Australian Bureau of Statistics

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Measuring the Illegal Drug Economy of Australia in a National Accounts Framework: Some Experimental Estimates

Drug Policy Modelling Program Symposium

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ABS Macro Economic Research Section

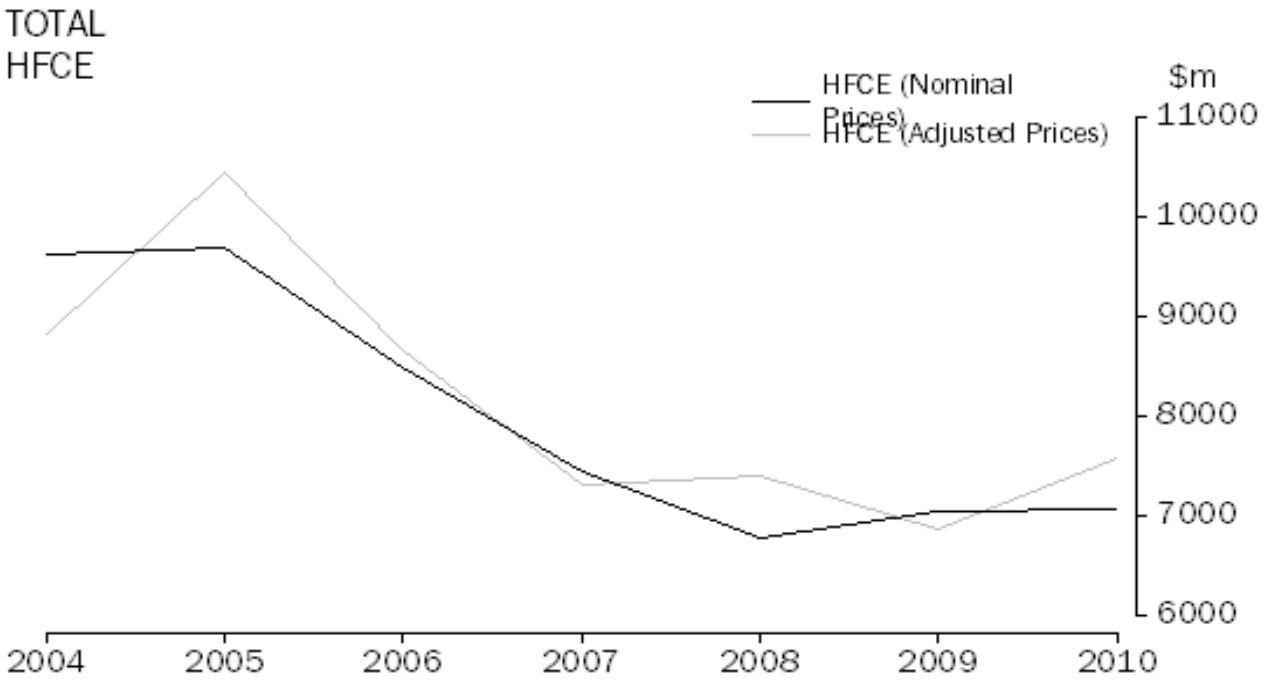
Introduction

- Why the Australian Bureau of Statistics interest in the illegal drug economy?
  - International Statistical Standards System of National Accounts 2008 and Balance of Payments and Investment Position sixth edition Manuals require measurement of illegal actions
  - Illegal drugs are part of a wider ABS project to improve measures in what it is known as the Non-Observed Economy
- We have used methods recommended by the OECD for measuring the Non-Observed economy.
- This is an experimental staff study, not official statistics.
  - We seek review and comments

Scope of the Study

- This investigation is limited to the most commonly used drugs in Australia
  - Cannabis
  - Amphetamines (including methamphetamines and other similar forms of amphetamines)
  - MDMA (ecstasy)
  - Heroin
  - Cocaine.
- Annual time series have been derived over 7 years from 2004 to 2010 for imports, production, production costs, and consumption

