

**2. *Most of NCA consumers have long consumption history, they plan their purchases and commit them regularly and mostly from regular suppliers***

Most of NCA consumers (n=152) have long track record – 56% consume NCA for at least 10 years (and half of them – more than 15 years). While the typical alcohol consumption is skewed toward strong spirits, the consumer basket contains both legal and NCA.

On average, NCA consumer spends EUR 47 on alcohol a month (contrary to EUR 17 in general population). 54% of respondents have purchased raw spirit during the prior 2 year period, and 59% of them buy it regularly – more at least once a month. 59% also purchase it at fixed location distributor while 24% from hustler operating at general food/commodity marketplace. 34% of NCA consumers admit that they plan their purchase in advance. 70% learned about particular place to buy NCA from friends/relatives while 25% admitted buying NCA at “close to home outlets which are well-known to everybody in neighborhood”. 76% claimed they do not need any pre-notice as NCA is always available there – this is an indirect evidence of limited capabilities of law enforcement bodies to fight hustlers.

Reasons to prefer NCA are quite in line with perception of general population – 72% of NCA consumers are driven by cheaper price and 36% by availability after 22:00. However few more factors are worth the attention – 46% admitted that they consume NCA because consume them while affiliating with somebody who is NCA consumer; 16% admitted better taste qualities of NCA (vs. 11% in general population). High support to production and distribution of NCA in this group is not a surprise; however the support reached scaring 87%. Current NCA consumers have lower propensity to switch back to legal market – on average they would consider purchase of legal product if its retail price will decline by 47.9%.

**3. *Hustlers often operate their business as main source of income, based on regular clientele and with a little of fear of being prosecuted***

Interviews with NCA producers and distributors (n=50) revealed that 40% of them operate their business as the main source of income, and 58% are in business for at least 10 years. 80% operate the business at their residential address, 22% do home delivery to their customers. They particularly focus on strong spirits (72% offer distilled spirits/ moonshine, 26% spirit based infusions and 28% home brewed wine type beverages). Key motivators to start the production/distribution was low income (64%) followed by a statement that own product is less harmful to health (36%).

Most of them have a regular consumer base – 66% of consumers are personally known network, 62% grow their networks using mouth-to-mouth information. 62% describe their consumers as returning customers. Over the past 12 month, 54% have had stable clientele while 26% managed to grow it. 16% have underage population in their clientele, yet only 4% have it as the core of business.

20% of hustlers distribute smuggled alcohol which represents around 16% of total volume distributed by them. 16% of them have ever made arrangements with representatives of law enforcement bodies about ‘winking at their activities’. Only 40% admitted that possible penalties are adequate while 32% were confident that they have all means to avoid being punished. According to respondents, legal alcohol has to decline in price on average by 62.6% to render their business unprofitable.

**4. *High level comparative analysis reveals higher importance of Self-centred values and lower of Domestic values in NCA users than in general population***

Most of the mean importance of social values among NCA consumers and general population correspond; there are few value domains with statistically significant differences. NCA consumers as a social group are more driven by Self-centred values – the mean importance of the domain is 8.8% vs 6.2% in population. On other hand Domestic values are much less important for NCA consumers – mean importance of 19.3% is remarkably below 22.2% in general population, particularly driven by lower importance of such values as loyalty and devotion to family. While a deeper social value analysis is required across different demographic segments, these differences are significant enough to be applicable in development of communication messages by policy makers, non-governmental organizations (NGO) or legal industry in their attempts to fight and prevent use of NCA.

## Conclusions and Suggestions

Insights suggest that general availability of NCA is significant problem: NCA is perceived as a norm in population, even somewhat favored by certain groups. Despite of some awareness of harmful influence of NCA, population tolerates its distribution and consumption. This might be changed via information and prevention communication programs in collaboration between policy makers, NGO and legal industry. Such communication activities have to be based on relevant social values to build effective messages. While usually used Domestic values might be relevant for general population – they facilitate only some prevention of entering NCA consumption. More aggressive messages exposed to Self-centred values might be more effective in changing the perception and winning back current NCA users.

Another worrying aspect is ineffectiveness of law enforcement institutions in limiting availability of NCA – the sustainability of both hustlers' business and NCA consumers' patterns is one of the indications. Priority has to be given and required technical support and budget allocated to law enforcement bodies to increase the effectiveness. Penalty system has to be adjusted where feasible to stop illegal business – e.g. symbolic fines replaced by public work that would temporary suspend illegal activities and have higher impact on hustlers' revenues.

