Measuring huge and serious consequences of illegal drug markets

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1. Introduction.

To defeat the prohibitionist approach of the three Italian drug laws and policies, in effect in the last 27 years, just as ineffective, it is euphemism. In fact, the approach has been very harmful to consumers, much more than the illegal substances used. The damages that the approach has brought to traders were quite mild, in the case of small-sized dealers who are not consumers, as well as harmless in the case of criminal organizations involved in trafficking. All this has happened with serious waste of public money in the repression and poor use of public money for socio-sanitary interventions of recovery and reintegration especially directed to high-risk drug users (HRDU), as defined by the European Monitoring Centre (EMCDDA)[1]. No qualitative interventions have been used in order to prevent that young people become always more involved in the drug market as users (in particular HRDU) and dealers.

The anti-drugs law approach, since 1990 strictly prohibitionist, has made consumption and, above all, the trade of all substances de facto liberalized. There are no rules on the quantity of product to be sold, on the quality of the product, on the places and times of sale, or the prices; there is no taxation. The only rules in effect are those dictated by traffickers. For example, you can sell cannabis with THC content far greater than the traditionally-sold natural product without the buyer being informed, with the aim of gaining consumers and increasing the gain. Illegally cultivated and sold products are susceptible to additives of harmful chemicals (including fertilizers, pesticides, hormones). Additional scams, within the unlawful, unusual shopping mall, are very common.

At the beginning of 2006, the so-called Fini-Giovanardi law was approved, even more harmful for consumers than the former one, already prohibitionist (Jervolino-Vassalli of 1990, D.P.R. 309/90). The latter is again in force after the Constitutional Court's February 12, 2014 ruling, which "eliminated" the 2006 law. Fini-Giovanardi, absolutely lacking in scientific bases, has produced statistically, very seriously measurable damages that prohibitionist politicians do not know or do not evaluate in their gravity, as they publicly demonstrate.

To understand the negative consequences for people, ineffective for the market and costly for the state, just look at the reality and collect information ("evidence") connected to buyers and sellers, "read correctly" the administrative data. The general administrative data are public and, to get to know them, it is enough to go back to sources (Farina Coscioni e Rossi, 2016, Di Censi and Fabi 2017).

Any evaluation procedure can be based on administrative data and on survey data (Figure 1) to be collected and organised; then different drug laws and policies can be compared and quantitative evaluation obtained.

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[1] http://www.emcdda.europa.eu/activities/hrdu.

Figure 1. Hidden and visible drug users (and dealers): we can figure them like an iceberg, since some are visible (from administrative data), but the majority are hidden (only well designed surveys are able to detect them)
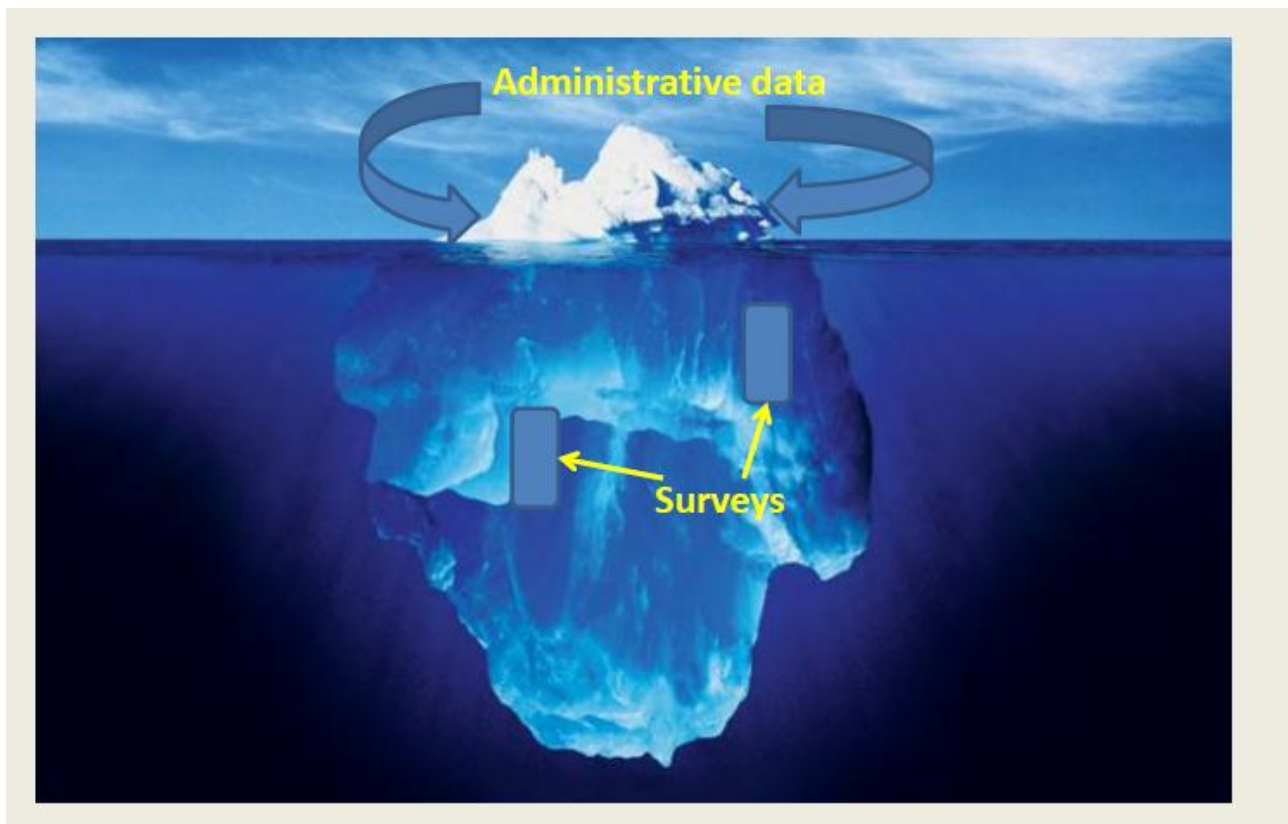
The goals of drug law and policy interventions are summarized as demand reduction and supply reduction. The impact and the consequences can be measured by several, calculated or estimated, indicators, obtained on the basis of administrative and of survey dates sets.

The consequences that have been studied are summarized in consumer health indicators, consumer crime indicators and drug market size and consequences.

Using standard and new indicators it can be shown that:

- The various drug laws affect the style of drug use through the increase involvement of minors in drug use and supply.
- Minors HRDU indicators increase.
- Law enforcement interventions are ineffective to reduce supply.
- Criminal organizations have great gains from the drug market.
- Correlation between market levels and corruption and competitiveness indices are high.

Some specific examples of data analyses, surveys or administrative data, are reported below.

2. Examples of quantitative evaluation of Italian drug laws and policies through standard and new specific indicators.

1. Fini-Giovanardi Law (2006:) harmful consequences for drug consumers.

The 2006 drug law (Fini-Giovanardi) was more restrictive, particularly with regard to cannabis. In fact, the consequences, both criminal and administrative, for sellers and consumers of cannabis were equalized to those of other illegal substances (heroin, cocaine ...), not applying the scientific classification, used in the rest of the world, distinguishing substances in "soft" and "heavy" according to the effects resulting from use[2].

For drug dealers, the biggest punitive aggravation resulted from the modification of Article 73: since 2006, the same penalties for the sale of all substances without distinction. Even for consumers, the aggravation (amendment of art.75) was remarkable: they could no longer avoid the administrative sanction (suspension of driving license, passport withdrawal, ...) even accepting therapeutic intervention to limit the use of the substance (secondary prevention), as was possible with the DPR 309/90.

