

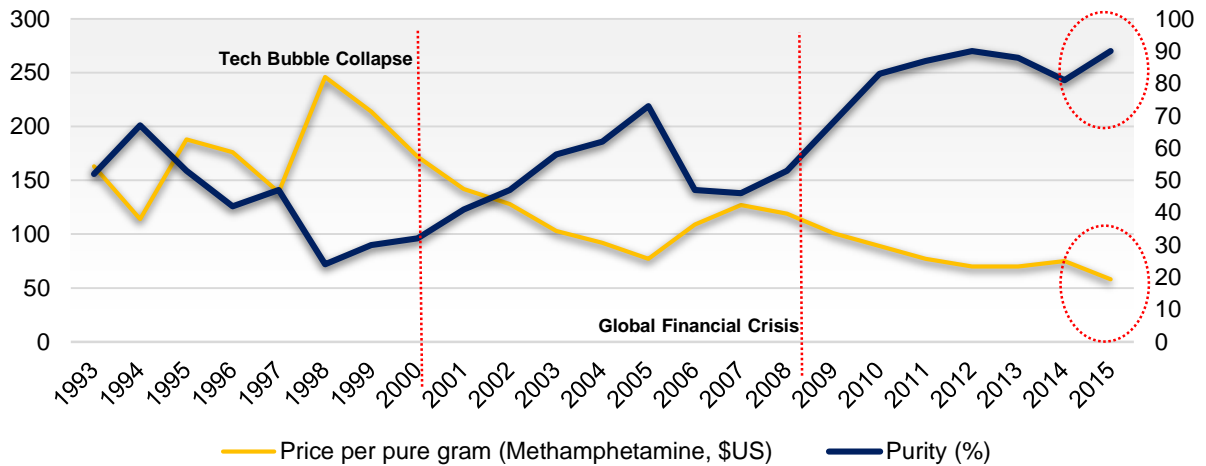


# 'Meth' Price, Purity & Economic Downturns

## When drug pushers become Leading Indicators

6<sup>th</sup> July 2016  
Mike Newman

Fig.1 : Methamphetamine Price vs Purity & Economic shocks



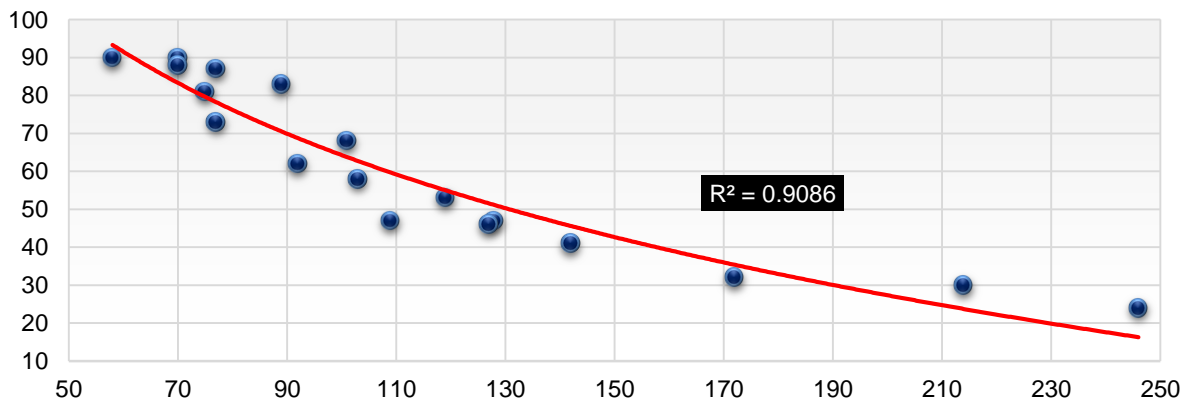
Source: DoJ, UNODC, Custom Products Research

### Methamphetamine prices and purity and the correlation to markets

R-squared of 91%

The US Justice Department (DoJ) and the Drug Enforcement Agency's (DEA) latest report on the trends of methamphetamine prices and purity on the samples they buy from dealers shows some strong correlation. **In the last 20 years, methamphetamine prices (US\$/gram) have shown a 91% R-squared correlation (i.e. very high) to purity.**

Fig.2: Correlation of Methamphetamine Prices (US\$/gram) & Purity (%)



Source: Custom Products Research

Economic growth and purity aligned

Looking at Fig.1 we can see that the tech bubble collapse in 2000 and 2008 saw purity levels rise consistently several years before the crisis set in and the trend continues for a further 5-6 years. The latest data would suggest that the purity is heading back up, usually a sign that the economy is about to [take a 'hit'](#).



