In the nineties, Colombia became the main supplier of cocaine to the world markets. Estimations of total production and net revenues indicate that for 2001 this illegal business might have been responsible for 2% to 4% of the country’s GDP, depending on the number of hectares of coca leaf planted and productivity per hectare contemplated by different analysts. The war on drugs, specially its supply side for which Colombia is held responsible, consists of obstructing all the steps of this traffic, from curtailing the inflow of inputs, destroying crops and processing units, until transportation interdiction and dismantling domestic money laundering. This war has cost dearly to Colombia, both economically and institutionally. The direct effect of the war on drugs is an increase of cocaine prices. Therefore, its efficacy lies on a variable that measures consumers’ responsiveness to price increases, i.e. the price elasticity of demand in the U.S. The empirical evidence in this respect indicates a troubling result: it is inelastic (insensitive) in the short run, but elastic in the long run. The war on drugs makes sense only in the second scenario. Therefore, the question is: how short is the short run? The jury is still out in this respect.

Keywords: War on drugs, demand elasticity, cocaine, narco-trafficking

JEL classification: D12, K42
COLOMBIA Y LA GUERRA CONTRA LAS DROGAS, ¿QUÉ TAN CORTO ES EL CORTEO PLAZO?

Resumen

En los años noventa Colombia se convirtió en el principal proveedor de cocaína para los mercados mundiales. Estimaciones sobre la producción total y los ingresos netos de este negocio ilícito indican que pudo haber generado entre el 2% y el 4% del PIB colombiano en 2001, dependiendo del número de hectáreas cultivadas y de la estimación de productividad por hectárea que contemplan distintos analistas. La guerra contra las drogas, en especial aquella que se libra del lado de la oferta, y de la cual Colombia es considerado el principal responsable, consiste en obstruir todos los pasos que van desde impedir la llegada de precursores químicos, fumigar plantaciones y destruir unidades de procesamiento, hasta la interdicción del transporte hacia los mercados consumidores y el desmantelamiento del lavado de dinero de grupos ilegales internos. Esta guerra le ha costado caro a Colombia tanto económica como institucionalmente. El efecto directo de la misma es un incremento en los precios de la cocaína. Por lo tanto, su eficacia depende de la variable que mide la respuesta de los consumidores a las fluctuaciones de los precios de esta droga, esto es, la elasticidad-precio de la demanda en los Estados Unidos. La evidencia empírica a este respecto lleva a un resultado problemático: la demanda es inelástica (poco sensible) en el corto plazo, pero elástica en el largo plazo. La guerra contra las drogas sólo hace sentido en el último caso. Por lo tanto la cuestión central es: ¿qué tan corto es el corto plazo? Esta es una pregunta aún abierta.

Palabras clave: Guerra contra las drogas, elasticidad de la demanda, cocaína, narcotráfico

Clasificación JEL: D12, K42
1. Motivation

The war on drugs is a war against psychology. But not an ordinary type of psychology, the one that can be treated with a therapist and which basically affects the patient and his closest circle. Instead, we deal here with a special type of economic psychology, in which the crucial behaviour is grasped by the economic concept of price elasticity\textsuperscript{1}, and whose consequences can create fearful mafias, spread corruption, and devastate entire countries in moral, social and fiscal terms\textsuperscript{2}.

The purpose of this paper is to discuss the economic costs of both Colombian illegal drug business and the stubborn internal armed conflict, which became closely related a decade ago. First I will cover the drug business both internationally and within the country. It will be shown that the range of the magnitude of this business is not yet clear because there are big flaws in the numbers.

Second, I will cover some of the characteristics of the internal armed conflict and its economic consequences. Finally, the question whether this war on drugs is effective or not is addressed. It will be argued that although we have a clear idea of what to do for waging the supply side war on drugs (i.e. interdiction, eradication, spreading of weed killers, etc.), we do not have such clear ideas whether or not those actions are effective. Indeed, the empirical literature on the price elasticity of demand leads us to think that many if not all of these endeavours might be self-defeating. This in itself is a serious problem and a sobering thought, because it imposes on both, the academic community and the policymakers the responsibility of either changing direction, or telling our shattered societies that the costs resulting from the war on drugs might be in vain, and in spite of this, the course of action will be maintained. The paper is organized as follows, next section covers the size and structure of the world market of cocaine; section three addresses the supply-side of the war on drugs; section four tackles the cost of narco-trafficking and the conflict to Colombia; section five discusses the conditions under which the war on drugs is winnable; and section six concludes.

