



Research paper

Illegal drug use and the economic recession—What can we learn from the existing research?

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ABSTRACT

Background: Much research on the use of amphetamine, cocaine and heroin employs individual level data and analyses variations in drug use by factors like personal characteristics, socioeconomic factors, and the social environment. Less attention is given to how these individual responses inter-relate with key macroeconomic variables. From a drug policy perspective however, it is important to also understand the consequences for drug use and drug users of changes in the macroeconomic conditions. As the world is experiencing an economic recession one would like to know whether it will affect the number of drug users and/or consumption frequency and volume amongst established users.

Methods: There are different channels through which a recession could influence drug consumption; here the main focus is on how an economic downturn may influence drug prices and drug users' incomes. We briefly refer to relevant economic theory before reviewing the research literature.

Results: A fall in drug prices and income seem likely. Empirical studies confirm drug users' price responsiveness. Only a few studies have dealt with income elasticity amongst this group.

Conclusion: As the price and the income effect may pull in opposite directions, the full effect on drug use is difficult to predict. Still, it seems likely that an economic downturn of the current magnitude could increase the use of drugs.

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Introduction

One may ask whether illegal drug consumption and the number of users are likely to be affected by an economic recession, a phenomenon characterised by a decrease in factors such as the GDP, employment, household income, investments, business profits and capacity utilisation. The question is interesting, as the prevalence of drug use is a central factor for planning and dimensioning the treatment sector and a vital indicator of the harm caused by drugs to individuals and society. Still, current knowledge of the subject is scarce. Most drug research has employed individual level data and analysed the effects of personal and socioeconomic factors on drug use without paying attention to the macroeconomic factors facing the users.

One recent example, however, explores variations in macroeconomic conditions across US states and young people's use of illicit drugs (Arkes, 2007). In contrast to what might be expected, Arkes finds that weaker economies lead to greater use of cannabis and other illicit drugs by teenagers. As possible explanations for the finding, he suggests that young people in weaker economies

have more time to engage in drug use, and that they could be more inclined to "self-medicate" because of mental stress caused by financial difficulties. Additionally, weaker economies could decrease the opportunity costs of using drugs. He also finds that more teenagers sell drugs in weaker economies, which suggests that drugs then are more physically available to young people.

Other studies have dealt with the effects of booms and recessions on alcohol use. This literature generally reports evidence for a pro-cyclical alcohol use, which means that overall drinking declines during recessions and increases in times of economic booms (see e.g. Johansson, Böckerman, Prättälä, & Uutela, 2006; Krüger & Svensson, 2010; Mäkelä, 1999). Special drinking patterns, such as binge drinking and drinking in certain subgroups, may not comply with this pattern, however (Dee, 2001; Ruhm & Black, 2002). Although interesting and noteworthy, the transfer value of alcohol studies has some limitations, as user characteristics may differ between the two types of intoxicants and because the effect of a recession on alcohol and drug prices could diverge due to alcohol being a legal, and often heavily taxed, commodity. Separate studies of the effect of macroeconomic conditions on drug consumption are thus required.

Demand for drugs has certain features in common with the demand for other commodities, and the following factors, which will be discussed in more detail below, are important also for

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studying drug consumption: price of the good, price of other commodities, income, and individual tastes and preferences.

Factors frequently emphasised by other disciplines to influence drug use, such as family background, social environment, genetic endowment and peer pressure, are in economic studies taken into account through their effect on tastes and preferences. In empirical modelling, however, such factors are often specified and additional controls are included in the estimations (see e.g. the drug studies reviewed by Pacula, 2010).

Although there are certain similarities, drugs like heroin, amphetamine and cocaine also have, of course, some special characteristics which should be acknowledged when analysing drug use. Most importantly, drugs distinguish themselves from other commodities by the illegality and the addictive properties of the goods (Bretteville-Jensen, 2006). In addition to a possible influence on tastes and preferences for drugs, the illegality is likely to influence the price level of drugs whilst the addictive properties may affect how the consumers respond to price and income changes (see e.g. Grossman, 2005 for an overview of the economic literature with respect to price studies).

In this study the possible effects of an economic downturn on the number of users and consumption of drugs, are discussed. Any influence of the economic recession is thought to be mediated by one or more of the four listed factors. We examine the influence of changes in macroeconomic conditions more theoretically before providing some prospective analyses based on results from previous drug use studies. We start by analysing possible influences on drug prices and the effects of changing prices on the number of users and the extent of use.

