International Journal of Drug Policy 22 (2011) 341–352

Contents lists available at ScienceDirect

International Journal of Drug Policy

journal homepage: www.elsevier.com/locate/drugpo

Research paper

The business cycle and drug use in Australia: Evidence from repeated cross-sections of individual level data

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ARTICLE INFO

Article history:
Received 5 October 2010
Received in revised form 11 March 2011
Accepted 22 March 2011

Keywords:
Drinking
Cannabis use
Business cycle

ABSTRACT

Background: This paper examined the implications of the business cycle for cannabis and alcohol use. What little we know about cannabis use suggests that young Americans (teenagers and adults in their early 20s) seem more inclined to use illicit drugs and to use them more frequently with rises in the unemployment rate. In contrast, a more fulsome alcohol literature suggests that participation in drinking is unaffected by the business cycle. Heavy drinkers drink less during economic downturns and their reduced use counteracts the fact that light drinkers might drink a little more.
Method: Using individual level data from repeated cross-sections of Australia's National Drug Strategy Household Survey (NDSHS), spanning 1991–2007, this study examined the relationship between cannabis and alcohol use of Australians aged 14–49 years and the unemployment rate and real income per capita, two indicators of the business cycle.
Results: Australians in their late 20s, 30s and 40s drink less frequently during economic downturns. If unemployment rate rises are accompanied by falls in income per capita, younger Australians will also drink less frequently. Recent participation in cannabis use (within the last year) increases with falls in income per capita regardless of age, although the increase is less marked for young people (14–24 years). Whereas the participation rate of people aged 25–49 years also falls with rising unemployment rates, the participation of younger people increases. Cannabis users younger than 35 will use more frequently as the unemployment rate rises. In contrast, older Australians will use less frequently.
Conclusion: Australia's recent economic slowdown has been characterised by rising unemployment rates without accompanying falls in income per capita. Based on our findings this slowdown should have encouraged young Australians aged 14–24 years to both drink and use cannabis more frequently. The slowdown would have had little impact on the frequency of drinking of older Australians. However it should have discouraged older Australians from using cannabis, and encouraged people in their late 30s and 40s to use less frequently, whilst encouraging those aged 25–34 years to use more frequently.

Introduction

The implications of the global financial crisis continue to reverberate throughout the world. Even people untouched by the weakening labour market have to adjust to reductions in wealth and asset holdings. Scant attention has been paid to the impact of the business cycle on illicit drug use. What little we know suggests that teenagers might use illicit drugs more frequently with extended periods of unemployment (Fergusson, Horwood, & Woodward, 2001; Hammer, 1992; Peck & Plant, 1986). Young Americans (teenagers and adults in their early 20s) seem more inclined to use both illicit drugs and alcohol and to use them more frequently with rises in the unemployment rate (Arkes, 2007, 2011). In contrast the more substantial drinking and business cycle literature suggests that, although the tendency to drink is unrelated to the business cycle, heavy drinkers drink less during economic down-turns (for example Dee, 2001; Johansson, Bockerman, Prattala, & Uutela, 2006; Ruhm & Black, 2002).

This paper presents findings from the first Australian study to determine the implications of the business cycle for cannabis and alcohol use amongst people aged 14–49 and the first international study to consider illicit drug use of people over the age of 24. The National Drug Strategy Household Survey (NDSHS) is the only large-scale representative data set in Australia that measures alcohol and illicit drug use. We use pooled data from seven waves of the NDSHS, covering the period 1991–2007, control for year and state fixed effects and estimate the relationship between drug use and the unemployment rate and real income per capita using within state variation over time. Our findings corroborate the alcohol literature, by showing that past year frequency of drinking is procyclical,

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doi:10.1016/j.drugpo.2011.03.006

although we can only be sure that young people (14–24 years) drink less frequently in economic downturns if income per capita falls. Like Arkes (2007, 2011), we find that economic downturns boost the number of young people using cannabis (again, only if income per capita falls) and, regardless of income per capita, increases their frequency of use. Faced with rising unemployment rates, unaccompanied by falling real income per capita, older Australians are discouraged from using cannabis. Regardless of income per capita people aged 35–49 years use less frequently during downturns whilst those aged 25–34 years use a little more frequently.

The literature linking drug use with the business cycle, be it alcohol or illicit drug use, views the causal pathways through two main lenses, psychological and economic (see Ruhm & Black, 2002 for a more detailed discussion). During economic slowdowns the ranks of the unemployed grow and workers tend to feel less secure about their jobs. Actual job loss and the fear of job loss produce stress, anxiety and psychological discomfort. One option is to self-medicate with drugs. On the other hand a well-established literature links jobs themselves with stress (Karasek, 1989) and it is possible that the demands of paid work increase during economic upturn, inducing stress and self-medication amongst workers, particularly those with little control over how they do their jobs.