*The pusher's dilemma in a weak economy*

It makes sense. When customers are struggling, they need more bang for their buck. If the dealer has any chance of them coming back for more "business" they can't cheat on the quality. Therefore purity is paramount for the cash strapped drug user. When times are good, purity comes off because abusers are more 'flush' with cash and the access to 'hits' is higher. Dealers can afford to scrimp a bit more on quality to expand margins.

*Benefits of meth*

Methamphetamines have become popular due to the ease of consumption, portability and a cheap way to get euphoric feelings. It also increases energy and enhances sexual pleasure. The use of crystal meth has also been associated with coping with depression.

*Meth's history actually began in Japan*

Meth was originally synthesised from ephedrine in 1893 by a Japanese chemist Dr. Nagayoshi Nagai. 26 years later, a pharmacologist by the name of Akira Ogata managed to turn it into crystalline form i.e. crystal meth. When World War II got under way Japanese soldiers (especially kamikaze pilots) were given crystal meth (branded 'Hiropon') which not only kept them awake but reduced hunger. As the war ended, Japan was left with excess supplies of Hiropon. Food supplies were few and returning soldiers added to the shortage. Many soldiers were already on 'Hiropon'. Dainippon Pharmaceuticals (4506) was already an industrial manufacturer of the drug and little was known about the side effects. By 1946, the psychotic effects were becoming widespread and realising an epidemic was on its hands the government banned it in powder and tablet form in 1948 before banning it outright in 1951.

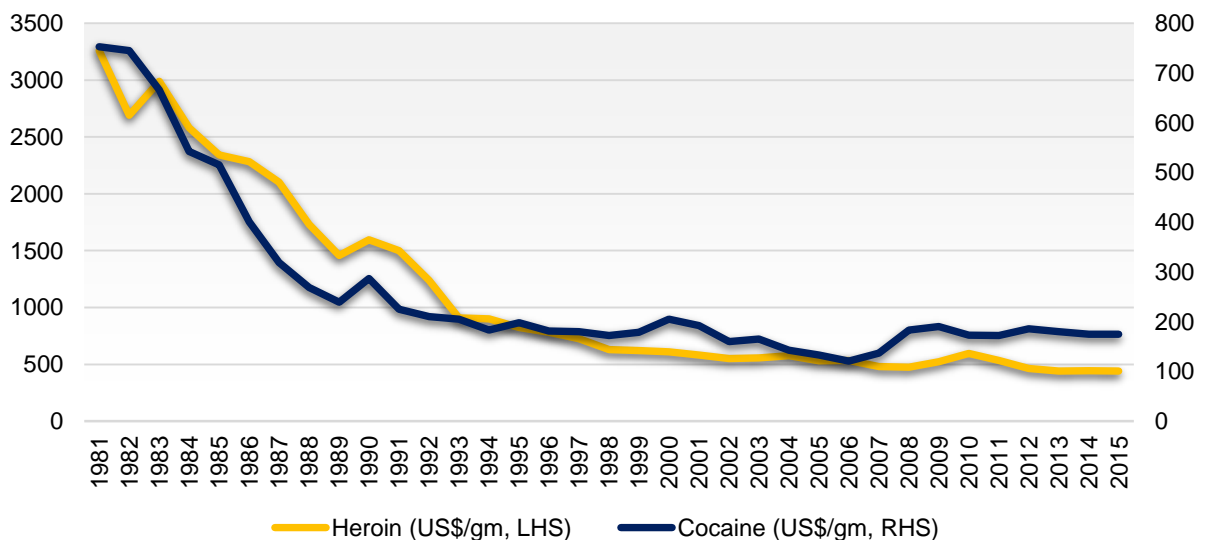
*Illegality pushed production off shore*

Production of the drug merely moved abroad and over 17,000 were arrested in the first year of the new law. Arrest numbers continued to rise and the MoJ raised the penalty in 1954. By 1955 55,000 had been arrested for meth related offenses. More details are in our *Crime in Japan Part 3* [here](#).

*Heroin & Cocaine?*

When we looked at cocaine and heroin markets, the prices have been on long downward trends, Fig.3. This has been in part due to the introduction of substitutes such as krokodil and oxi.