The trends change much "worse" with respect to consumers do not need comment (Figure 2).

Figure 2. Behaviours of the numbers of therapeutic programs and of administrative sanctions for drug consumers reported for art.75.
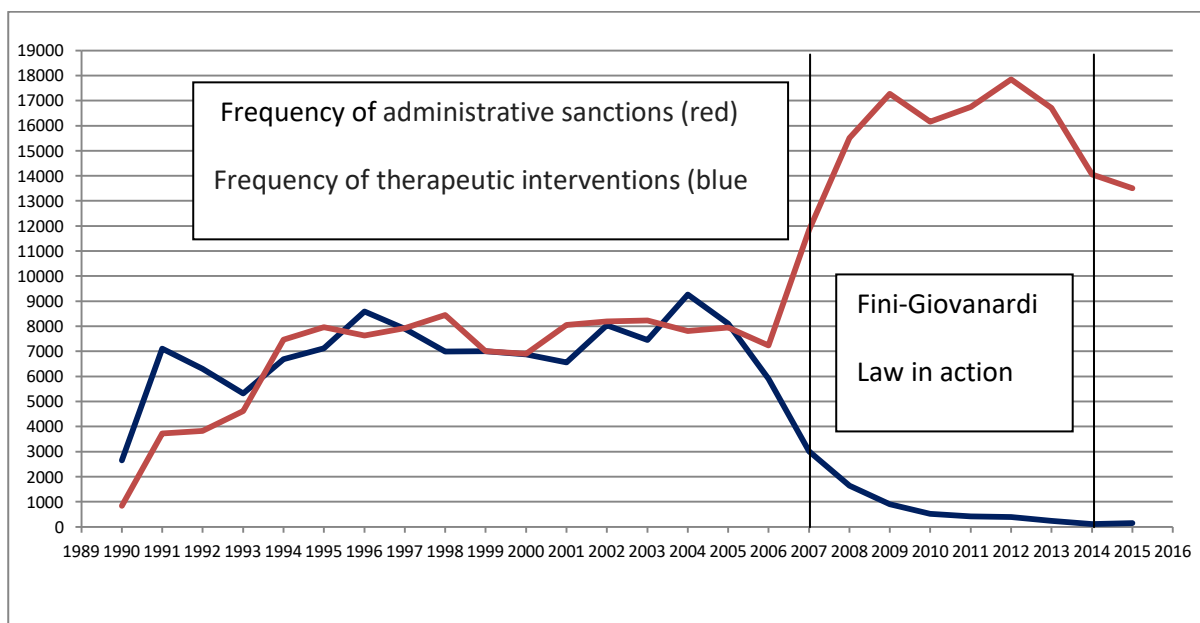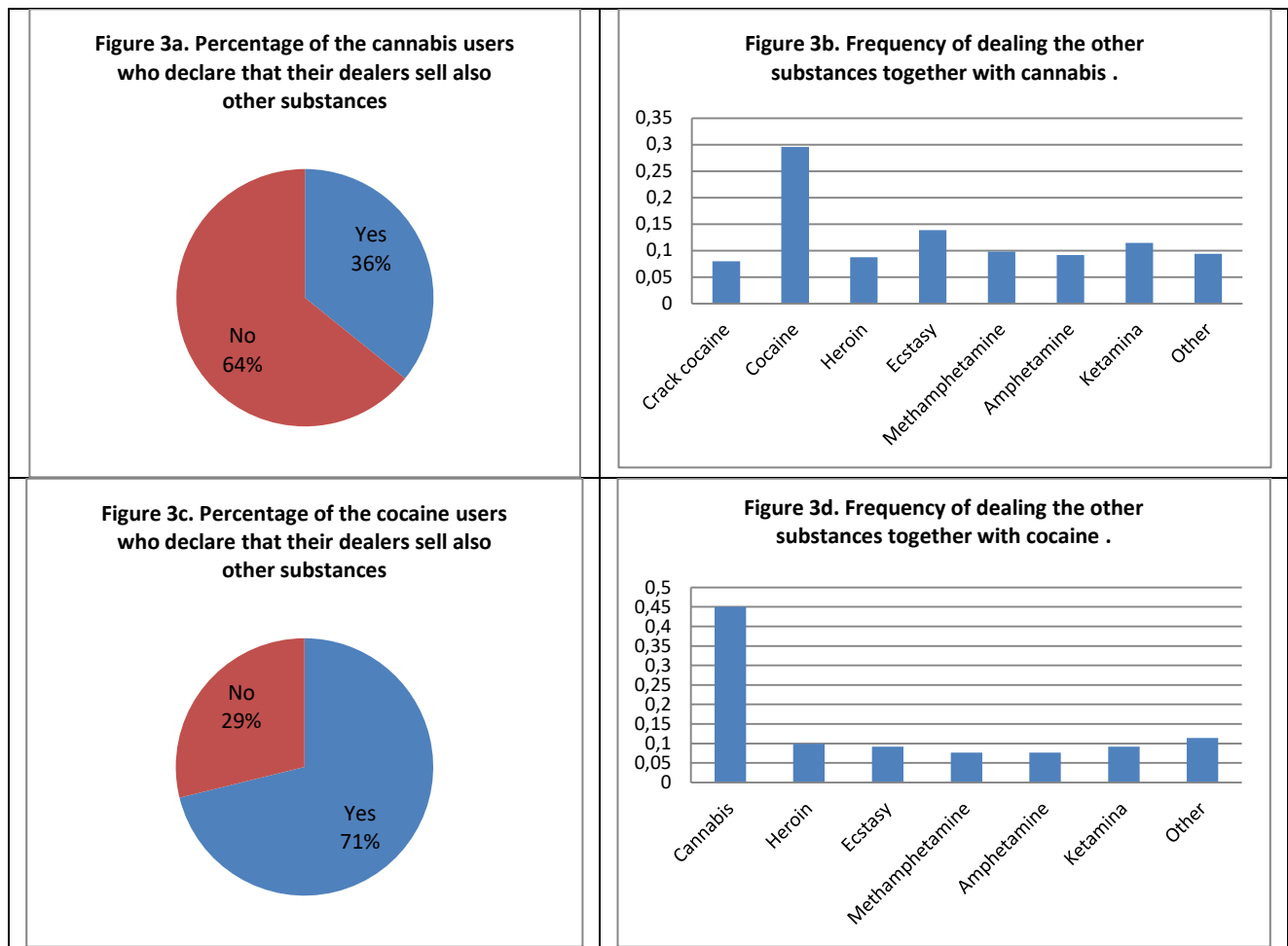

From the official data on the seizures of DCSA (Central Direction of Anti-Drug Services) it appears that, immediately after the entry into force of Fini-Giovanardi, the poly-dealing increased and, as a consequence, poly-use increased soon and is quite high in Italy.

Similar information comes also from surveys as shown in Figure 3; the survey[3] was conducted for the EU Commission (2013) and shows that most dealers sell several substances.

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[2] http://2017.festivaleconomia.eu/-/cannabis-proibire-legalizzare-o-liberalizzare-.
[3] Trautman F, Kilmer B, Turnbull P. Eds. *Further insights into aspects of the illicit EU drugs market.* European Commission, 2013.

Figure 3a. Percentage of the cannabis users who declare that their dealers sell also other substances

Yes 36%
No 64%

Figure 3b. Frequency of dealing the other substances together with cannabis .

(Crack cocaine, Cocaine, Heroin, Ecstasy, Methamphetamine, Amphetamine, Ketamina, Other)

Figure 3c. Percentage of the cocaine users who declare that their dealers sell also other substances

No 29%
Yes 71%

Figure 3d. Frequency of dealing the other substances together with cocaine .