Household Final Consumption Expenditure

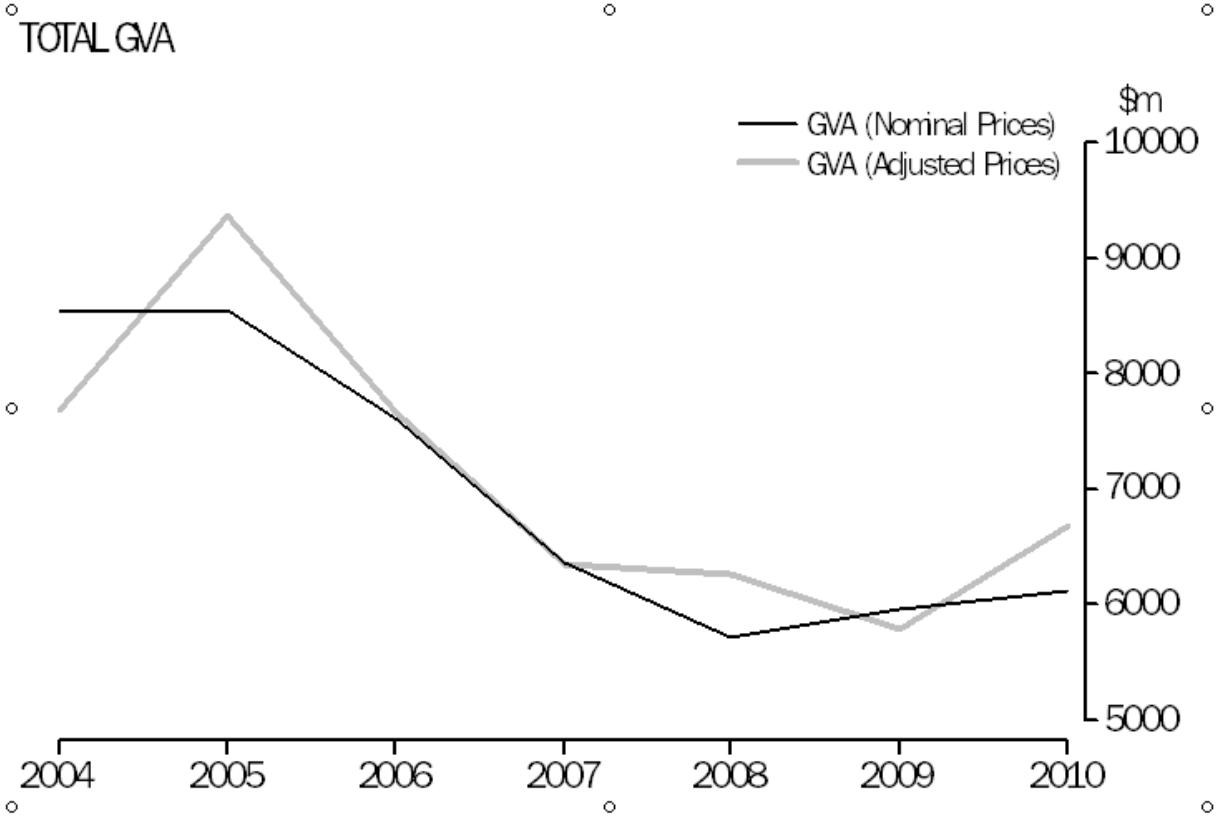


About 1% of total Household Final Consumption

Some components of these estimates are included in current data e.g. groceries, electricity

Nominal and purity adjusted prices

Gross Value Added



About 0.5% of Gross Domestic Product

Methods

- Cannabis estimates required detailed production cost and usage estimates
- Heroin and Cocaine are 100% imported
- MDMA imports and some local production
- Amphetamines example
  - Users and consumption
  - Domestic production cost
  - Prices
  - Imports
  - Household Final Consumption Expenditure
  - Sensitivity

Amphetamine Users and Consumption

- Usage data is provided by the Australian Institute of Health and Welfare (AIHW) for 2004, 2007 and 2010. The other years between 2004-2010 have been modelled based on the IDRS and EDRS, as well as the available AIHW data.
- **Presentation of data:**
  - % of total population whom are **recent users** (considered as users within the last 12 months)
  - Of recent users , % who use
    - every day
    - at least once a week
    - about once a month
    - a quarter
    - use about once a year
- An average quantity used per person 'on any one day' was multiplied by 'users on any one day' to estimate the total amount consumed on any one day in Australia\
- Amounts consumed on any one day were gathered from the EDRS, IDRS and AIHW reports

