

ENFORCEMENT IN ILLEGAL MARKETS



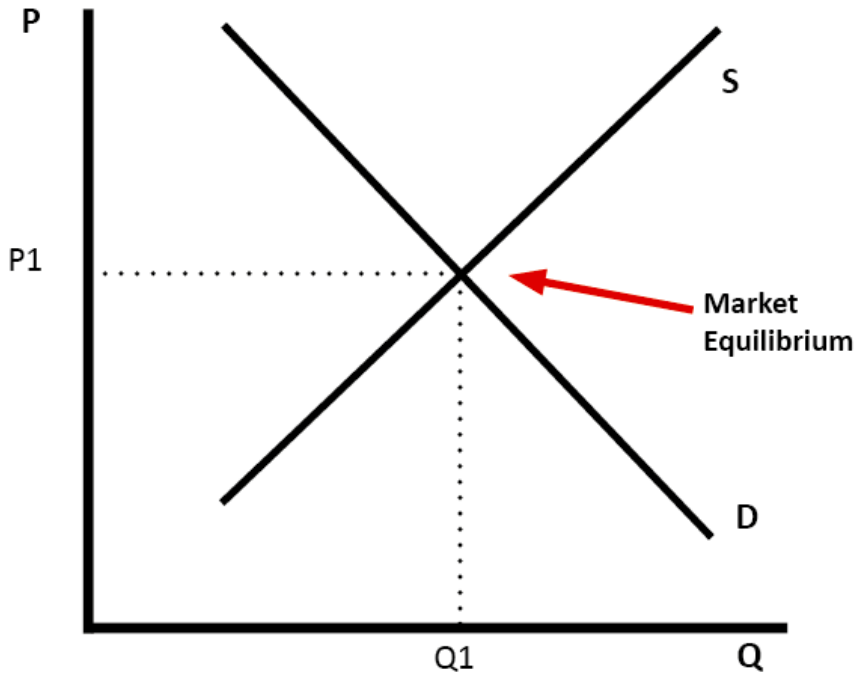
EVROPSKÁ UNIE
Evropské strukturální a investiční fondy
Operační program Výzkum, vývoj a vzdělávání



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Basic market model



www.economicshelp.org

What makes a market illegal?

It is illegal to produce and/or distribute and/or consume certain goods:

- drugs
- prostitution
- organ transplants
- gambling
- alcohol in some places at some times

Victimless crimes - voluntary transactions between buyers and sellers, very hard to justify the illegal status on efficiency grounds

What makes a market illegal?

- Why to forbid certain markets?
 - externalities, moral values,
 - **paternalism** (limiting/correcting irrational behavior - myopia, self-control problems etc)

Economists' interests:

- **markets and organization that cannot rely on public law enforcement and courts to settle dispute (violence, reputational contrats etc.)**
- Effects of the prohibitions
- What should be the optimal public policy?
- Large costs of enforcement - does it work?

What makes a market illegal?

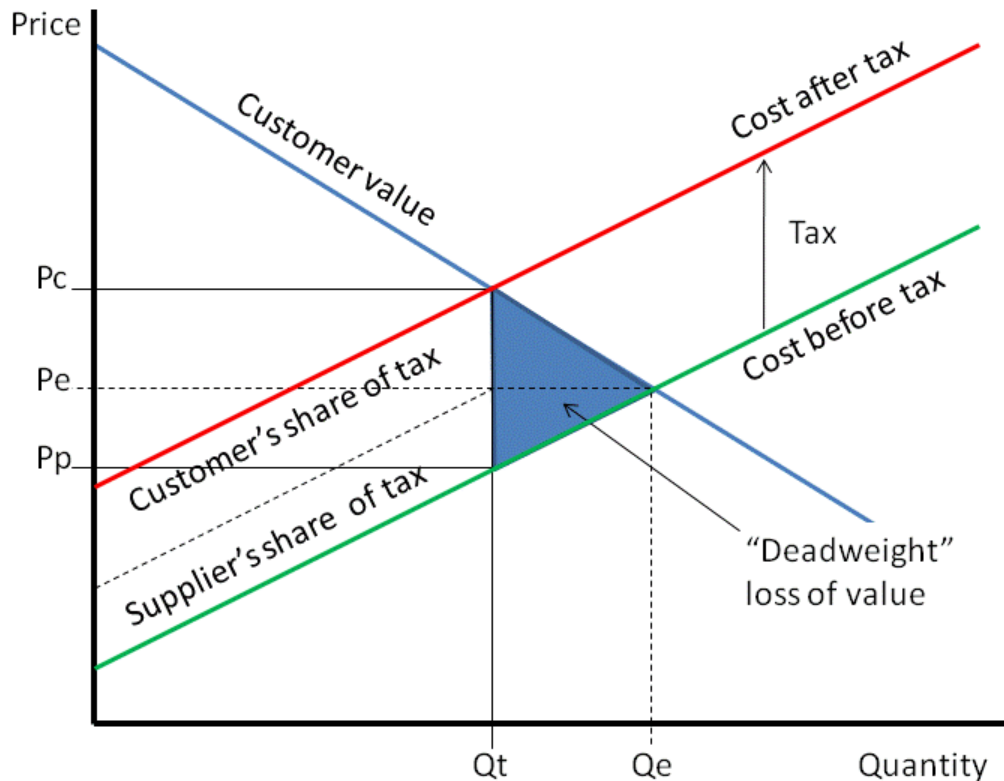
Illegal markets (in CR):