The income effect is one economics based mechanism through which the business cycle might impact on cannabis and alcohol use. The incomes of the newly unemployed fall during economic downturns and even those who keep their jobs may work fewer hours and earn less. Assuming that both alcohol and cannabis are normal goods, consumption of both will be stymied by the reduction in income. A second pathway is conceptualised in terms of the opportunity cost of drug use, whereby the drug use decision involves weighing up the benefits of drug use against the benefits that would accrue if the drug was not used. The literature assumes that drug use can impinge on a person's ability to earn income in the labour market, both by reducing productivity when working and hampering the ability to find work. During an economic slowdown the opportunity cost for unemployed people will fall as the chance of finding work is diminished, an insight confirmed by Costa Storti, De Grauwe, Sabadash, and Montanari (2011). In contrast, the opportunity cost of drug use for an employed person could rise during economic slowdown, given that there is more chance of losing one's job and less opportunity to find alternative work. A third economics based framework for illicit drug use focuses on availability, positing that economic down-turns will see rising numbers of illicit drug dealers, as the young, in particular, are encouraged to look to the illegal economy for work (Arkes, 2007). Consequent on increased availability, drug use could rise, particularly amongst the young whose social networks are possibly better linked in to drug dealers.

Both the income and opportunity cost effects work in the same direction for employed people, suggesting that their cannabis and alcohol use should fall during economic slowdowns although we need to be mindful of the possibility that stress induced self-medication could rise. Unemployed people, who were unemployed prior to the slowdown, could be encouraged to use more of both drugs by the lower opportunity cost of use, although an expansion in use will be hampered by their limited income. On top of the declining opportunity cost of use, the newly unemployed could also be motivated to increase use to deal with the stress of job loss. Their ability to act on these intentions is hampered by their loss of income.

The hypothesized mechanisms have countervailing effects and that the effects operate differently in different segments of the population, making prediction about the relationship between drug use and business cycle an almost impossible task, especially at the population level. It is very much an empirical question.

Alcohol consumption of adults appears to be pro-cyclical according to US and Scandinavian empirical studies, some of which are based on aggregate data and some on individual level data. Alcohol use increases when the economy is stronger and decreases when it contracts (Dee, 2001; Freeman, 1999, 2000; Johansson et al., 2006; Kruger & Svensson, 2008; Ruhm, 1995; Ruhm & Black, 2002). Participation in drinking is unaffected by the business cycle. Heavy drinkers drink less during economic down-turns and their reduced use counteracts the fact that light drinkers might drink a little more (Dee, 2001; Ruhm & Black, 2002). In a bid to tease apart the causal pathways, some studies have distinguished between the effects of the unemployment rate and income per capita (Dee, 2001; Ruhm, 1995; Ruhm & Black, 2002). Whilst it is clear that drinking is procyclical in relation to the unemployment rate, there is no consensus on whether drinking is procyclical in relation to income per capita. One study found that the reduction in alcohol consumption was greater amongst people who lost their job compared with those who kept their job (Ruhm & Black, 2002).

A series of cohort analyses of the experiences of unemployed youth supports the proposition that extended periods of unemployment lead to increased illicit drug use. There is no clear evidence, however, of an impact on rates of initiation (Fergusson et al., 2001; Hammer, 1992; Peck & Plant, 1986). Analyses of young Americans (teenagers and people in their early 20s), using longitudinal data on individual level drug use and regional indicators of the unemployment rate, provide supporting evidence for countercyclical drug use (Arkes, 2007, 2011). The Arkes studies find that young people's alcohol use is also countercyclical, a finding contradicted by a comparable study of Swedish youth (Svensson & Hagquist, 2009). Arkes' investigation of the number of dealers supports his hypothesis that dealing rises during down-turns.

We aim to determine the impact of two indicators of the business cycle, the unemployment rate and real income per capita, on individual level alcohol and cannabis use. Without the data capacity to differentiate between people on the basis of changes to their income and paid employment status the purpose of our research was to surface the population-level relationships and determine whether these relationships held for both men and women and people of different ages.

Like the alcohol research (Dee, 2001; Ruhm & Black, 2002), this study makes use of a series of repeated cross-sectional surveys from one country, in this case Australia. Unlike the alcohol studies, which use annual cross sectional data, the NDSHS takes place every two to three years. The relationship of interest is explored via comparison of over-time changes in a state's unemployment rate and income per capita with drug use of individuals living in that state. The over-time element of the studies allows researchers to control for the possibility that the relationship between a state's economic situation and alcohol use is entangled with unobserved state-specific and time invariant determinants of alcohol use. Like this literature, we take a reduced form perspective. The observed alcohol and cannabis use is the outcome of the interaction between supply and demand. By controlling for Australia-wide effects specific to each year of the survey the approach removes Australia-wide changes in supply. However, any within state changes in supply remain. This is a limitation of the study we are willing to accept, especially in the face of the inherent difficulty in measuring the supply of illicit drugs.

Methods

Data

This study used individual level data on illicit drug use pooled from seven waves of the Australia's National Drug Strategy Household Survey (NDSHS) (the 1991, 1993, 1995, 1998, 2001, 2004 and 2007 waves). The NDSHS data has been pooled successfully