2. The world market and the supply of cocaine

Let us look at the evidence on the drug business. The international drug market is presented in Map 1\textsuperscript{3}, where continents’ shade depends on the hierarchy of drugs consumed. According to these data, more than 70% of Asian and European drug consumption consists of opiates; cannabis is more consumed in Africa (more than 60% of total drug consumption), whereas

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\textsuperscript{1} The price elasticity of the demand for a good indicates the per cent change in its consumption as a result of one per cent variation in its price.

\textsuperscript{2} James Q. Wilson eloquently compares the particularly damaging effect of cocaine vis-à-vis tobacco: “Tobacco shortens one’s life, cocaine debase it. Nicotine alters one’s habits, cocaine alters one’s soul. The heavy use of crack, unlike the heavy use of tobacco, corrodes those natural sentiments of sympathy and duty that constitute our human nature and make possible our social life” (quoted in Levitt, 2003). This does not mean, though, that instead of consuming cocaine people are advised to smoke.

\textsuperscript{3} The data are unweighted averages of treatment demand in a sample of either countries or cities in each continent. The source is the United Nations Office for Drug Control and Crime Prevention.
cocaine-type drugs are more consumed in the Americas (more than two thirds in South America and two fifths in North America). This is interesting because it shows that the natural market for cocaine-type drugs is the Americas. The UN estimates that 14 million people consumed cocaine at the end of last century.

Additionally, the data reveals that the market with the highest product diversity is North America, where both, cannabis and opiates are close to one fourth of total consumption; also that the behaviour of consumption seems to be highly determined by geography, since countries with quite different cultures and level of economic development share the basic consumption trend of a continent or subcontinent. Closeness appears to matter in the market of illegal drugs.

Map 1. Illegal drugs: the demand side

Map 2 shows the supply side of the cocaine market, where the arrows illustrate the alleged routes of illegal trade. Clearly, Peru, Bolivia and Colombia provide the biggest share of this substance. The arrows follow all types of routes illustrating the recursiveness and stubbornness of people when profits (and interdiction) are at sight. Some of these routes go from Colombia to Mexico and the USA, and others through Africa to Europe. This shows that the drug business has become an intricate multinational network of global relationships.

Source: Global Illicit Drug Trends, UN Office for Drug Control and Crime Prevention for year 2000.
Since the mid 1990s Colombia has become the biggest world supplier of cocaine. At the beginning of that decade, Peru and Bolivia had the biggest share of cocaine leaf cultivation. But Colombia’s production proxied by hectares planted jumped from less than 50 thousand to 140 thousand in a span of six years (see Figure 1). As a result, the country’s estimated contribution to total production went from 100 metric tons at the beginning of the decade to approximately 600 tons at its end. Until the middle of the nineties, the country was mainly a manufacturer of the coca paste produced in Bolivia and Peru, and the main source of profits accrued from the transport to the US market either directly or through the Caribbean and Mexico. Currently Colombia has integrated vertically the whole chain of production: coca leaf cultivation, chemical processing, high purity cocaine production, and transportation to the world markets.

Figure 1 illustrates the chain of cocaine cultivation, production and transportation. There are two different estimates for the value of Colombian production of cocaine for 2000 and 2001. According to the first one, the
The market value of annual production is estimated in US$5.4 billion\textsuperscript{4}. The assumption is that 163 thousand hectares were cultivated; the productivity per hectare was 2,400 kilos of coca leaves, and 4 crops were collected per year. That would be the value at the ports of the importing country. In order to obtain net revenue to Colombian traffickers\textsuperscript{5} it is necessary to subtract the costs of each step and the losses incurred due to interdiction and other risks involved. An estimation of such costs is as follows: the cost of inputs for the chemical processing (the “kitchen”) for that amount of production is around US$430 million; domestic consumption absorbs approximately US$16 million; transportation costs, where real risks are involved and the biggest profits generated, are estimated in US$2 billion. Additionally, the interdiction in Colombia is calculated to cost traffickers US$360 million yearly, and outside Colombia, US$260 million. Finally, the estimated cost of money laundering is US$350 million. Therefore, the net income out of the initial US$5.4 billion is US$1.9 billion, which represents 2.3% of Colombian 2000 GDP.