(Cannabis, Heroin, Ecstasy, Methamphetamine, Amphetamine, Ketamina, Other)

Epidemiological indicators are, unfortunately, mostly based on the prevalence of users of just one "main" substance and the ranking of the harm caused is based on a single substance analysis. Thus, further new indicators were proposed to evaluate poly-drug use, in order to assess the consequences of poly-drug use in ESPAD survey, comparing countries and, indirectly, evaluating the efficacy of prevention interventions.

The approach was based on the analysis of the frequency of lifetime use, in the last twelve months or in the last thirty days, depending on data availability. Poly-drug use was taken into account by adding up the frequency of use of any substance multiplied by the health harm score of the respective substance. Any user was characterized by two scores: frequency of use in the particular time period and poly-drug use score. The poly-drug use score increases with frequency of use, with the number of substances used and with the health harm score of any substance.

In particular, the poly-drug score (PDS) of the i-th user is computed using the following formula:

$$PDS_i = \sum_{j=1}^{n} w_j FUS_{ij}$$

where *n* represented the number substances used in the time period considered, w_j was the health weight of the *j-th* substance and FUS_{ij} was the frequency of use of the *j-th* substance for the *i-th* user.

Based on comparable data on substance use among 15 to 16 year old adolescents from 38 European countries in the year 2011 (ESPAD survey), the approach has been applied and the results are reported in Table 1. The mean and median values highlight Italy's prevailing position in the poly-drug use.

Table 1. Descriptive statistics for normalized poly-drug score (PDS) ordered with respect to the value of the mean.

Country	Median	Mean
Albania	0.12	0.46
Italy	0.27	0.44
Bosnia and Herzegovina (Federation)	0.19	0.44
Cyprus	0.07	0.34
Montenegro	0.05	0.3
Liechtenstein	0.04	0.27
Iceland	0.05	0.26
Malta	0.05	0.24
Ireland	0.04	0.24
France	0.08	0.24
United Kingdom	0.08	0.23
Netherlands	0.08	0.23
Bulgaria	0.05	**0.21**
Belgium (Flanders)	0.07	**0.21**
Slovenia	0.05	0.2
Russian Federation	**0.04**	0.2
Hungary	**0.04**	0.2
Serbia	0.03	0.19
Germany	0.05	0.19
Portugal	0.05	0.18
Croatia	0.04	0.18
Slovak Republic	0.04	0.17
Poland	0.04	0.17
Latvia	0.04	0.17
Greece	0.03	0.17
Denmark	0.04	0.17
Czech Republic	0.04	0.17
Sweden	0.04	0.16
Norway	0.04	0.16
Ukraine	0.04	0.15
Kosovo	0.03	0.15
Bosnia and Herzegovina (Republic of Srpska)	0.02	0.15
Finland	0.04	0.14
Romania	0.04	0.13
Lithuania	0.03	0.13
Moldova	0.08	0.12
Estonia	0.04	0.12
Faroe Islands	0.04	0.07
Global mean	**0.04**	**0.21**

2.   Administrative recent data-set show that minors involvement in drug use and supply is increasing.

In order to analyse the impact of drug laws and policies on behaviours of minor consumers, in particolar High Risk Drg Users (HRDU), and minor dealers, Italian administrative data sets have been used and analysed in recent years.

The results show that:

- The proportion of reported minor drug consumers is increasing;
- The age of drug use onset is decreasing;
- The proportion of assisted drug users (15-19 years old) is increasing;
- The proportion of hospitalizations of minors due to drug use is increasing;
- The proportion of minors involved in criminal actions connected to High Risk Drug Use is increasing.
- **In summary: All data sets regarding "visible" HRDU minors show increasing trends.**

In particular:

The proportion of minor drug users reported to Prefectures-UTG (up to 14 years and 15-17 years) shows a noticeable increase and confirms that the age of the first drug consumption has decreased (Figure 4) and females show a greater increase than males (Figure 5). In Figure 6 some specific indicators are reported.

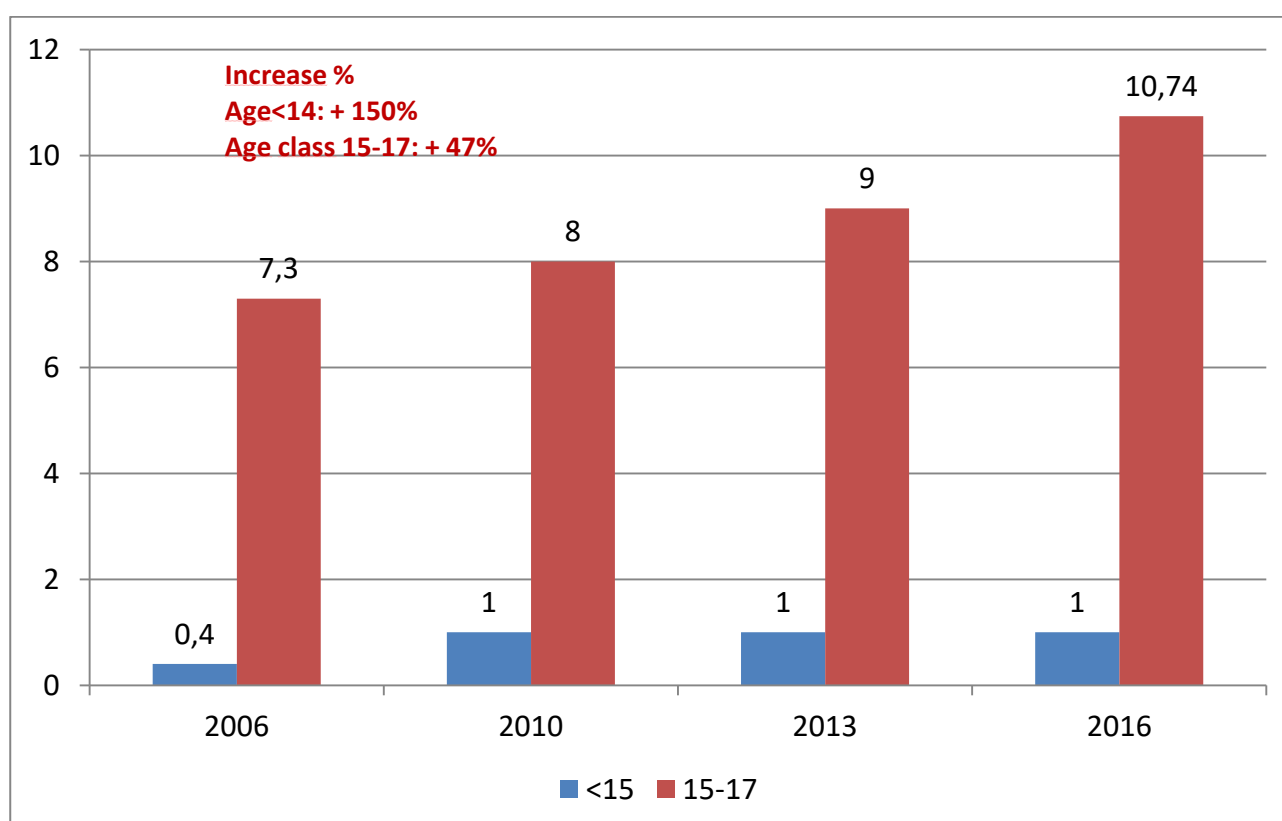**Figure 4. Percentage of minors among subjects reported for drug use (2006-2016).**

