

Jo Apply, David Pyle, Geoff Wootton

## Supporting intervention Ethics in research

**A study by the US Institute for Defense Analysis attempted to look at how intervention close to the source of cocaine influences availability, ignoring whether the threat of drugs justifies the sometimes extreme actions involved. Druglink asked three well-placed UK commentators for their reaction**

**T**he USA's Institute for Defense Analysis' (IDA) report on interventions against drug supply is hard to ignore.<sup>1</sup> Not least because it lends scientific support to armed intervention against trafficking in South America.

But there is greater significance. Such studies claim understanding of what has previously not been comprehended: the effect of high level interventions against drug supply.

This study goes further. It criticises the methodology of research underpinning evidence of the effectiveness of reducing drug demand, such as treatment.

This is too aggressive for many in UK enforcement agencies, who want to be good corporate players within the UK strategy. They have no wish to argue with those who work on demand reduction.

Others in UK agencies and ministries think that the IDA may have some good methodological points in their analysis of drug enforcement. But they do not want those points, or supply reduction in general, to be coloured by militaristic responses fashionable in the US. A point driven home by one example of effectiveness cited by IDA – a Peruvian Air Force 'shoot down' policy against traffickers' planes. Planes that fail to respond to radio messages are shot down, as happened on 17 July this year.<sup>2</sup>

The IDA work raises questions of truth (is the research sound, its conclusions fairly drawn?) and ethics (can it be right to kill, and without due process?).

Three views on the IDA report follow.

**Jo Apply** is an enforcement officer who has used a pseudonym, as they are not confident their superiors would appreciate their views.

**David Pyle** is Head of Drugs Research Unit, RDS, at the Home Office and

**Geoff Wootton** is an operational research consultant within HM Customs & Excise. All opinions are personal and should not be taken to represent the official view of any Government department or agency



'[We] arrive at the conclusion that a source zone interdiction strategy to disrupt significantly the production/transportation of coca base is a cost-effective operational strategy for increasing cocaine prices, and thereby to reducing cocaine use in the United States . . . source zone operations since 1989 have directly affected cocaine markets, resulting in price increases as large as 100 per cent'. IDA Paper P-3219.<sup>1</sup>

## Need for data

### David Pyle

Whether supply-side interventions are more or less (cost) effective than demand reduction is a regular issue in discussions of drugs policy.

The IDA report attempts to answer this by examining US supply-side anti-cocaine policy between 1984 and 1995. It concludes that such interventions did reduce cocaine consumption and supply-side interventions may be more cost-effective than demand reduction. To reach this conclusion they looked at the effect interventions had on the street price of cocaine.

To understand the approach of the IDA study, we need a short detour into economics.

If the street cocaine market is competitive (with many small-scale buyers and sellers), and if the drug supply is reduced (by crop spraying or increased seizures at ports) then provided demand remains unchanged the price will rise. As long as demand is negatively related to price, consumption will fall. The fall in consumption will be greater if demand is more responsive to changes in prices.

This is relevant because it is much easier to observe drug prices than quantities consumed. As there are no sales figures from retailers or household-expenditure surveys, reliable information on expenditure and consumption is not available.

If a price series for the drug is constructed and changes are observed, a relationship between price fluctuations and policy interventions may be evident. A successful intervention will raise the drug's price and, provided demand is not completely unresponsive (inelastic) to price changes, consumption will fall. This is the approach of the IDA study.

The US Drug Enforcement Administration has collected price information through routine street buying since 1980 – about 40,000 undercover purchases. The IDA study used this database (known as STRIDE) to examine the effect of supply side interventions from 1985 onwards.

When the price series is mapped over time it is clear that in general the street price of cocaine over the



The effect of supply-side interventions upon the street price of cocaine is an example of imaginative, heroic estimation

period of observation has declined steadily, but on several occasions the price rose for a short while. The authors argue that each of the upward 'blips' coincide with a supply-side intervention by the US government.

To assess the cost-effectiveness of the interventions the study estimates the cost of the intervention and relates it to the effect on drug consumption. This latter measure is problematic. The effect of the intervention on the drug's price is calculated then how demand is altered by the price increase is estimated.