Currently price tag is the dominating motivator to choose NCA over legal product. As the gap for population to switch to NCA is by far lower than for current NCA consumers to up-trade or hustlers exit business combined with vast availability of NCA, any intervention (e.g. increase of excise tax or legal drinking age) is not advised, and any moves by policy makers have to be carefully considered and thoroughly discussed with social partners and experts.

As the limitations of the paper do not allow in-depth discussion on all aspects of NCA, a further project work and analysis is underway with more results to be published and shared with policy makers.

## Acknowledgments

This work has been supported by the European Social Fund within the project «Support for Doctoral Studies at University of Latvia». The authors also express their gratitude to European Forum for Responsible Drinking and International Center for Alcohol Policies for their support.

## References

1. Adelekan, M., Razvodovsky, Y., Liyanage, U, & Ndetei, D. (2008). Noncommercial alcohol in three regions. ICAP Review 3. Washington, DC: International Center for Alcohol Policies. 39pp.
2. CDS (2012). Central Department of Statistics of Latvia. Databases of economic indicators. Available online: <http://www.csb.gov.lv>, accessed 05.03.2012.
3. Clapp, J., Voas, R., & Lange, J. (2001). Cross-border college drinking. *Journ. of Safety Res.*, Vol. 32, 299-307.
4. Conlin, M., Dickert-Conlin, S., & Pepper, J. (2005). The Effect of Alcohol Prohibition on Illicit-Drug-Related Crimes. *Journal of Law and Economics*, Vol. 48, Iss. 1, 215-234.
5. Data Serviss (2002-2011). Social Values: toolkit and annual value surveys of Latvian population. Raw data.
6. Di Nardo, J., & Lemieux, T. (1992). Alcohol, Marijuana, and American Youth: the Unintended Consequences of Government Regulation. National Bureau of Economic Research, Working Paper No. 4212.
7. Douglas, M. (ed.) (1991). *Constructive Drinking: Perspectives on Drink from Anthropology*. MSH Series: International Commission on the Anthropology of Food. Cambridge: Cambridge University Press. 301pp.
8. Grant, M., & Litvak, J. (eds.). (1997). *Drinking Patterns and Their Consequences*. Washington, DC: Taylor & Francis. 352pp.
9. Hanson, D. (1995). *Preventing Alcohol Abuse: Alcohol, Culture and Control*. Westport, CT: Praeger. 160pp.
10. Heath, D. (1986). Drinking and Drunkenness in Transcultural Perspective: Part II. *Transcultural Psychiatric Research Review*, Vol. 23, 103-126.
11. IAS (2007). Institute of Alcohol Studies. IAS Factsheet: Economic Costs and Benefits. Cambridgeshire: IAS.
12. ICAP (2010). *Noncommercial Alcohol: Understanding the Informal Market*. Washington, DC: International Center for Alcohol Policies. Available online: <http://www.icap.org/PolicyIssues/NoncommercialAlcohol>, accessed 28.09.2011.
13. ICAP (2011). International Center for Alcohol Policies. *ICAP Blue Book: Practical Guides for Alcohol Policy and Prevention Approaches*. Washington, DC: International Center for Alcohol Policies. Available online: <http://icap.org/PolicyTools/ICAPBlueBook/tabid/90/Default.aspx>, accessed 28.09.2011.