Figure 5. Percentage of minors among subjects reported for drug use. The 2015 situation confronted to the average 1990-2015 (separately for males and females).
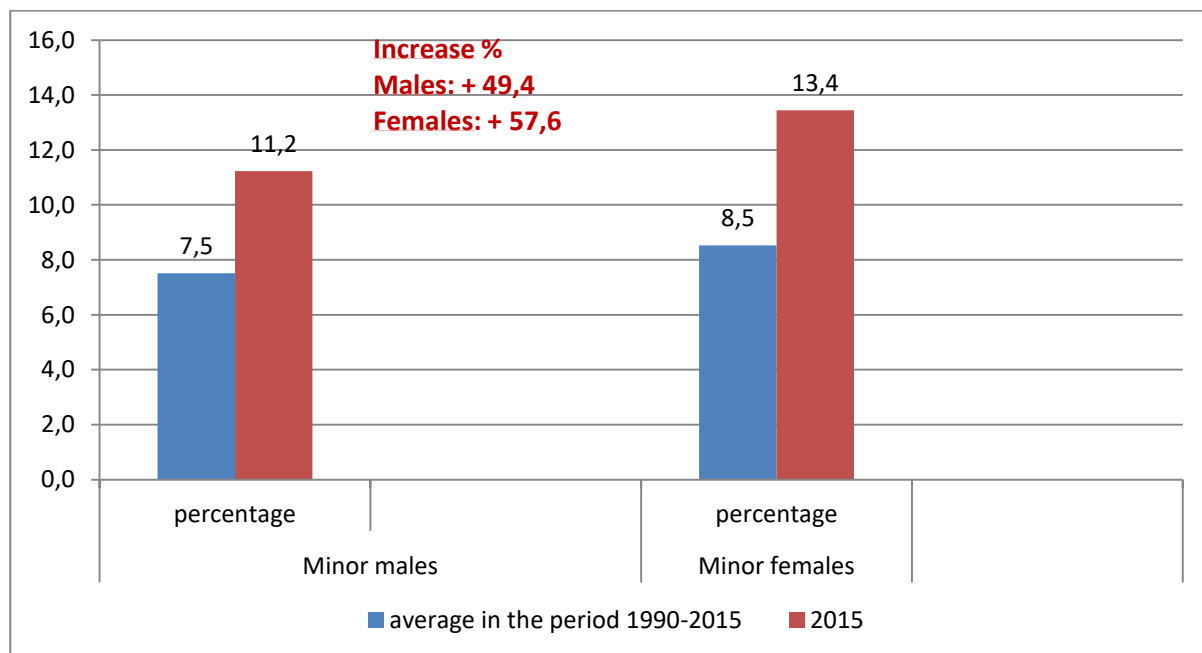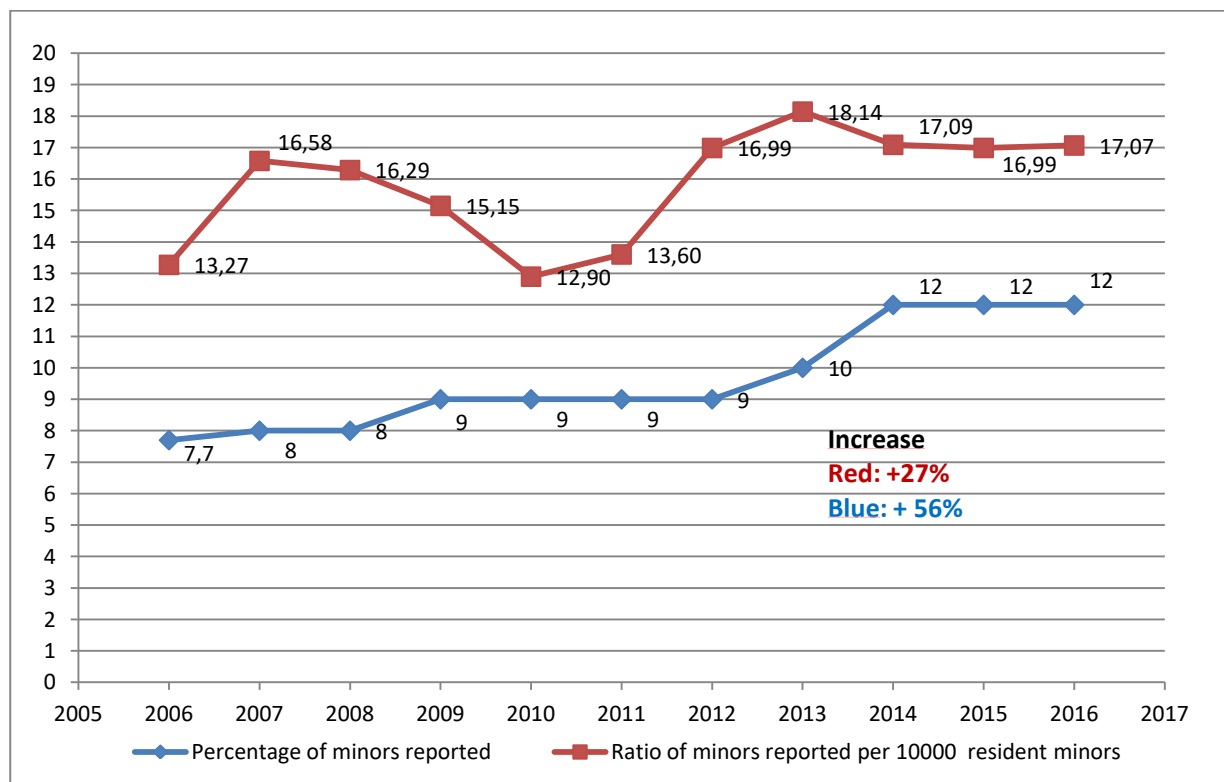

Figure 6. Percentage of minors among subjects reported for drug use (blue) and ratio of minors reported to 10,000 minor residents (red).


In Table 2 and Figure 7, the proportion of assisted drug users (15-19 years old) are reported in the period 2012-2016.

Table 2.   Age distribution of drug users in therapy services (%).

Age	2012	2013	2014	2015	2016
<15	0.05	0.02	0.02	0.03	0.01
15-19	0.17	0.52	1.36	2.49	2.52
<19	**0.22**	**0.54**	**1.38**	**2.52**	**2.53**
20-24	3.61	4.95	5.44	5.98	6.12
25-29	9.05	9.54	9.5	9.87	9.52
30-34	12.93	12.99	12.82	12.9	12.52
35-39	15.87	15.62	15.61	15.46	14.98
>39	58.31	56.35	55.25	53.27	54.32