- Drugs
- Organs
- ...

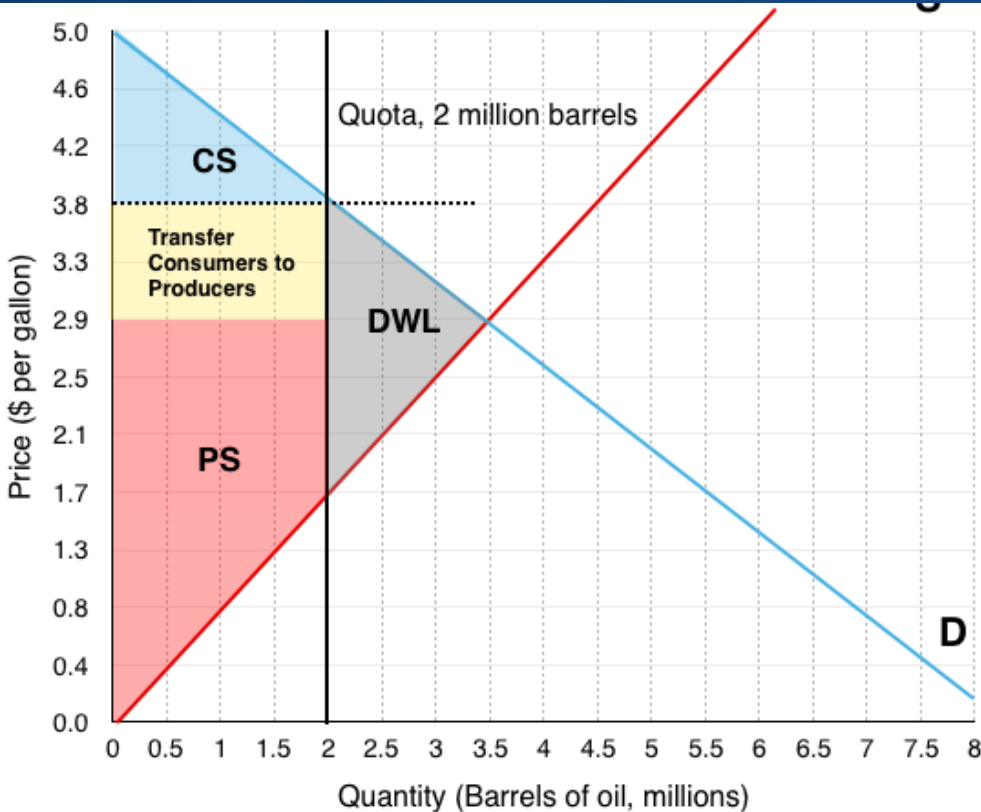
Taxed/Regulated drug markets:

- Prescription meds
- Alcohol (3.9. – 31. 10. 2012 prohibition on spirits)
- Tobacco
- Gambling services
-