**Fig. 3: Price per gram (US\$) of Heroin/Cocaine**



Source: DoJ, Custom Products Research



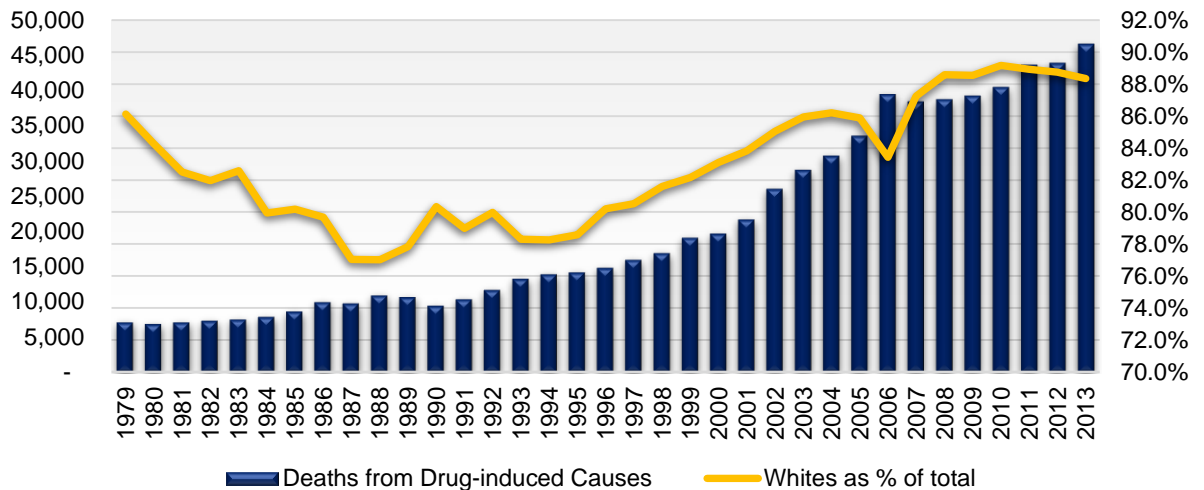
*Krokodil* Krokodil, which turns users' skin into that resembling a crocodile, is made from a mix of codeine, gasoline, industrial cleaning fluid, paint thinner and alcohol. The drug gives twice the kick of heroin for less than one-fifth the price. Krokodil addicts tend to die within 12 months such is the toxicity of the drug. The drug is hard to prevent by authorities given it is made of general household products that are legally available.

*Oxi* Oxi (short for Oxidado or 'rust') is prevalent in Brazil. It is a cocaine derivative that is mixed with kerosene or gasoline, acetone, battery fluid and other hazardous chemicals. Oxi sells for one-fifth the price of crack-cocaine with similar potency. Users tend to turn yellow and look like emaciated corpses.

### Deaths from Drug Induced Causes

*Deaths climbing* The DoJ notes deaths as a result of drug-induced causes (i.e. overdoses) has quadrupled in the last three decades. Caucasians make up around 88% of all deaths. Females make up around 39% of that down from 48.5% in 1979.

Fig. 4: Deaths from Drug Induced Causes



Source: DoJ, Custom Products Research

### Use of illicit drugs by active duty US military personnel

*US Forces getting higher* The [US government has collected statistics](#) on the use of illicit drugs by active-duty US military personnel. While still off the highs (no pun intended) of the 1980s, since the 1990s this trend has come back.

*Zero tolerance* Illicit drug use includes marijuana, cocaine, hallucinogens, heroin, methamphetamine, inhalants, GHB/GBL and prescription drug misuse. A policy of zero tolerance for drug use among DoD personnel is likely one reason why illicit drug use has remained at a low level in the military for 2 decades. The policy was instituted in 1982 and is currently enforced by frequent random drug testing; service members face dishonourable discharge and even criminal prosecution for a positive drug test.

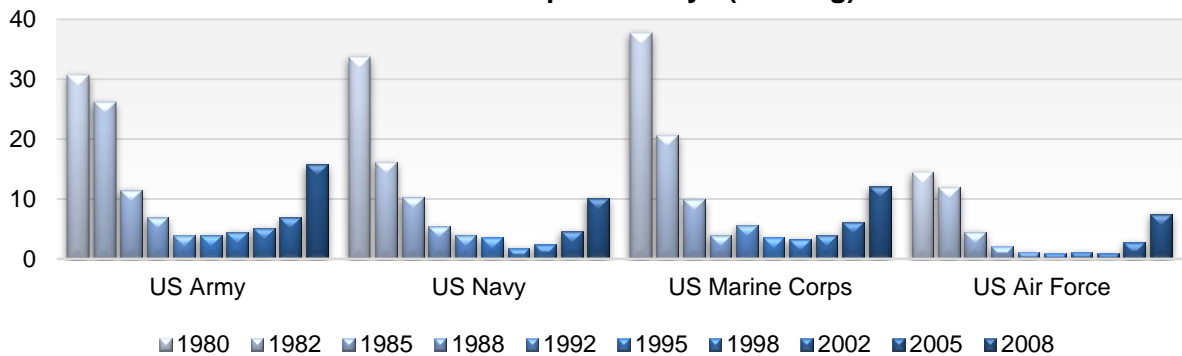


*Excessive use of pain killers*

However, in spite of the low level of illicit drug use, abuse of prescription drugs is higher among service members than among civilians and is on the increase. In 2008, 11 percent of service members reported misusing prescription drugs, up from 2 percent in 2002 and 4 percent in 2005. Most of the prescription drugs misused by service members are opioid pain medications.