Figure 7.   Percentage of subjects in therapy under the age of 19 considered as a HRDU minors indicator.
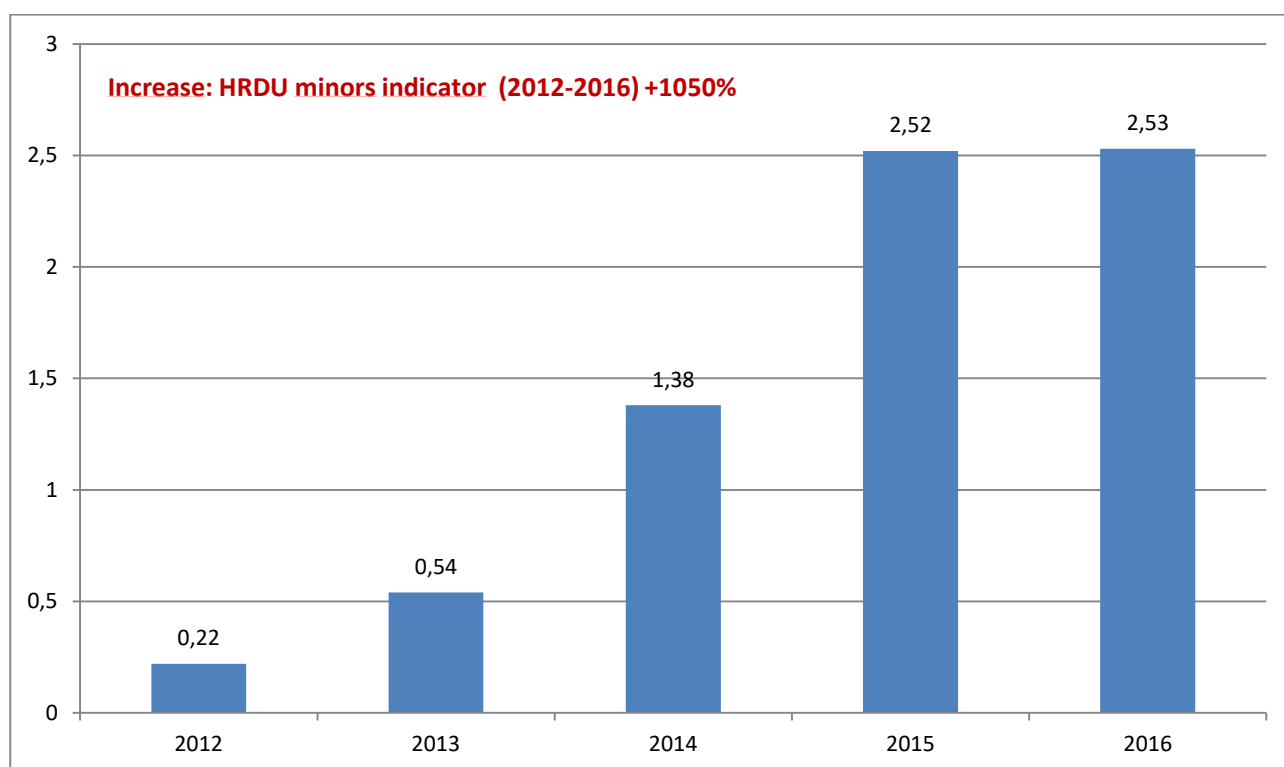
The proportion of hospitalizations of minors due to drug use is increasing (Figure 8) and two indicators are reported in Figure 9. In Figure 10 the age distributions of minors who were hospitalized