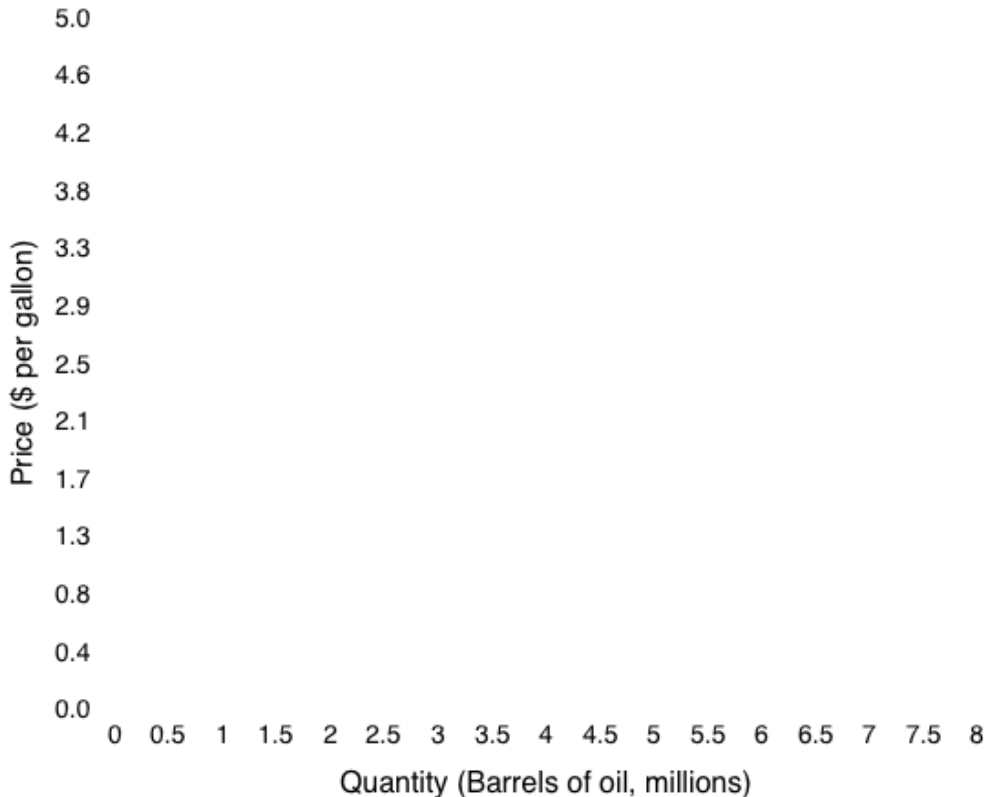
What can you do to reduce? Tax



What can you do to reduce? Quota

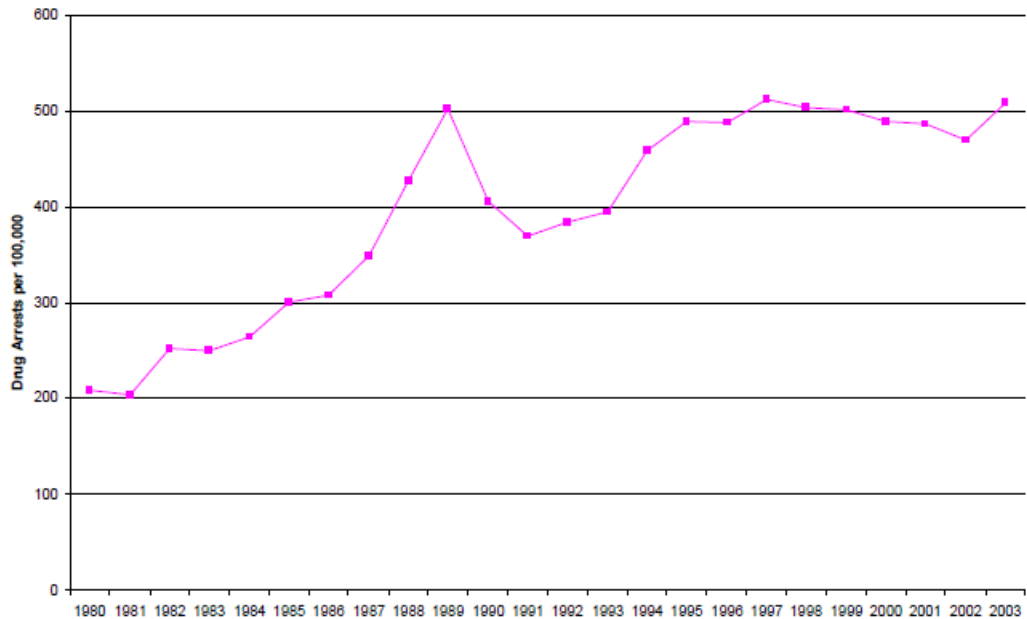


What can you do to reduce? Forbid?