As the quantity consumed is not observed directly, they use four proxies:

- (i) the number of emergency hospital admissions linked to cocaine
- (ii) the rate of positive cocaine tests among arrestees in the Drug Usage Forecasting programme
- (iii) positive test rates for cocaine among routine samples of US workers
- (iv) cocaine treatment statistics from Treatment Centre data.

Statistical (regression) analysis shows a negative relationship between each of these and the price series for cocaine.

While none is a true measure of cocaine demand, each shows a similar relationship to cocaine price. The study uses the estimates of these relationships to suggest that a one per cent increase in cocaine price would cause a 0.5 per cent reduction in consumption. The effect of supply-side interventions upon the street price of cocaine is an example of

imaginative, heroic estimation.

Two intervention effects on price are constructed. First a total effect of intervention is estimated by fitting a curve to price data between 1985 and 1989 and extrapolating that forward through the 1990s. The 'average' gap between the actual price and extrapolated price is used to estimate the interventions' effects – concluding that interventions kept prices above what they otherwise would have been.

Another estimation looks at the price of cocaine in 1994 (when there were no source interventions) and sees how far, on average, the price has been above this 'floor' in the five years either side (when there were interventions).

These estimates of the price effects of interventions, combined with estimates of the price elasticity of cocaine demand (1 per cent price increase = 0.5 per cent consumption reduction) and the approximate cost of the intervention itself, enable 'back of the envelope' estimation of the costs of reducing cocaine consumption by one per cent.

In principle such estimates could be compared with those for demand reduction programmes.

Precise estimates are probably less important than analysis and assessment of the method. The approach is imaginative and complex, although it would be informative to see more formal analysis of intervention effects.

Inevitably, there is data manipulation and massaging, especially of the cocaine price series. Also, some of the series used to estimate elasticities of demand for cocaine are less than perfect measures of demand.

Inevitably there is a wide margin of error around the estimate of the index of cost-effectiveness (the IDA use \$ million per one per cent reduction in cocaine consumption).

While the authors use sensitivity analysis in estimating price elasticities of demand, there is less of this in the price series itself or the estimate of effects of intervention on prices.

Nevertheless, it seems a competent and professional piece of analysis, which deserves to be replicated in other countries. But, this depends upon the availability of data of the sort routinely collected in the USA ■

## Keeping it global

**Geoff Wootton**

Research like the IDA study is worth development and practical use. Its ideas can help inform UK policy.

The study states:

*'Cocaine prices will rise in the short term as a direct result of interdiction activity.'*

The overall price trend is downward on both sides of the Atlantic. Anecdotal evidence in the UK is that enforcement causes price rises, but this is short term and local.

It is very difficult to measure long-term, large-scale effects of initiatives and more data on UK prices and street availability needs collation. The Americans, the STRIDE database in particular, lead research in this area but even so it is unwise to draw premature conclusions.

*'Price rises have resulted in measurable declines in cocaine usage.'*

It is fairly self-evident that a price rise will reduce demand: but by how much? The suggested 0.5 per cent reduction in consumption for a 1 per cent increase in price is higher (more 'elastic') than some (UK market) estimates. We need to improve understanding of elasticity generally, and any estimate should be viewed with care. The Americans admit that their findings 'are consistent' with this estimate of elasticity, rather than proving it.

The bottom line is that drug prices have been falling. Arguments about price rises and demand falls can only tell so much about the correct long-term policy for supply reduction. The IDA research has greater value in assessing the relative effectiveness of the various initiatives and operations they mention.

One conundrum worth study is that an addict cannot react to price rises in the short term - 'I must have my hit now and I'll fund it through crime if I have to.' Longer term demand may be more flexible. This could imply that for the more addictive drugs (crack for example) a short-term initiative is less likely to have a major impact on demand. The jury is still out on this one.

The IDA suggests that certain initiatives have had a long-term impact on prices. I am not fully convinced, unless those initiatives are ongoing. Prices will be higher



The research should be extended from cocaine to other drugs – particularly heroin

because of enforcement generally, but to attribute this to particular causes is difficult.