in 2010 and 2015 due to different illegal substance use are shown. The percentage differences are also reported.

Figure 8. Number of hospitaliziations due to any drug use: minors (left axis) and total (right axis).
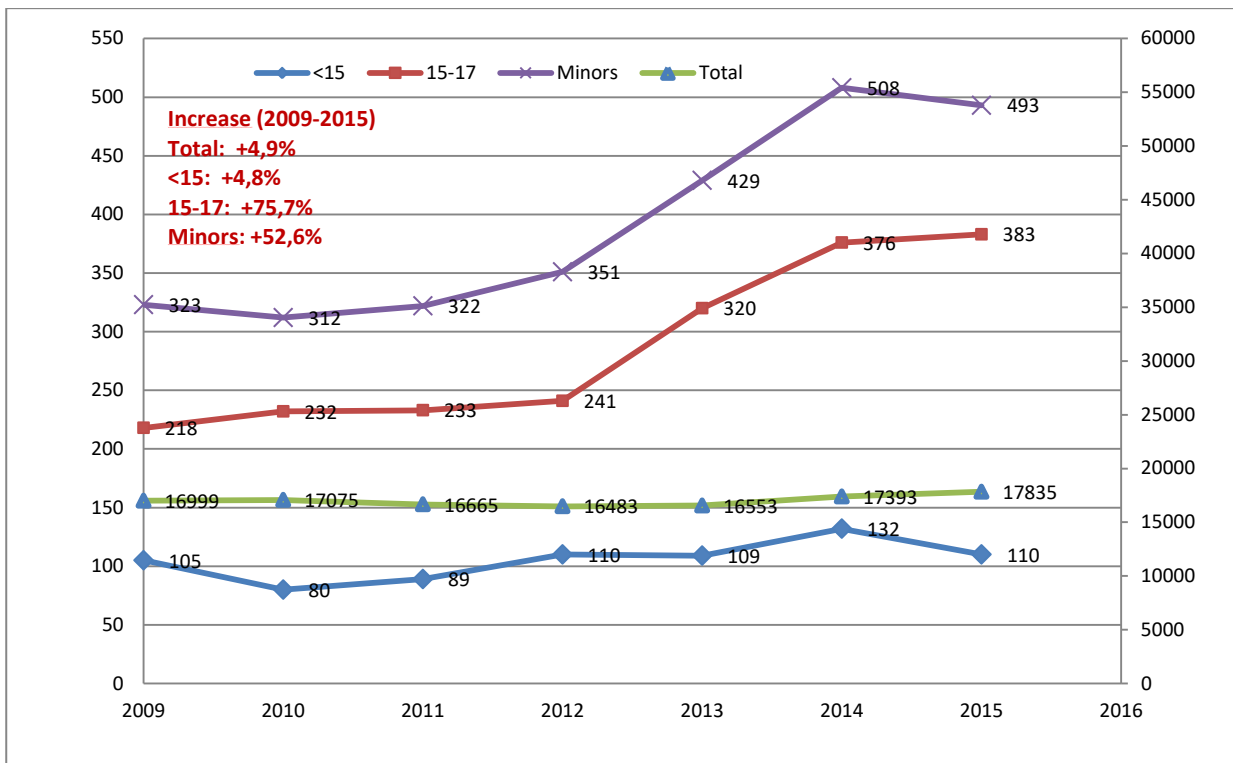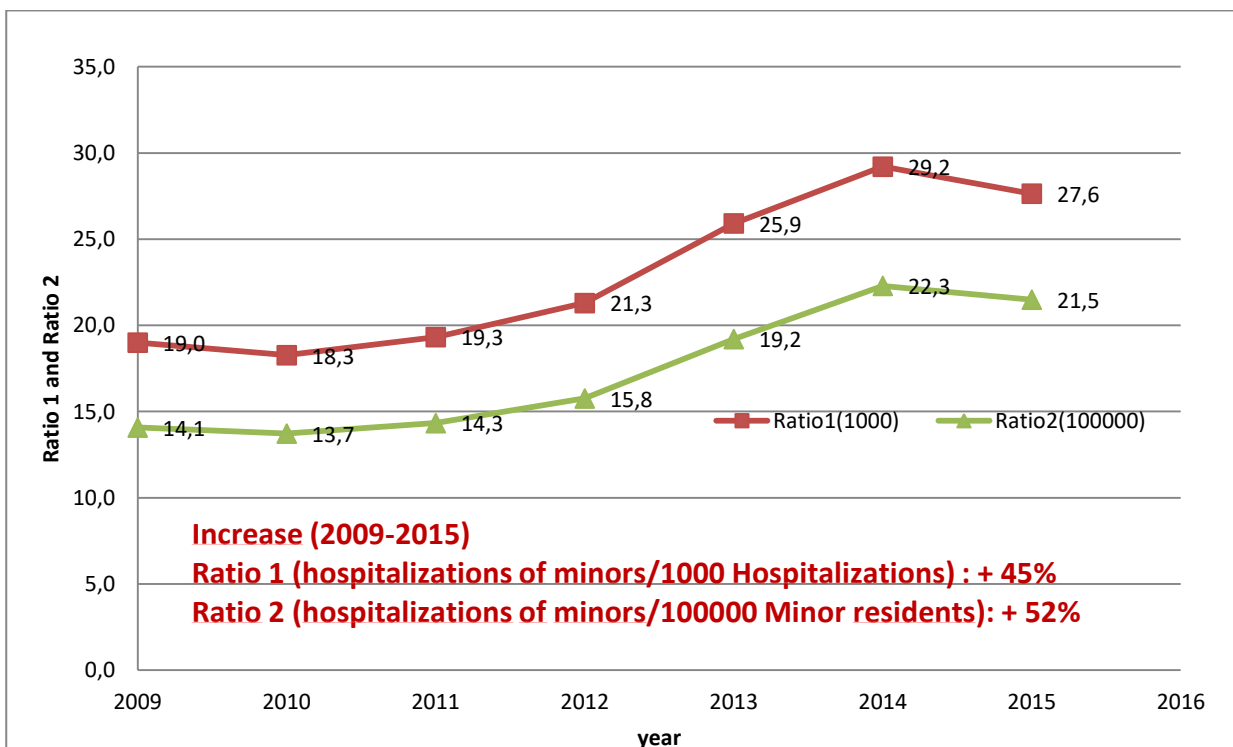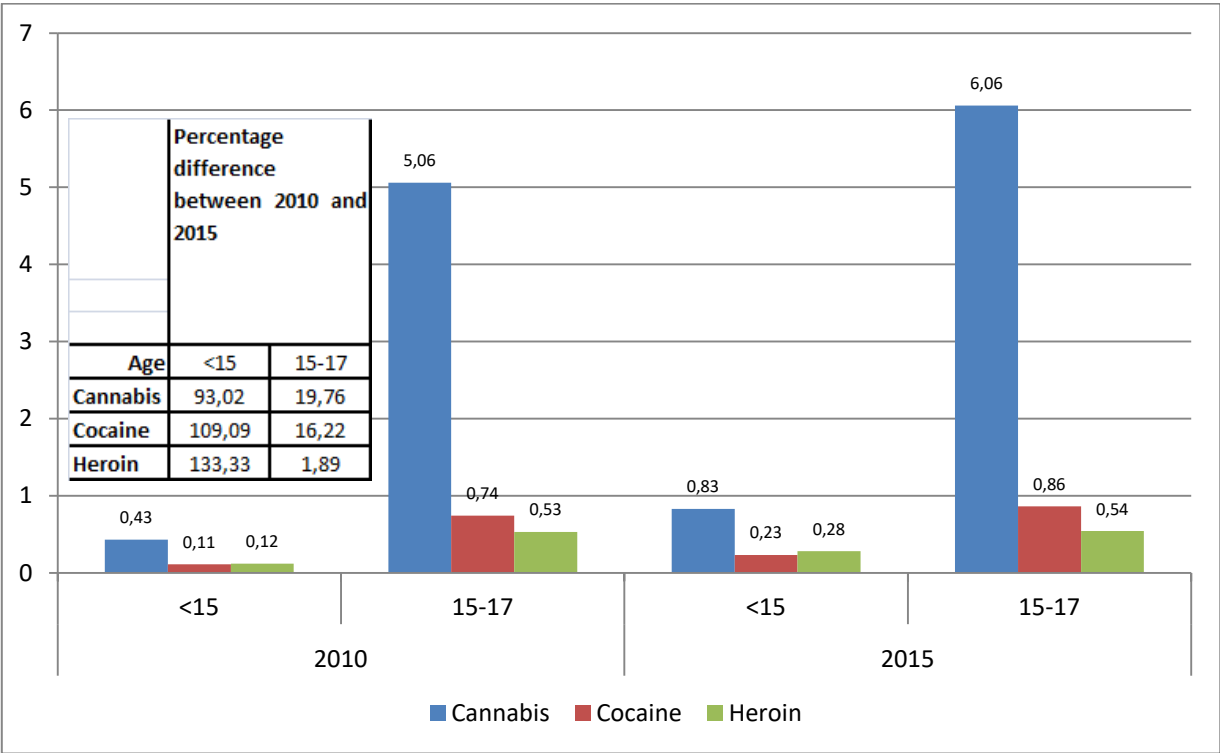