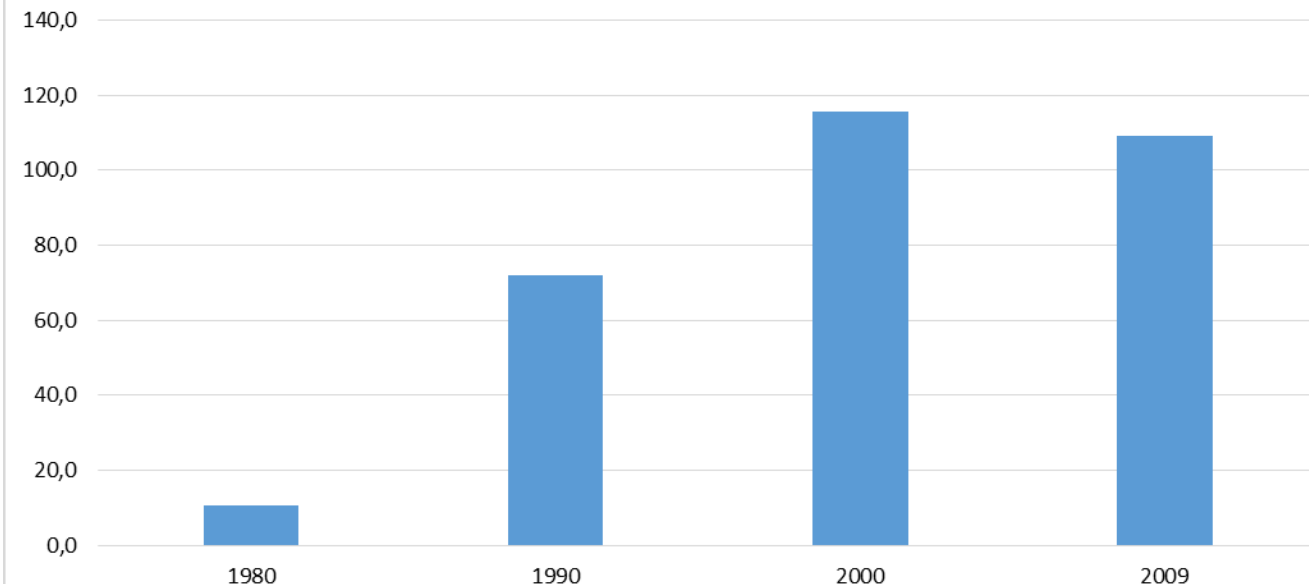
Size and growth in drug enforcement

Drug Arrests per 100,000 U.S. Residents, 1980 to 2003



Size and growth in drug enforcement

Drug incarceration rates, U.S. state and federal prisons
(drug prisoners per 100,000 population)

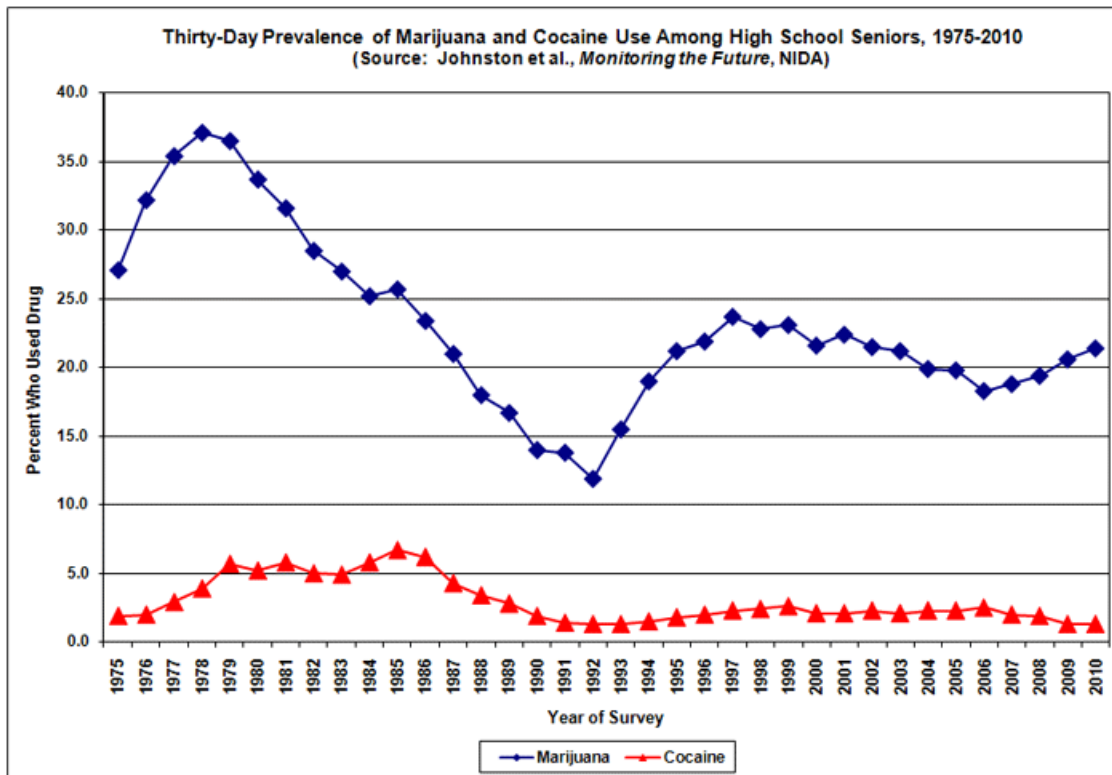


Size and growth in drug enforcement

Government expenditures on drug prohibition, USA 2008
(billions of \$)