Total amount consumed over the course of the year (kg)						
2004	2005	2006	2007	2008	2009	2010
6,391	6,236	5,101	3,573	3,251	2,944	2,687

Amphetamine Domestic Production Cost

- Amphetamines are assumed to be 90% domestically produced and 10% imported (precursors).
- Method:
  - Total cost of domestic production = (Cost of domestic production per kilogram) * (Total kilogram amount consumed over the year + State Police Seizures) * % domestically produced (0.9)
  - Where Cost of domestic production per kilogram = $7054.00
  - Cost of domestic production per kilogram is taken directly from a source, 'Cost of Meth' paper (also confirmed by World Drug Report 2005 - UN)

Amphetamine Prices (Per Gram)

Prices for Amphetamines									
		2003	2004	2005	2006	2007	2008	2009	2010
Street Prices	Nominal	-	295	302	323	277	281	280	270
	Adjusted	-	192	419	358	183	374	204	442
	Street Purity (%)	13	20	14	13	20	15	20	12
Wholesale Prices	Nominal	-	115	137	137	137	160	155	160
	Adjusted	-	125	118	147	131	158	157	153
	Border Purity (%)	73	68	78	73	76	77	76	80

- All price and purity data is sourced from the Australian Crimes Commission
- The purity data are only those seizures analysed at a forensic laboratory
- The purity and price percentages were chosen based on the largest samples available (or an average)
- The street purity is very volatile, but the border purity is quite stable with a slight increase over the seven years

Calculation of Adjusted Prices:

Adjusted Price = Nominal Price [t] * (Purity [t-1] / Purity [t])

Amphetamine Imports

- Import Calculation:
  - (Dealer purchase price per kilogram) * (Total kilogram amount consumed over the year + Amphetamine AFP seizures)

Amphetamines Imports (Nominal Prices) ($M)						
2004	2005	2006	2007	2008	2009	2010
210	107	82	53	94	110	54

Household Final Consumption Expenditure

- The Household Final Consumption Expenditure is the dollars spent by consumers on drugs.
- That is the total consumed amount multiplied by the nominal street prices

Amphetamines HFCE ($M)							
	2004	2005	2006	2007	2008	2009	2010
Nominal Series	1,885	1,883	1,648	990	914	824	725
Adjusted Series	1,225	2,616	1,825	653	1,216	601	1,187