Figure 9 . Hospitalization of minors due to drug use (indicators).

Figure 10. Age distribution of minors who were hospitalized in 2010 and 2015 due to different illegal substance use.

The proportion of minors involved in criminal actions connected to High Risk Drug Use is increasing (Figures 11, 12 and 13).

Figure 11. A minors' Crime indicator: percentage of minors among subjects reported for drug dealing in 100 police operations.
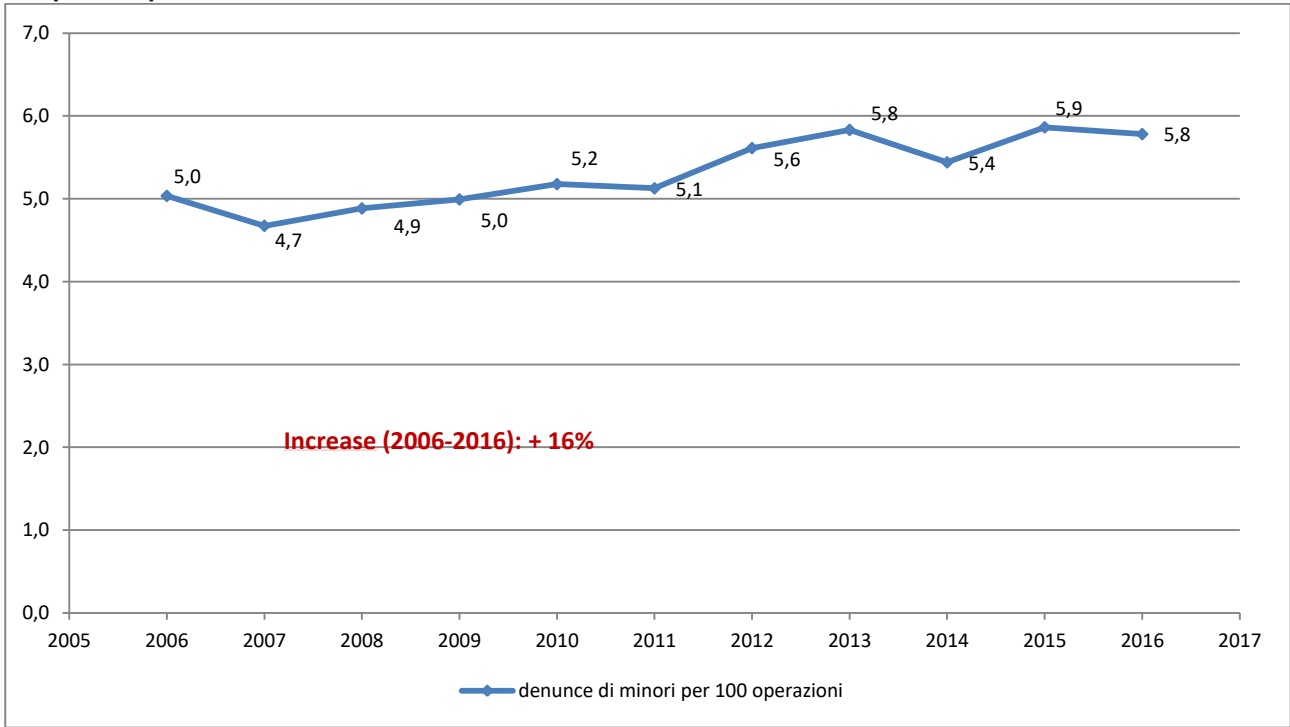
Figure 12. Crime statistics and indicator: number of minor defendants (left axis); number of legal actions for drug dealing (left axis); number of minor defendants per legal action (right axis).
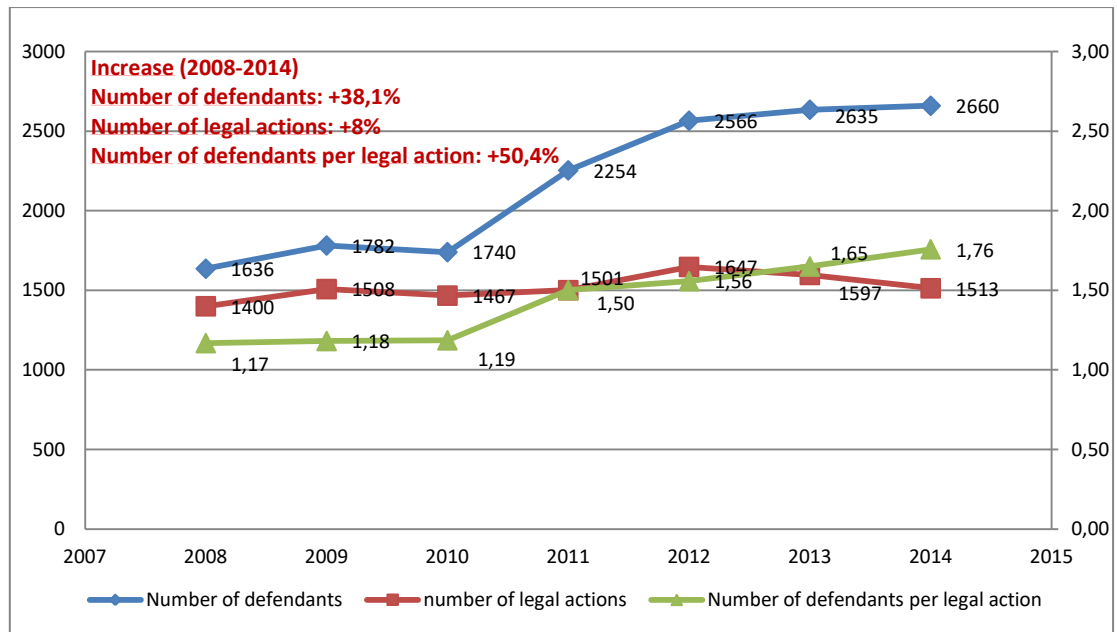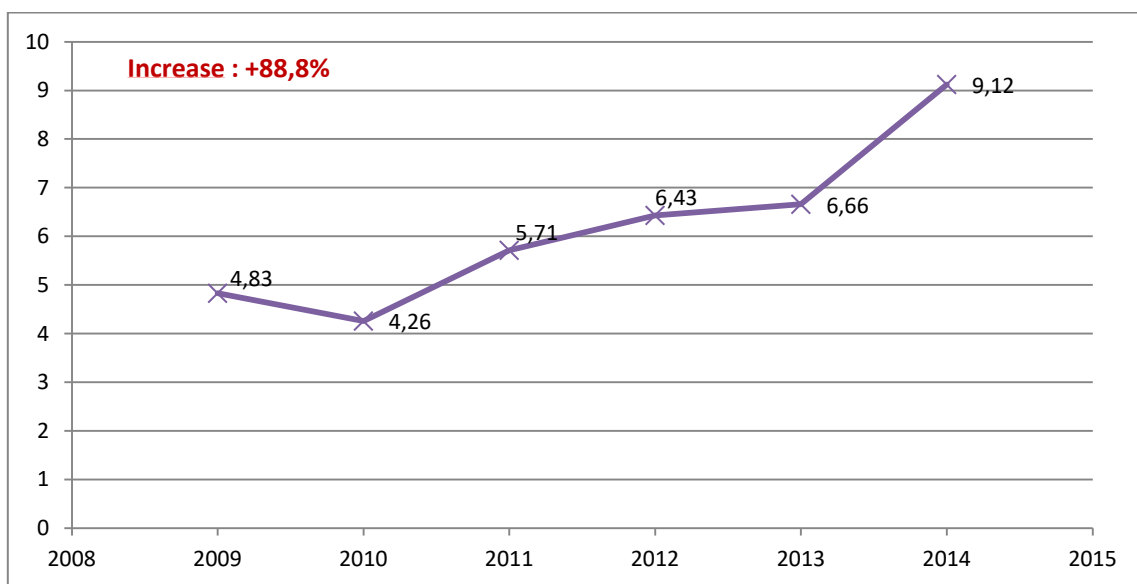

Figure 13. Proportion of minors defendants.

### 3. Law enforcement is expensive but ineffective.

From the analyses on the consequences of laws and anti-drug policies shown above, it is clear the high cost of the policies adopted. Other administrative data sets show that policy is also ineffective, measuring effectiveness with a new indicator.

According to the Anti-Mafia Headquarters official reports the seizure rate is between 5% and 10% of the total and it does not cause damage to the seller much different from what the supermarkets lose due to defects or the expiration of the products ... .. which we then pay for.

A very simple efficacy evaluation indicator is the ratio between the number of denunciations about drug crimes and the total (estimated) number of people committing the same crimes in the same period.

The results for the period 2009-2015 are reported in Figure 14.

Figura 14. Effectiveness of repression on labor market in%.
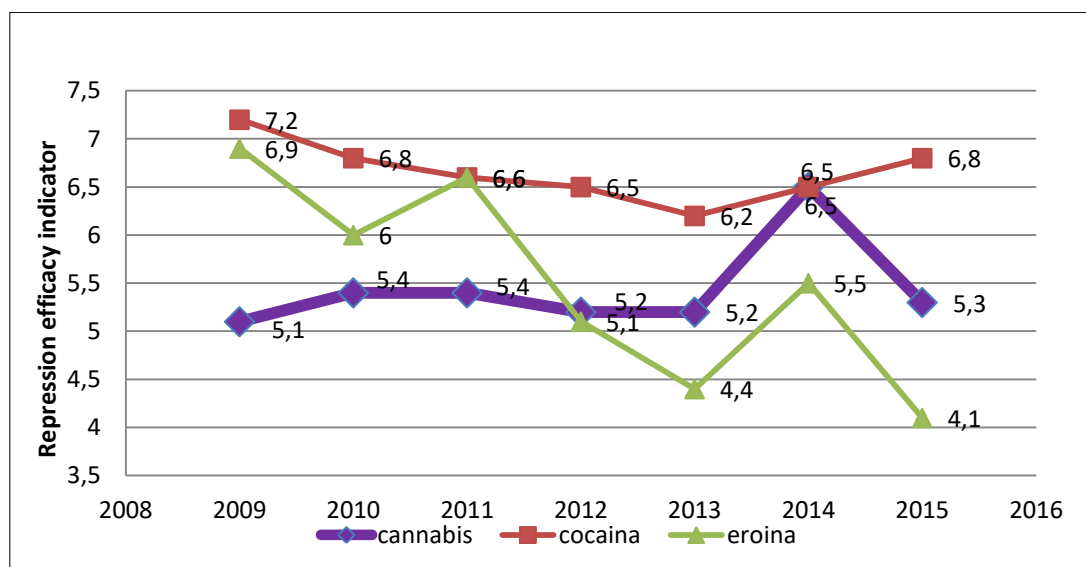
The ineffectiveness is also confirmed by the official data on retail prices of substances that do not show any price increases (Table 3).