The effects of price changes

Data on illegal drug prices

The price of illegal drugs varies extensively across time, place and market levels (World Drug Report, 2009; Fries, Anthony, Cseko, Gaither, & Schulman, 2008). The price is further affected by the quality and quantity of the traded drug (there are large bulk-buy discounts); see e.g. Caulkins and Padman (1993) and Clements (2006). It may also be influenced by the informal relationship between dealer and buyer. For instance, regular users tend to establish long-lasting relationships with dealers and this may increase the prices as many seem to be willing to pay an extra premium for the risk reduction the closer relationship implies (Matrix Knowledge Group, 2007). On the other hand, regular users also tend to have better market knowledge and thus are able to reduce the “lemon problem”, i.e. the information asymmetry between buyers and sellers regarding the quality of the traded good that can be found in different types of markets, including markets for heroin and cocaine (see Reuter & Caulkins, 2004 for a study of the “lemon problem” applied to drug markets). Also, regular users are in a better position of knowing who sells drugs cheaply (Lalander, 2003), which, together with better quality knowledge, may result in lower quality-adjusted price.

Some countries obtain information on prices through undercover police agents buying drugs on the illegal market or through police investigations; others use different types of surveys. All prices used for analyses should ideally be quality adjusted as quality differences may substantially influence the real price of the drug (Caulkins et al., 2004). Unfortunately, when prices are collected through surveys, information on drug quality is usually not available. Price information from undercover sampling, in contrast, has this advantage when samples are sent for chemical analyses. A problem with police buys, however, is that one has no means for ensuring that they are representative of all drug transactions in a

given market. Ideally, one would want police-buys to be frequent, systematic and based on transactions from a heterogeneous sample of dealers, something which is not often the case (Fries et al., 2008).

Although quality-adjusted prices are deemed useful and important, one should bear in mind that at the time of the drug transactions, the drug users themselves do not normally know the true quality of the good. They have few means of acquiring quality knowledge of the purchase, and may base their opinion of a “fair” price on an assumed drug quality, which could stem from sample testing, rumours, information from dealers, other customers, etc. (Caulkins et al., 2004). Drugs are so-called “experienced goods”, i.e. goods for which the quality is unrevealed until after the transaction is completed and the goods are consummated (Caulkins, 2007).

Fig. 1 presents historical data for the US and Europe and shows how the street level prices of opiates and cocaine have developed over the last decade. As the prices are not quality adjusted and are averaged over many local markets, the trends should be taken as rough estimates only. The figure suggests that the price of opiates has fallen both in the US and Europe since 1998. US prices are roughly two times higher than European prices, but the relative difference has become somewhat smaller over the years. The cocaine price curves have a less clear pattern. Again the nominal drug price seems to be higher in the US, but the overall differences are smaller than for opiates. Also, although cocaine prices have fallen on both continents, there has not been a monotonic declining trend in either place. One should note, however, that a quality-adjustment of the prices could change the overall picture somewhat as both drugs seems on average to have higher purity in the US than in most European countries (EMCDDA, 2009; Fries et al., 2008). The wide variation in purity across European countries complicates a comparison of quality-adjusted prices.

The UN has not published a similar price series for amphetamine but data from the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) indicate an increase in amphetamine prices in Europe in 2002–2007 (EMCDDA, 2009).

Will the recession lead to a fall in prices?

Heroin, cocaine and amphetamine are expensive goods. Their illegal status and the enforcement of the drug laws lead to product scarcity, request for risk compensation and inefficient drug production and distribution, all of which contribute to this high price level (Reuter & Kleiman, 1986; Wilson & Stevens, 2008). Here, we briefly discuss whether an economic downturn, directly or indirectly, could affect these factors and cause prices to change.

An economic recession is not expected to affect the legal status of drugs or the fact that most drugs are produced in low-cost countries (World Drug Report, 2009). A global recession could, however, influence local production costs through lower salaries to farmers/producers. Such cost-savings in the production of the raw material are not likely to substantially affect the retail price paid by consumers in Europe, the US or Oceania, however, because production costs normally constitute only a fraction of the final drug price (Pietschmann, 2004). In the case of cocaine, for instance, Caulkins and Reuter (1998) estimated that the farm gate price (the price to farmers before any subsequent processing) in Colombia constituted only 1% of the price paid by end-users in the US. Research suggests that end-user prices are more sensitive to intermediation margins (the difference between the retail and the producer prices) in the consuming countries (see e.g. Matrix Knowledge Group, 2007; Reuter & Greenfield, 2001).

Before reaching consumers in developed countries, the drug passes through several links in a distribution chain (see Fig. 2), and the price of drugs at every point is influenced by individual’s risk of arrest and punishment (Caulkins & Reuter, 2010; Reuter & Kleiman,

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