	All drugs	Marihuana	Heroin/ Cocaine	Other
Total	48,7	13,7	22,3	12,8

Consumption trends (youth)



Czech police drug seizures

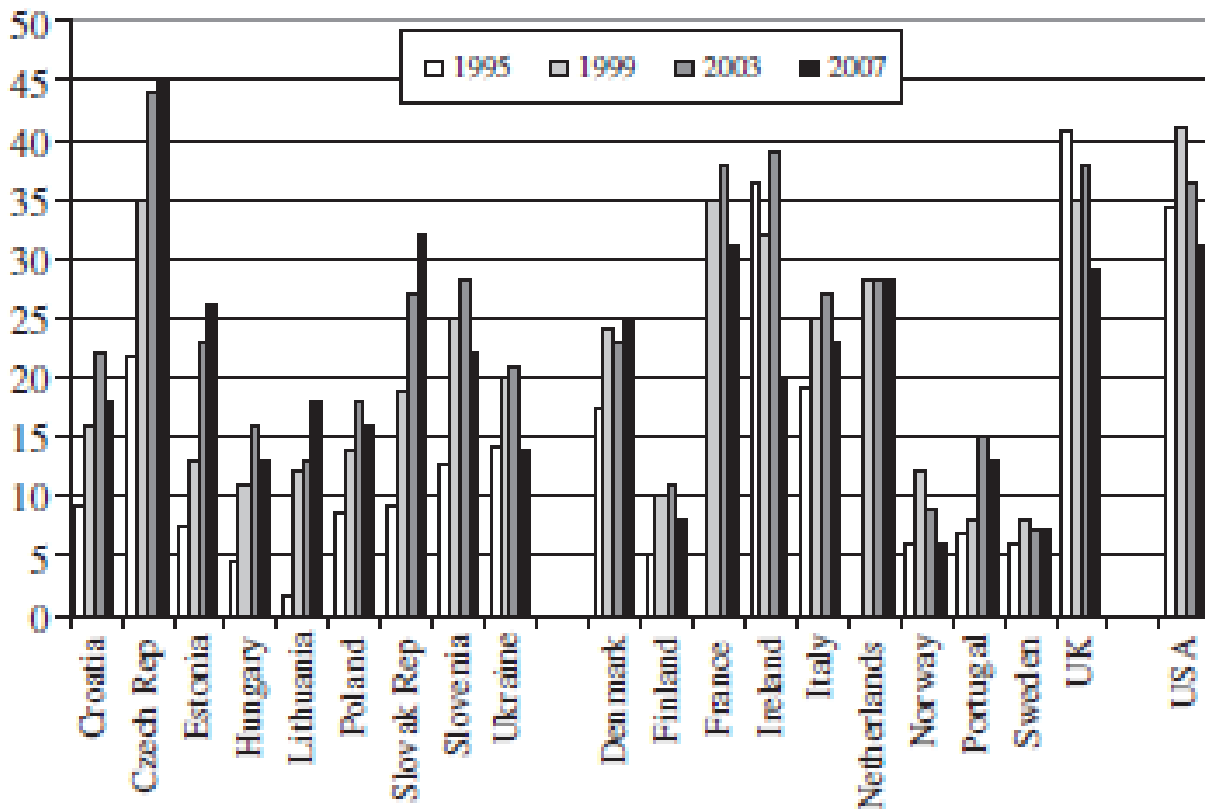
Cannabis

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
cannabis (g)	103 337	108 352	122 124	392 527	171 800	277 988	440 780	563 335	735 362	569 564	655 055
cannabis - plants	1 780	2 276	6 992	25 223	33 427	64 904	62 817	90 091	73 639	77 685	30 770
growhouse	11	17	34	79	84	145	165	199	276	301	220
hashish (g)	4 625	46	387	697	12 499	9 354	2 431	20 532	1 321	14 852	7 558

Methamphetamine

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
methamphetamine (g)	5 310	5 249	5 978	3 799	3 596	21 301	18 476	31 900	69 137	50 238	107 363
drug lab	261	416	388	434	342	307	338	235	261	272	263

Lifetime marihuana prevalence at age 16



What makes a market illegal?

Drugs and crime: do drugs cause crime?
And which channel?

