

How to measure illegal drugs in the national accounts framework. The case of Italy

Antonella Baldassarini and Carolina Corea

Il mercato illecito della droga ed il suo possibile assetto organizzativo

Università di Roma "La Sapienza"

Aula Bianchi Bandinelli

1 – The System of National Accounts ESA95

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- According to ESA95 the production generated by illegal activities which fulfil the characteristic of an ***economic transaction*** should be included in the measure of GDP as every other legal activity
- Illegal economic actions are transactions only when all units involved enter the actions voluntarily (mutual agreement between parties).
- Purchases, sales or barter of illegal drugs or trafficking stolen goods are transactions while theft is not.

1 – The System of National Accounts ESA95

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Lack of recording causes:

1. *discrepancies* into the accounts if the incomes spent on the purchase of legal goods and services are largely derived by incomes earned from illegal activities;
2. distortion in the *consistency* of the overall system if some monetary transactions that take place are excluded;
3. bias in the *international comparability* if some activities may be legal in one country and illegal in another;
4. distortion in the *over time comparability* if some activities switch from being illegal to be legal.

1 – The System of National Accounts ESA95

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- In 2001, a Task Force on illegal activities was set up by the GNI Committee (Committee of the MS chaired by Eurostat with a regulatory power). It identified three areas of illegal activities (trafficking of drugs, prostitution and smuggling of alcohol and tobacco).
- In 2003, Eurostat asked NSI of Members States to provide some first estimates on the above illegal areas
- The aim was to verify how sources and methods to estimate illegal activities might be reliable and accurate to be included in GDP
- Istat has just provided to Eurostat some first experimental estimates on the above illegal areas. Here we present the first results on the value of production and expenditure consumption of drugs in Italy for 2005.

2 – Concepts and definitions

The ESA95 theoretically includes two kind of illegal activities:

1. the production of goods or services whose sale, distribution or possession is forbidden by law;
2. production activities that are usually legal but become illegal when carried out by unauthorized producers, for example, unlicensed medical practitioners.

According to the above definition, the manufacture and distribution of narcotics, illegal transportation in the form of smuggling of goods and of people and services such as prostitution should be registered in the system; the output of the above activities consists of goods or services for which there is an effective market demand.

3 – Drugs market estimation

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In order to estimate value added of drugs activity, a national account identity has been used. The identity can be expressed as follows:

***Domestic output + import + distributive margins
(on production and imports) = Consumption + export***

No domestic output and export have been considered. Types of drugs considered in the estimation proposed are the following: heroin, cocaine, cannabis, ecstasy, other products (including LSD and amphetamines).

3 – Drugs market estimation

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Data sources are mainly represented by administrative information from customs or police departments, reports from Ministry of Health and other related institutions or academic studies, EMCDDA last year prevalence rates data, Ministry of Social Affairs data on street prices and others national sources of data.

The approaches applied are two:

- 1) from the supply side (production)
- 2) from the demand side (expenditure)

3.1 – Drugs market from the supply side

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Data used for estimating the consumption of drugs from the **supply side**:

- quantity of illegal drugs seized
- share of drugs for the domestic market
- the seizure rate
- import prices
- street prices
- purity level of import drugs and of trade drugs

3.1 – Drugs market from the supply side

(2/5)

- Drugs quantities seized by the police (Ministry of the Interiors)
- Share of international supply of drugs that is addressed to the country is an assumption (20% of the European imports)
- The hypothesis of rate of seizure is an assumption (5% reflects the efficiency degree of the police system)
- Purity degree of drugs (estimation starting from information provided by the Directorate of the Antidrug Service)
- Import and street prices (elaboration starting from Ministry of the Interiors data)

Rome, 16-17 September 2009

3.1 – Drugs market from the supply side

(3/5)

The value of drug consumption from the supply side:

$$C = S \times \left(\frac{1}{sr} - 1 \right) \times a \times \left(\frac{pu_i}{pu_{st}} \right) \times P_{st}$$

where:

S = quantity seized

sr = rate of seizure

a = share of imported drugs in the country

pu_i / pu_{st} = purity factor

P_{st} = street price

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3.1 – Drugs market from the supply side (4/5)

Starting from the consumption is possible to obtain value added as residual. According to our approach, value added is expressed by trade margins as follows:

$$TM = C - PD$$

where TM are trade margins, C is the final consumption, PD are the purchases of drugs by importers.