14. IWSR (2011). Alcohol sales statistics from International Wine and Spirits Research online database. Available online <http://www.iwsronline.com/>, accessed 12.12.2011.
15. Kaže, V. (2010). Quantitative Approach for Measuring the Impact of Consumer Values on Purchasing Behaviour. In Lechman, E. (ed.) *Enterprise in Modern Economy*. Gdansk University of Technology, 100-112.
16. Kaže, V., Škapars, R., & Bolinskis, G. (2011). Consumer Social Values Behind the Grey Economy. *Intellectual Economics*, Vol. 5, No. 3(11), 416-433.
17. Lang, K, Väli, M, Szücs, S., Anady, R., & McKee, M. (2006). The composition of surrogate and illegal alcohol products in Estonia. *Alcohol Alcohol*, Vol. 41, 446-450.
18. Lovenheim, M., & Slemrod, J. (2010). The fatal toll of driving to drink: the effect of minimum legal drinking age evasion on traffic fatalities. *Journal of Health Economics*, Vol. 29, 62-77.
19. McGovern, P. (2007). *Ancient Wine: The Search for the Origins of Viniculture*. Princeton, NJ: Princeton University Press. 400pp.
20. McKee, M., Szücs, S., Sárváry, A., Adany, R., Kiryanov, N., Saburova, L., Tomkins, S., Andreev, E., & Leon, D. (2005). The composition of surrogate alcohols consumed in Russia. *ACER*, Vol. 29, 1884-1888.
21. Miron, J. (1997). The Effect of Alcohol Prohibition on Alcohol Consumption. NBER Paper No. 7130, 39pp.
22. NHS (2011). National Health Service of Latvia. Report on Availability and Use of Addictive Substances in Latvia. Riga: NVD.
23. Nordlund, S., & Österberg, E. (2000). Unrecorded alcohol consumption: its economics and its effects on alcohol control in the Nordic countries. *Addiction*, 95 (Supplement 4), 551-564.
24. Pacula, R. (1998). Does increasing the beer tax reduce marijuana consumption? *Journal of Health Economics*, Vol. 17, 557-585.
25. Ringold, D. (2002). Boomerang Effects in Response to Public Health Interventions: Some Unintended Consequences in the Alcoholic Beverage Market. *Journal of Consumer Policy*, Vol. 25, 27-63.
26. Room, R., Jernigan, D. (2000). The Ambiguous Role of Alcohol in Economic and Social Development. *Addiction*, Vol. 95, Suppl. 4, 523-535.
27. Royce, J. (1986). Sin or Solace? Religious Views on Alcohol and Alcoholism. In Watts, T. (ed.) *Social Thought on Alcoholism: A Comprehensive Review*. Malabar, FL: Krieger Pub Co, 53-56.
28. Ruhm, C. (1996). Alcohol Policies and Highway Vehicle Fatalities. *J. of Health Economics*, Vol. 15, 435-454.
29. Saffer, H., & Grossman, M. (2007). Drinking Age Laws and Highway Mortality Rates: Cause and Effect. *Economic Inquiry*, Vol. 25, Iss. 3, 403-417.
30. Sierosławski, J., Foster, J., Moskalewicz, J. et al. (2010). Survey of European drinking surveys. Alcohol survey experiences of 22 European countries. Report to EC Executive Agency for Health and Consumers SMART project. Available online: <http://www.alcsmart.ipin.edu.pl/>, accessed 21.11.2011.
31. SIRC (1998). The Social Issues Research Centre. Social and Cultural Aspects of Drinking. A report to the European Commission, March 1998. Oxford: SIRC. 89pp.
32. SRS (2012). Excise Goods Department of State Revenue Service of Latvia. Report on Alcohol Turnover in 2011. Available online <http://www.vid.gov.lv/default.aspx?tabid=11&id=402&hl=1>, accessed 03.02.2012.
33. Strateičuks, A., Kaže V., & Fadejeva D. (2011). Excise Tax Policy for Alcohol and Cigarettes in Latvia, Its Impact on State Revenues and the Laffer Curve. *Current Issues in Economic and Management Sciences: The Proceedings of International Conference 10-12.11.2011*. Riga: University of Latvia, 603-612.
34. Vick, D., & Rhoades, E. (2010). *Drugs and Alcohol in the 21st Century: Theory, Behavior, and Policy*. Jones & Bartlett Learning. 400pp.
35. WHO (2004). World Health Organization. Global Status Report on Alcohol and Health 2004. Available online: [http://www.who.int/substance\\_abuse/publications/](http://www.who.int/substance_abuse/publications/), accessed 28.09.2011.
36. WHO (2005). World Health Organization. Alcohol, gender and drinking problems: Perspectives from Low and Middle Income Countries, Geneva, World Health Organisation.
37. WHO (2011). World Health Organization. Global Status Report on Alcohol and Health 2011. Available online: [http://www.who.int/substance\\_abuse/publications/global\\_alcohol\\_report/en/index.html](http://www.who.int/substance_abuse/publications/global_alcohol_report/en/index.html), accessed 28.09.2011.