Excessive use of pain relievers make up a large proportion of illicit drug use. Oxycodone is one of the more common type of opiate pain killer and it is highly addictive. In 2010, the US Food and Drug Administration (FDA) required the formulation of OxyContin be changed to make it harder to become addicted to.

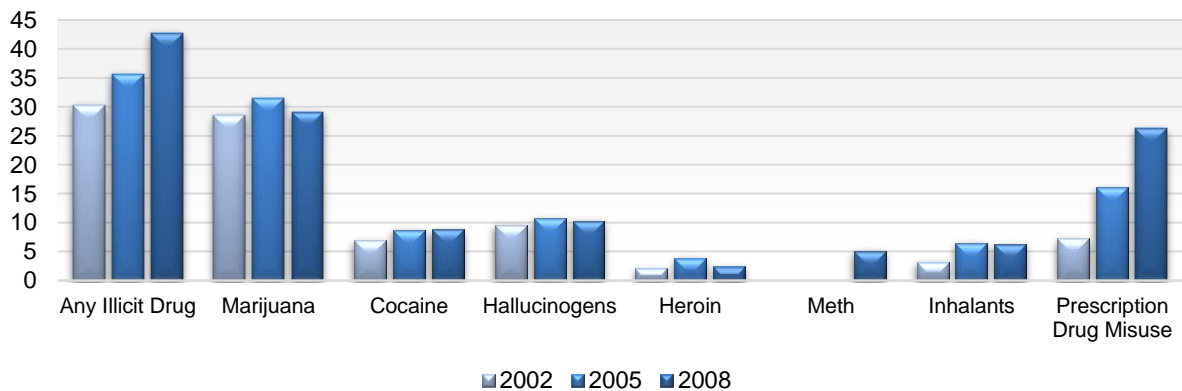
**Fig. 5: Active Duty US Military Personnel taking illicit drugs in past 30 days (% using)**



Source: DoJ, Custom Products Research

According to the National Institute on Drug Abuse (NIDA), “Suicide rates in the military were traditionally lower than among civilians in the same age range, but in 2004 the suicide rate in the U.S. Army began to climb, surpassing the civilian rate in 2008. Substance use is involved in many of these suicides. The 2010 report of the Army Suicide Prevention Task Force found that 29 percent of active duty Army suicides from fiscal year (FY) 2005 to FY 2009 involved alcohol or drug use; and in 2009, prescription drugs were involved in almost one third of them.”

**Fig. 6: Use of selected illicit drugs by Active-Duty US Military Personnel (% using in lifetime)**



Source: DoJ, Custom Products Research



## Summary

The correlation of methamphetamine price to purity at 91% R-squared over the last two decades shows that even certain illegal substances (especially those hard to prevent production of) also follow the laws of basic economics. While methamphetamine market looks like a good leading indicator, unfortunately data capture is all too often lagging. Having said that, the last two downturns have seen the market price fall and purity increase 12-24 months before economic shocks occur. We seem to be 12 months into the next potential downturn if the above hypothesis holds true.

While illicit drugs are no laughing matter there is a silver lining. [Medicinova \(4875 JP\)](#) is well advanced on a cure for drug addiction and is currently being funded by the US National Institute of Health to accelerate the commercialisation. The FDA is also fast tracking its approval.



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## Contacts

### Hong Kong

Simon Rigney

☎ +852-3958-2394 (HK)

☎ +81-3-5786-3712 (Tokyo)

✉ simon.rigney@custprd.com

### Salt Lake City

Patrick Hansen

☎ +852-8191-6925 (HK)

☎ +1-801-230-4796 (SLC)

✉ patrick.hansen@custprd.com

### Tokyo

Robert Rowland

☎ +81-3-5786-3711

✉ robert.rowland@custprd.com

Michael Newman

☎ +81-3-5786-3713

✉ michael.newman@custprd.com

## Office Locations

### Hong Kong

15/F Langham Place  
8 Argyle Street  
Mong Kok, Kowloon  
Hong Kong S.A.R.

### Tokyo

17/F Roppongi Hills North Tower  
6-2-31 Roppongi,  
Minato-ku, Tokyo  
Japan 106-0032

### Salt Lake City

299 South Main Street  
Suite 1300  
Salt Lake City, UT  
United States, 84111