Purchases of drugs, equal imports, can be expressed as follows:

$$PD = I \times Pim$$

3.1 – Drugs market from the supply side (5/5)

$$\text{If } C = I \times \left(\frac{pu_i}{pu_{st}} \right) \times P_{st}$$

imports are:

$$I = C / \left[\left(\frac{pu_i}{pu_{st}} \right) \times P_{st} \right]$$

Imports quantities are valued at import prices. Subtracting purchases of dealers from final consumption is determined the value of trade margins.

3.2 – Drugs market from the demand side (1/5)

Data used for estimating the consumption of drug from the **demand side**:

- the number of users
- estimates of the average consumption expenditure per year
- street prices and street purities

3.2 – Drugs market from the demand side

(2/5)

- Number of unknown drugs addicts has been estimated from the known drug addicts of public and private treatment centres
- Presumed number of users estimated on the basis of the last year prevalence rate applied to the population aged 15-64 years (EMCDDA) and reduction for estimating actual users only
- Estimation of regular users (comprehensive of drugs addicts) and occasional users (80% of the all users) using MS experiences
- Hypothesis concerning the consumption patterns (quantity consumed and the frequencies of consumption)
- Street prices (Ministry of the Interiors)

3.2 – Drugs market from the demand side (3/5)

The value of drugs consumption from the demand side:

$$C = N \times Q \times P_{st}$$

where:

C= consumption (expenditure)

N= number of consumers

Q= average consumed quantity

P_{st}= street price

3.2 – Drugs market from the demand side (4/5)

Total users broken down by drugs and kind of consumers in 2005

Types of drug	Total users	Regular users (including drug addicts)	Occasional users
Heroin	251.823	251.823	0
Cocaine	726.521	116.243	610.277
Cannabis	2.393.245	382.919	2.010.326
Ecstasy	165.118	26.419	138.699
Amphetamines, LSD	330.237	52.838	277.399
Total	3.866.944	830.242	3.036.702

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3.2 – Drugs market from the demand side (5/5)

Consumption patterns

Hypothesis per drug	Regular users		Occasional users	
	Frequencies (days per year)	Quantities (grams or numbers)	Frequencies (days per year)	Quantities (grams or numbers)
Heroin (Mazzeger hypothesis)	250	0,5	0	0
Cocaine (Istat hypothesis)	52	2,5	12	2,5
Cannabis (Istat hypothesis)	40	1	12	1
Ecstasy (Istat hypothesis)	40	1	12	1
LSD, amphetamines (Istat hypothesis)	40	1	12	1

4 – Results

(1/3)

In 2005, the weight of drug consumption has been estimated around **0,4% on GDP** at current prices while value added of drug activity represents a share of **0,5% on value added** of all activities recorded by national accounts.

Supply side and the demand side results - 2005

(millions of euros)

Types of drugs	Supply side (A)	Demand side (B)	Differences (A)-(B)
Heroin	887	2.046	-1.159
Cocaine	3.688	2.774	914
Cannabis	1.516	793	723
Others (Amphetamine, LSD, Ecstasy)	23	533	-510
TOTAL	6.114	6.146	-32

Estimation of drug consumption and production using a supply approach - 2005 *(million of euros)*

Drug	Total consumption	Export	Import	Production	Intermediate consumption	Value added
Heroin	887	0	411	476	0	476
Cocaine	3.688	0	1.723	1.965	0	1.965
Cannabis	1.516	0	325	1.191	0	1.191
Amphetamine	23	0	8	15	0	15
LSD	0	0	0	0	0	0
TOTAL	6.114	0	2.467	3.648	0	3.648

5 – Conclusions

(1/2)

- ❑ The statistical basis for estimates of production and trafficking of drugs for purpose of NA is weak: limited or not suitable data sources are available, a large number of assumptions are necessary and most of these assumptions are difficult to verify.
- ❑ Estimates from the supply side (production) are weak for the following reasons: chain distribution is too short (one importer, one trader and one consumer) while a consistent number are those ones who work in that kind of markets (specialized pushers, prostitutes, illegal foreign, etc.).
- ❑ Estimates obtained from the demand side (expenditure) are affected by the complementarity of legal and illegal drugs, the hidden population of consumers as on the hypothesis of their consumption behaviours.

5 – Conclusions

(2/2)

- In view of the approaches experimented by most MS and difficult data situation Eurostat is going to suggest to base the estimates on transactions in drugs on the consumption side only.
- At the meantime, as the error of the estimates seem to be quite high, an application of the supply side approach (production) should be recommended to check data.
- The work on the measurement of illegal activities will be updated and improved by Istat in the next future. The experimental phase should be concluded in 2010.