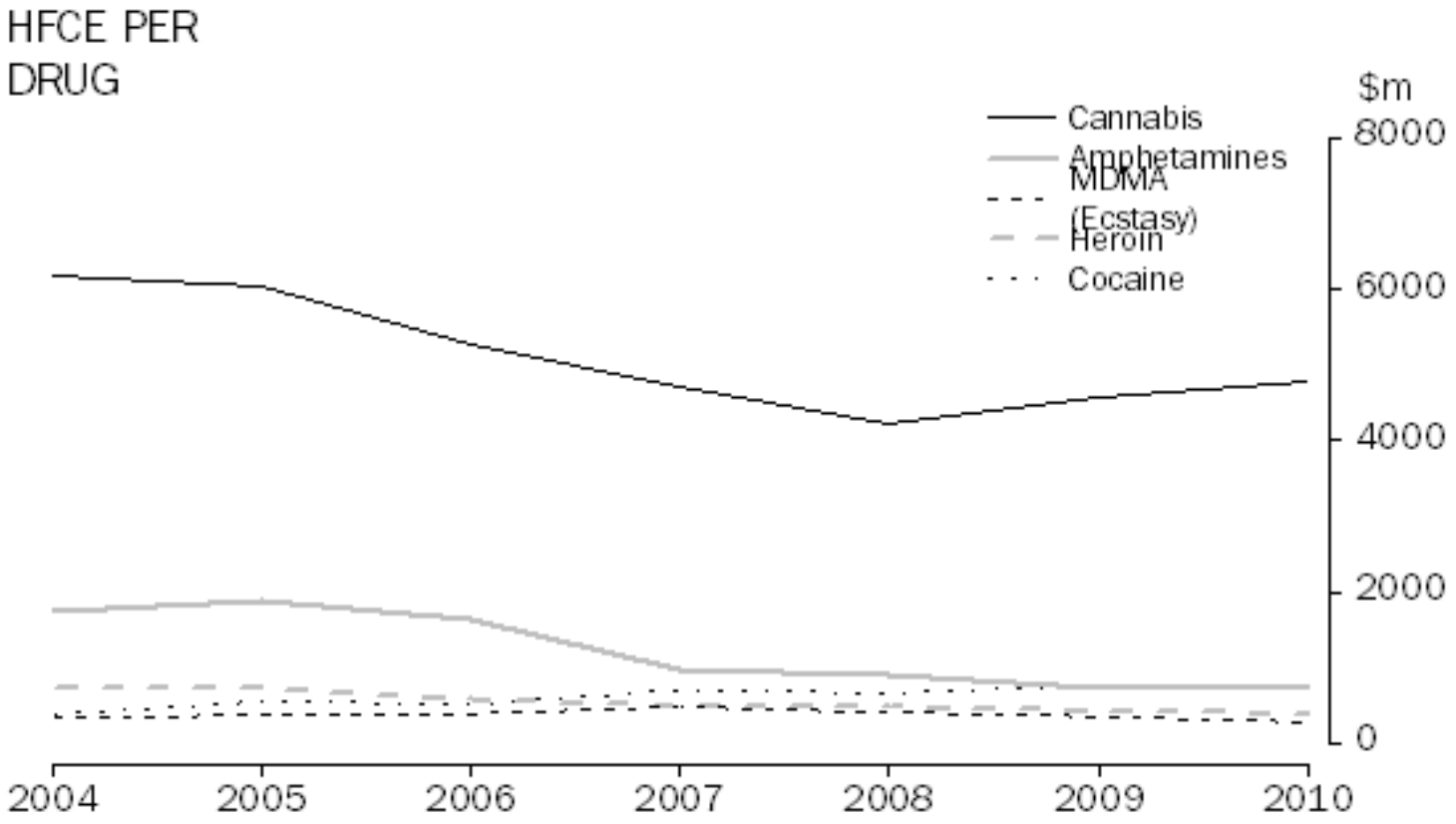
Overall Results:

A Supply/Use table is shown below for the year 2010:

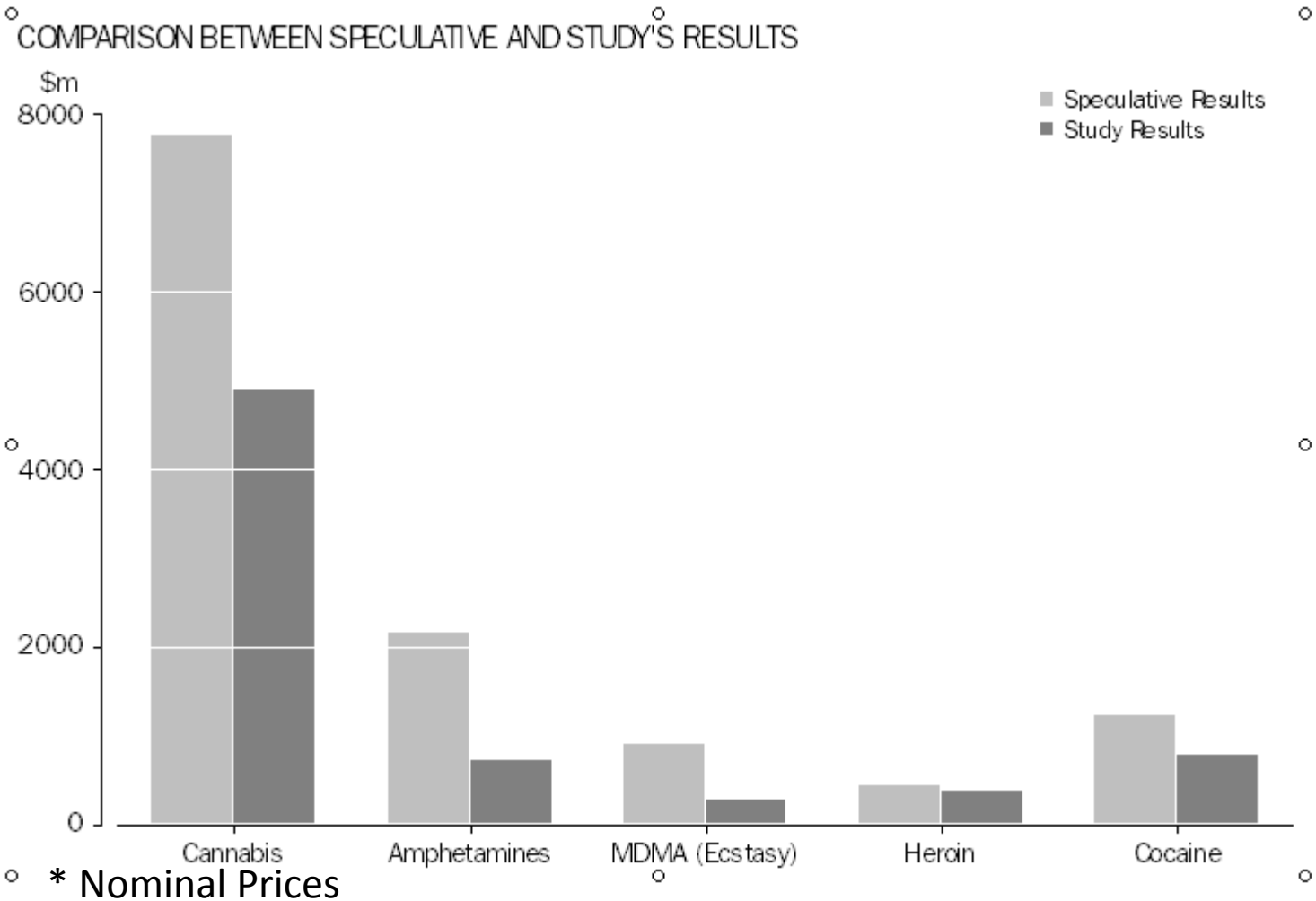
Table 14: Supply-Use table (Adjusted Prices) for the year 2010 (a)						
Supply (in $m)	Agriculture	Manufacturing	Retail (b)	Domestic Supply	Imports	Total Supply
Cannabis	2000	-	2888	4888	-	4889
Cocaine	-	-	244	244	455	699
Heroin	-	-	179	179	301	480
MDMA (Ecstasy)	-	4	232	236	82	319
Amphetamines	-	370	766	1136	51	1188
Total	2,000	375	4,309	6,684	890	7,574
Use (in $m)	Intermediate Use		Final Use (HFCE)			Total Use
Cannabis	-		4889			4889
Cocaine	-		699			699
Heroin	-		480			480
MDMA (Ecstasy)	-		319			319
Amphetamines	-		1188			1188
Total	-		7,574			7,574

(a) Numbers have been rounded
(b) Distribution margins

Household Final Consumption Expenditure (Nominal Prices)