- psychological channel
- committing property crime to obtain money to buy drugs. The implications of inelastic demand and enforcement.
- prohibition causes violence
- diversion of enforcement resources

Theory of enforcement in illegal

- Becker, Gary S., Kevin M. Murphy, and Michael Grossman. "The Market for Illegal Goods: The Case of Drugs." *Journal of Political Economy* 114, no. 1 (2006): 38-60.
- Key insight: Enforcement (prohibition) in illegal markets is bound to be ineffective and extremely costly if the demand is inelastic

BKG model

- What is the effect of taxes on production of anything? What are the best taxes?
- Positive and normative effect with tax on legal productions or illegal productions, drugs, prostitution
- War on drugs, no victory in sight

BKG model I.

Demand for drugs is assumed to depend on market price and cost imposed by government on drugs users.

Drug market price is affected by costs (enforcement, punishment, production)

$c(E)$ cost of production, depends on enforcement level E ,

Price on the market would equal $P_e = c(E) + T$, where T are costs on users thought punishments

$T = 0$ and $E = 0$, so that $P_e = c(0)$. no drug war

$E > 0$ but $T = 0$. drug war against traffickers

BKG model I.

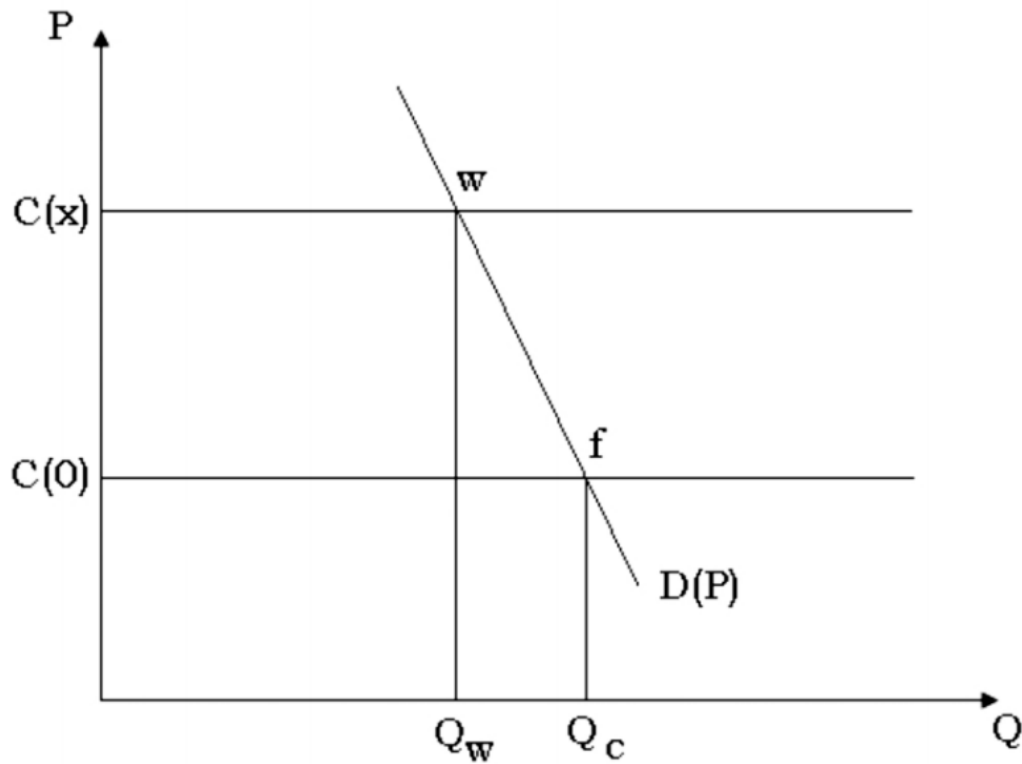
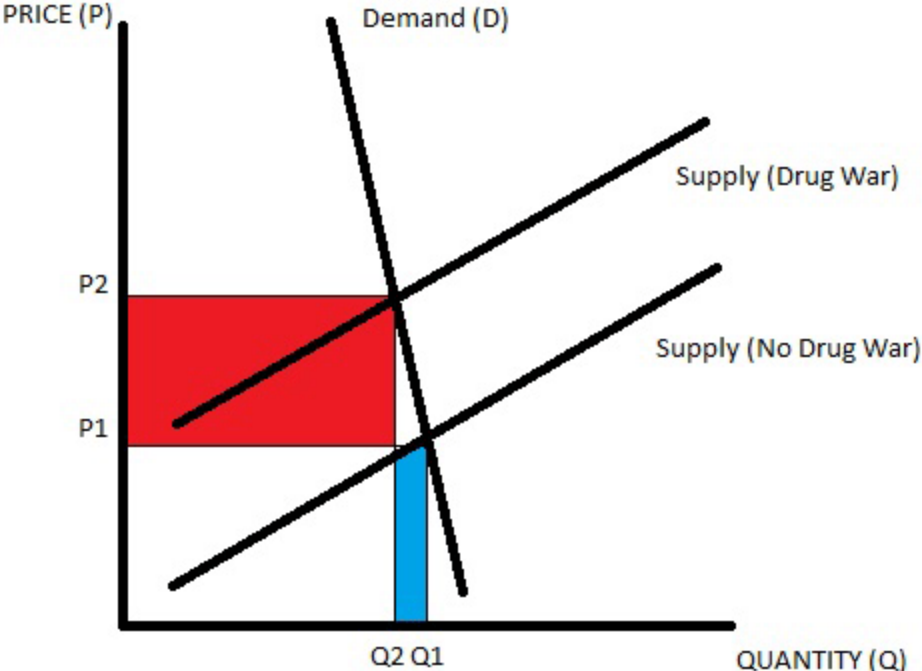