Table 3. Average prices at retail market of 1 gram of substance.

substance (1 gr)	2012	2013	2014	2015
Hashish	**10,88**	**10,35**	**10,5**	**10,6**
Marijuana	**8,35**	**8,49**	**7,97**	**8,1**
Brown heroin	41,45	41,2	39,13	39,6
Brown heroin	62	61,5	60,25	60,25
Average heroin price	51,73	51.35	49,69	50,1
Cocaine	69,91	71,37	71,11	70,8

The ineffectiveness is also shown by the increase of the market (Figure 15). The official data and estimates (National Statistical Institute) show that the drug market is the most profitable illegal activity therefore more practiced; this is true in the whole world (Caserta and Rossi, 2013).

Smuggling of a legal substance (tobacco) exists, but it is irrelevant and about constant, as well as prostitution. The drug market extends continuously.

Figure 15. Official estimates of drug market's size of main substances in Italy (billion euros; left axis) and percentage changes (right axis)
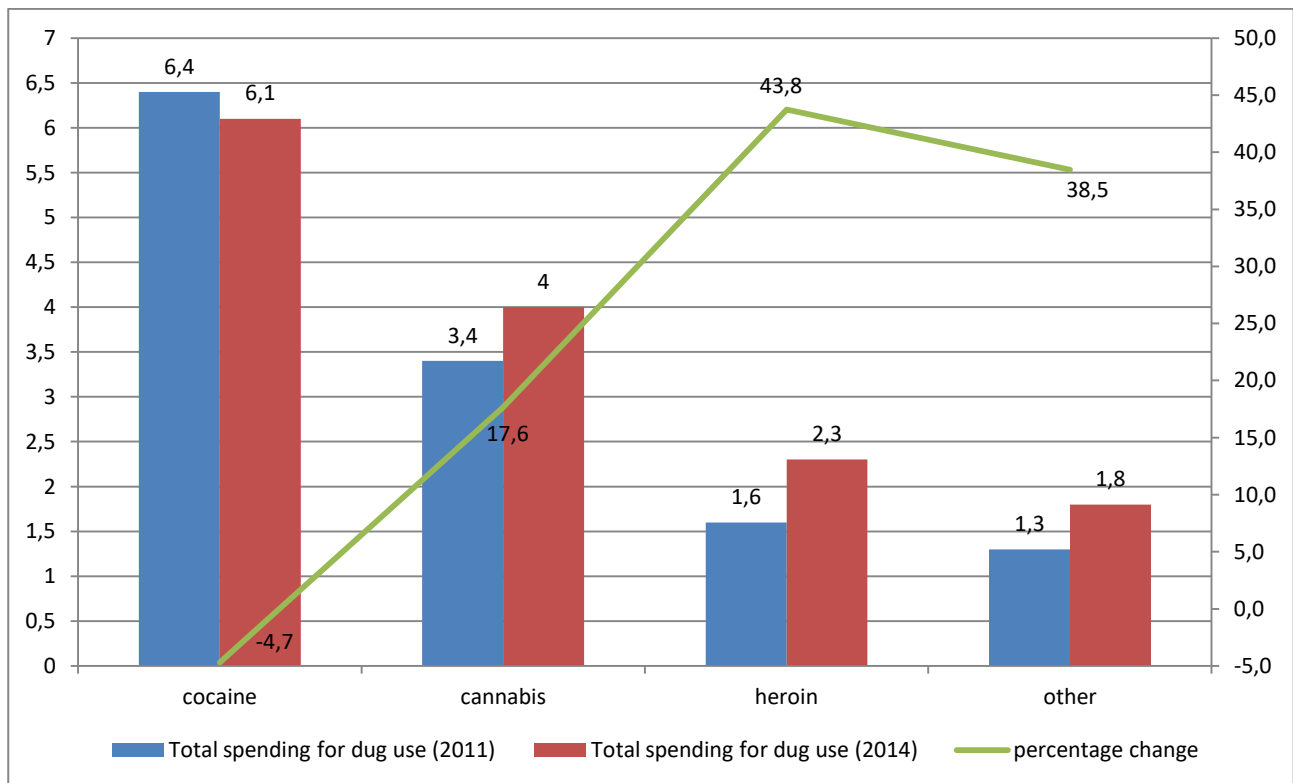
The earnings of criminal organizations are very high and increase over time, even in times of crisis (while GDP declines).

Gain is invested in many activities:

- illegal activities (other drugs ...);

- legal activities that pollute the economy;

- corruption;

- other activities (illegal immigrants ...).

The link between corruption and the drug market can be highlighted, as well as reducing the country's competitiveness for criminal infiltration into the economy.

It is a phenomenon in the eyes of everyone on the qualitative level, but one can also quantify it as shown in Figure 16 (drug market in the right axis).

Many other results (see References) could be shown and all suggest that the prohibitionist approach to drug laws and policies should be removed in Italy as all over the world.

Figure 16. Recycling, corruption, competitiveness.
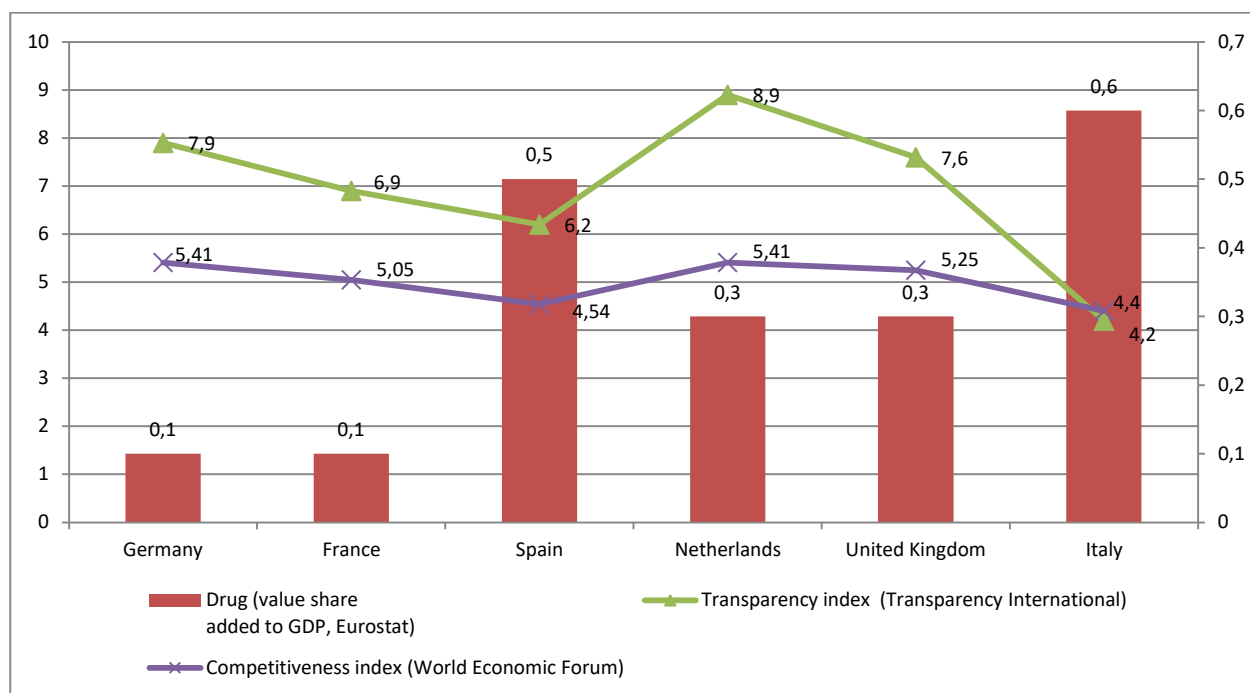
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