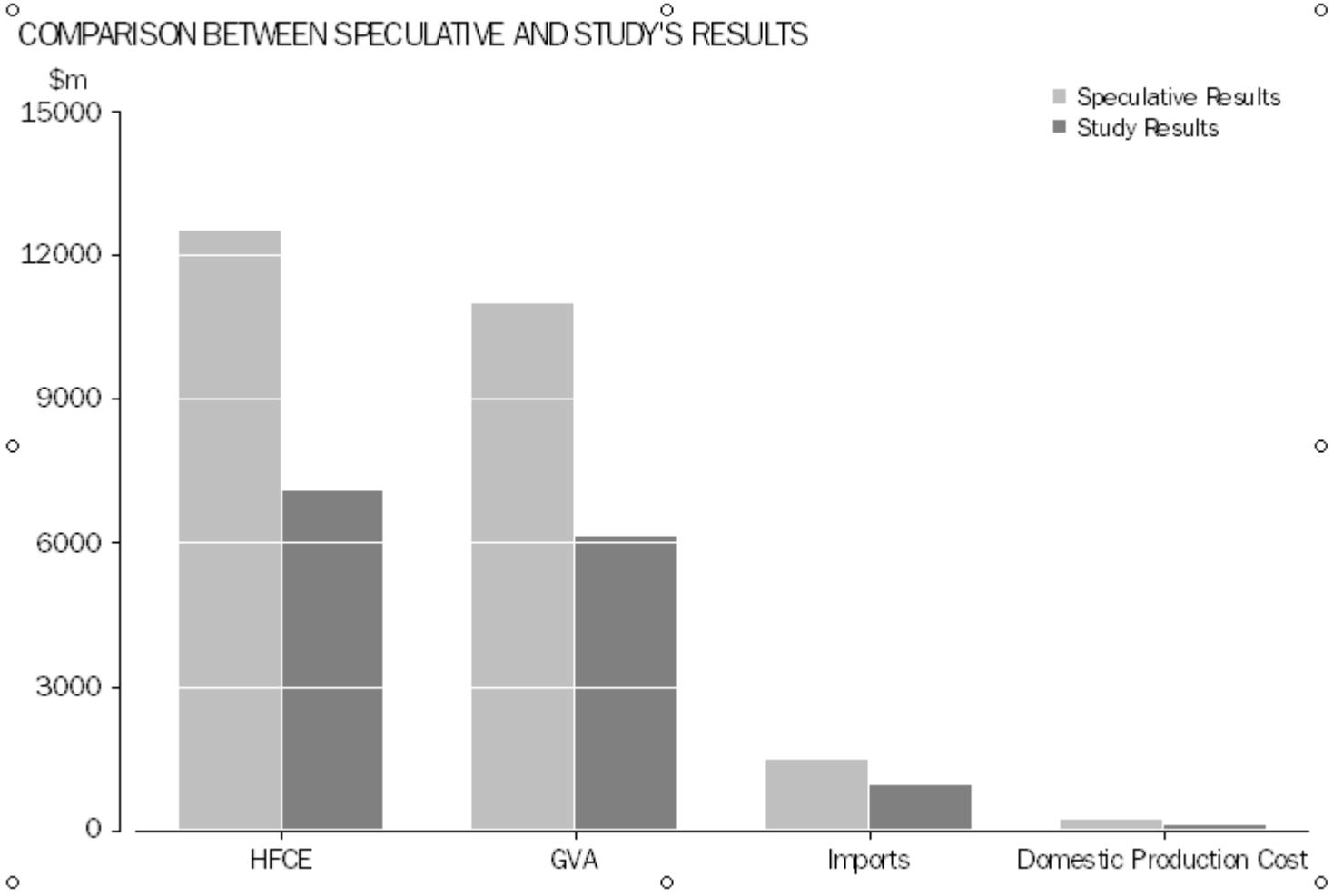


Sensitivity: AIHW speculative consumption data - 2010



* Nominal Prices

Sensitivity: AIHW speculative consumption data 2010



* Nominal Prices

Sensitivity: per capita - 2010

- HFCE $ per Capita, per annum for population aged 14+:
  - Population 14+ = 18,396,129
  - Study HFCE / Population 14+ = $385
  - Speculative HFCE / Population 14+ = $680

- HFCE $ per Capita, per annum for Recent User Population:
  - Recent Users of drugs for 2010 = 3,256,115 *
  - Study HFCE / Recent User Population= $2,174
  - Speculative HFCE / Recent User Population = $3,842

* Multiple drug users counted for each drug

Conclusion

- The greatest challenges in forming these estimates is data quality in prices, purity, production and consumption amounts
- The overall results are small (in national accounting terms)
  - Good enough for inclusion in the accounts?
  - What are possibilities of better data?
  - How useful are these estimates outside a national accounting context?

- Questions, Comments

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