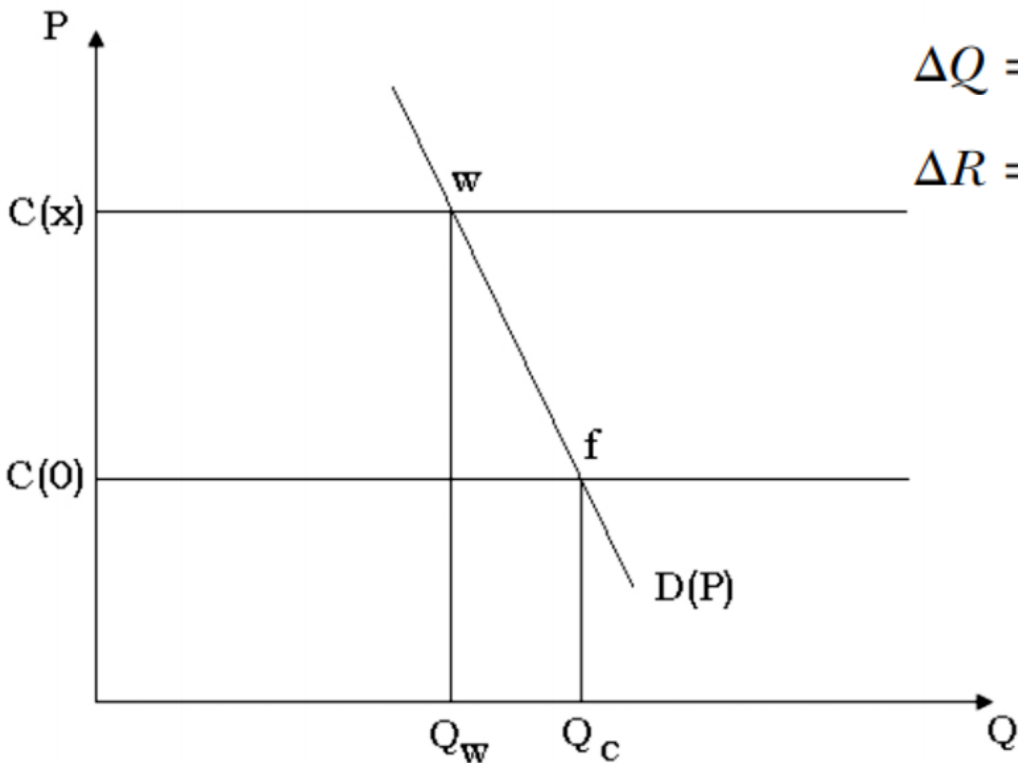
FIG. 1

BKG model I.

The Market for Illegal Drugs



BKG model I.

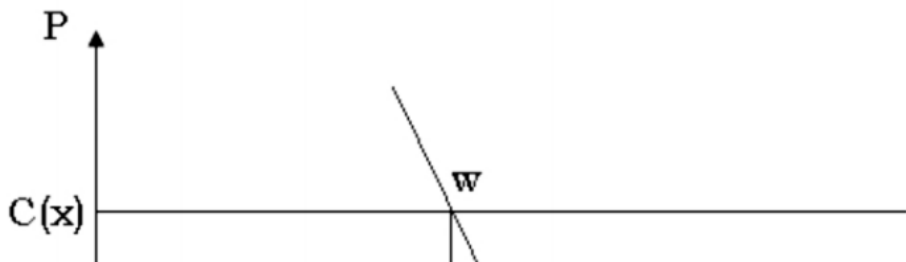


$$\Delta Q = \epsilon \Delta c,$$

$$\Delta R = (1 + \epsilon) \Delta c.$$

FIG. 1

BKG model I.



$$\Delta Q = \epsilon \Delta c,$$

$$\Delta R = (1 + \epsilon) \Delta c.$$

in consumer expenditures. Therefore, as equation (1) shows, total resources devoted to supplying drugs will rise with a war on drugs when demand for drugs is inelastic ($\epsilon > -1$), and total resources will fall when the demand for drugs is elastic ($\epsilon < -1$).