The IDA says:

*'Interdiction at source is a relatively cost effective method of reducing misuse.'*

Domestic enforcement, health or education programmes are unlikely to eliminate drug use on their own. But neither is interdiction at source. A rounded approach, drawing on all relevant agencies, seems more likely to succeed.

As to relative cost-efficiency, I remain unconvinced that anyone can reliably separate the effects on the drugs market of near source interdiction, legal penalties, treatment programmes and domestic enforcement.

The IDA argues that smugglers' costs are passed on 'multiplicatively', rather than 'additively', and this is why early interdiction is so effective. The fundamental question is, what are the smugglers' motivations? If

they want a percentage return on their investment the multiplicative argument applies. If they want a certain amount of money, regardless of investment, then the additive argument may apply.

The HM Customs and Excise' view is that 'professional' organisations seek a percentage return, while low level couriers, 'cowboy' operators, and occasional smugglers may seek a fixed return.

Interdiction at source, likely to involve the 'professionals', would seem liable to have a multiplicative effect, but research into supply chain structures is required. The number of people involved has a huge bearing on final price. Drug prices must be monitored at all levels to ensure statements are sensible and fit the types of smuggler being discussed.

The UK supply chain is very different from the United States – costs, profits and rates differ. But the underlying theory is transferable and further research should be carried out in the UK.

The research should be extended from cocaine to other drugs – particularly heroin. The IDA research endorses collaboration with law enforcement agencies in source countries, but the evidence is not sufficient to withdraw from treatment and education. In particular, the data on comparative cost efficiency is incomplete. A global focus must be retained to reduce the problem of drug use ■

## Opening up choices

### Jo Apply

If we are forced to defend everything done in the name of supply reduction the repercussions could be fearful. A 'fight-fire-with-fire' mentality could damage the balance and outcome of international co-operation on drug supply.

There should be a clear separation of morally defensible and indefensible tactics. Analysts and researchers must acknowledge this rather than attempt moral neutrality.

The IDA's study is a welcome attempt to get evidence of effectiveness of drug supply interventions – be that evidence positive or not. But there are deepest reservations about gathering in one analysis all types of near-source intervention, regardless of their ethical nature and legality.

The IDA report says (pp. IV-2 to IV-3): 'Operation 'Support Justice III', initiated in late 1991, focused on suppressing the movement of coca products out of Peru's Huallaga Valley. By early 1992, the Peruvian Air Force aggressively pursued traffickers' aircraft, resulting in a few, but significant, losses. The operation was not sustained; it was concluded in May 1992 because of a diplomatic incident. This action and the subsequent operation suggested that the perception of risk was enough to raise the fees for transportation services from Peru to Columbia, and that these increased fees propagated rapidly throughout the distribution network to raise prices noticeably at all levels of the market.'

A legal debate about the US providing data to the Peruvian Air Force led to a wider withdrawal of US 'assets'. In 1995 the 'shoot down' policy was reinstated. This is one example of US-sponsored action, which, taken as a set, is claimed to have raised cocaine prices on the streets of the USA.

It would not be surprising if this was true – all forms of near source action seem likely to raise traffickers' costs. It is not clear if the IDA has



[The 'shoot down' policy] is one example of US-sponsored action, which . . . is claimed to have raised cocaine prices on the streets of the USA

done the sums *exactly* right, and whether the scale of increase in street price is *quite* as they suggest. There are other questions too.

Are all interventions equally justified? Are all means equally justifiable? Some may instinctively

know the answers. I feel the answer is no, but I am unsure, partly because I do not know what alternatives are available.

Do all interventions against drug supply have to be accepted as a package – from development and trade, to military intervention and psycho-nutter games? Many in enforcement agencies feel completely wrong-footed by the combination.

This sort of study, which seeks to justify as science what should not be justified at all, is a moral offence. Morally justifiable action should be separate from the indefensible.

It would be interesting if the next time the IDA does a study, it does so in ways that open up policy choices, not close them down ■

1. Crane B. Rivolo R. Comfort G., *An empirical examination of counterdrug interdiction program effectiveness*. IDA Paper P-3219. Alexandria, Virginia (USA): Institute for Dense Analysis, 1997.

2. Frost E. M. 'Peru and Ecuador expand war on drugs'. *Jane's Intelligence Review*: September 2000, p6.