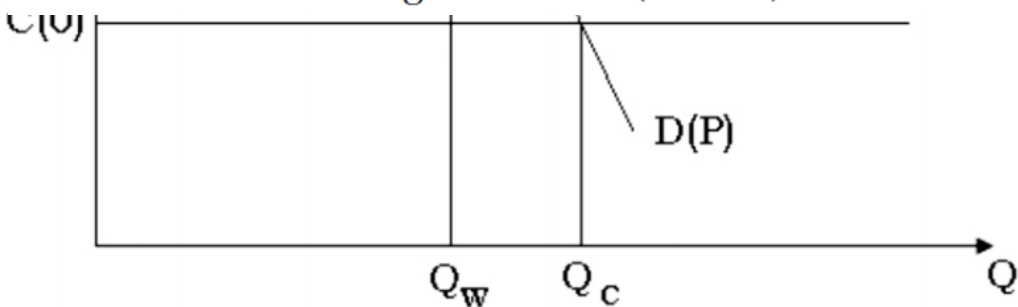


FIG. 1

BKG model II.

Q consumption of drugs

$Q = D(P)$ demand for drugs

F monetary equivalent for drug trafficker punishment

A private expenditure for avoidance of punishments

$p(E, A)$ probability being caught smuggling

$$\partial p / \partial E > 0 \quad \partial p / \partial A < 0$$

$\bar{c} = c(0)$ unit costs

F penalization per unit smuggled

$$\text{expected unit cost} \equiv u = \frac{c + A + p(E, A)F}{1 - p(E, A)}$$

BKG model II.

$$\text{expected unit cost} \equiv u = \frac{c + A + p(E, A)F}{1 - p(E, A)}.$$

Working with the odds ratio of being caught rather than the probability greatly simplifies the analysis. In particular, $\theta(E, A) = p(E, A)/[1 - p(E, A)]$ is this odds ratio, so

$$u = (c + A)(1 + \theta) + \theta F. \quad (3)$$

$$P = \min_A (c + A)(1 + \theta) + \theta F$$
$$-\frac{\partial \theta}{\partial A} (c + A + F) = 1 + \theta.$$

$$P^*(E) = (c + A^*)[1 + \theta(E, A^*)] + \theta(E, A^*)F,$$

BKG model II.

What they solve next:

- Decision of the government, aimed at reducing consumption below free market level using enforcement. Enforcement is costless, private value is higher than negative society value.

Results:

- With inelastic demand, the optimal decision would be to leave free market. Why?
- Cost imposed in suppliers due to enforcement brings higher price, that reduces consumption. But thanks to inelastic demand, revenue rises and costs rises.

...

BKG conclusions

- Taxes have major advantage over quantity reductions, if demand or supply are not elastic. Elasticity plays a major role!
- Taxes are preferable. They offer a legal way to make a business, punishment and enforcement then can be set to encourage legal production. (cheaper, then current solution).
- Demand reduction policies can have a major role. “just say no”. Solves the elasticity problem.
- More enforcement leads to increasing cost to producers, if they avoid detection they can reap a huge profits. War is creating a stronger enemy.

BKG conclusions

- The model is a possible explanation of why the war on drugs is such a failure. The U.S. governments spend (mid-1990's) \$20 billion on drug enforcement, 20% of state and 77% of federal prisoners (180,000 people in total; annualized cost around \$7.2 billion).
- The size of the market is estimated between \$10 billion to \$40 billion. That has not changed much.
- Surveys of consumption prevalence do not show a large change (about 35% of high school seniors report using marijuana in the past year).
- Larger and larger enforcement expenditures, higher P , inelastic demand, more resources ow into the drug business, that also raises the cost of enforcement.
- Simply can't eliminate the demand if it is inelastic, or you can but it is extremely expensive.
- Money taxes preferable to prohibition of production.

Another topic: Protected Animals

- CITES



All species shown here are protected by CITES

Another topic: Protected Animals

- CITES prohibits over-exploitation through international trade
- CITES prohibits export or import of live animals or dead parts of the animals
 - trade is possible only on permission
 - breeding in captivity is possible only under permission

What does it lead to?

Broad consensus among economists

2005 survey of AEA economists (Whaples, R. (2006). Do economists agree on anything? Yes!. *The Economists' Voice*, 3(9).)

- 62% for marihuana legalization
- 17% against
- Prohibition does more harm than good
- Legal, regulated market (at least for marihuana) is clearly a preferred option



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