Figure 2. Estimation of revenues and costs of Colombian drug business

Alternatively, the National Planning Department, a governmental think tank, has reasons to believe in slight variations of the basic assumptions for 2001, namely: 194 thousand cultivated hectares producing 5.400 kilos of coca leaves per hectare (instead of 2.400 of Fig. 2), which would yield a gross yearly revenue of US$ 8.7 billion for the Colombian drug industry. This is almost twice as much as the one estimated in Figure 2. In this case, subtracting the estimated costs and leakages already mentioned, the net income for Colombia in 2001 would have been US$3.3 billion, 3.9% of GDP.

\textsuperscript{4} These data and calculations were kindly provided by Ricardo Rocha of the Economics Department at Universidad de Los Andes – CEDE. Current figures (2003) are supposed to be smaller due to destruction of plantations.

\textsuperscript{5} Colombian traffickers are known to manage distribution chains in different areas of U.S, Spain, and other European countries. This part of their business is not contemplated here.
It is important to note that both estimations provide figures that, as percentage of GDP, are lower than those estimated for the mid 1980s, when infamous drug baron Pablo Escobar was at the peak of his business. At that time, net revenues accruing to the country were estimated in US$2.5 billion, representing 7% of GDP (Steiner, 1997). However, the measurement of the number of hectares cultivated and the productivity are understandably inexact. Hence, we can take the two scenarios mentioned as a lower and upper bound for this period; therefore, these sources indicate that in recent years Colombia has dealt with an illegal business of a size between 2-4% of its GDP. One should bear this in mind when considering the impact of this illegal business on the economy.

Let us compare these numbers with some estimations of the street market in the U.S. According to the study on the finances of drug gangs by Levitt and Venkatesh (2000), a kilogram of powder can be used to produce between 10,000 and 15,000 bags of crack-cocaine, which typically sell for about US$10 each. Therefore, the street value of a kilogram of cocaine converted into crack would be between US$100,000 and US$150,000. Rhodes, Langenbahn and Kling and Scheinman (1998; quoted by Levitt, 2003) present a total figure for the expenditure in illicit drugs in the US close to US$60 billion. Recall that according to Map 1, cocaine is estimated to be 42% of the American illegal drug market, which would imply that the gross market value of cocaine sold is US$25.2 billion, between 7 and 12 times the value of Colombian powder delivered to the American ports, depending on the two situations considered above (see Figure 2). Finally, these authors estimate that there are 3.3 million weekly cocaine users in 1995, approximately 1 percent of the US population.

3. The war on drugs: the supply-side

The purpose of the supply-side approach to the war on drugs is to cut all the links in the cultivation-production-transportation chain presented in Figure 2. The economics behind such strategy is the approach championed by Nobel Prize winner Gary Becker (1976), according to which the optimal amount of enforcement depends on the cost of catching and convicting offenders, the nature of punishment (fines, prison terms, etc.), and the response of these offenders to changes in enforcement. Increasing the probability of conviction is the most important part of this strategy, and should be accompanied by higher punishment. These two things are crucial in affecting the criminal’s calculations, and in deterring crime.

The Colombian and US Governments have cooperated for more than a decade pursuing a comprehensive interdiction strategy aimed at:

1) Hindering the inflow of inputs, which represent between 5%-8% of the total costs. As a matter of fact, 80% of sodium permanganate, a crucial input, allegedly comes from China and the rest from Germany. It should be possible to have good statistics and accurate data regarding the China/Colombia

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transactions on this chemical product. If this is so, it would be possible to identify the sources as well as the flow of sodium permanganate. In reality, however, it is always harder to tackle this flow.

2) Increasing the cost of production through eradication, which consists of spreading a weed-killer on the crops. This is an unpopular action both in those zones and among members of the Colombian parliament because of its harmful impact on the environment and on the neighbour population. As Figure 3 shows, eradication is one of the most used strategies by the Colombian government, and in recent years has considerably reduced the number of hectares to a current number allegedly below 100 thousand.

Figure 3. Yearly growth of illicit crops, 1995 - 2003
At every quarter previous four quarters.

3) Increasing transportation cost which represents between 20%-40% of the total costs. Transportation is the most vulnerable phase in the business; indeed, if interdiction is able to stop the small airplanes along with their pilot and the cocaine shipment inside, then the supply side of this business is harmfully hit. Both, the airplanes and the pilots are quite difficult to find and replace. Increasing the cost of transportation through aerial interdiction is considered to be the most effective strategy. In order to achieve this, better surveillance with the use of radars and satellites is needed, as well as improved response capabilities, including air force and navy infrastructure in Colombia and a tougher US and other countries’ response once the drugs have left Colombian frontiers.

4) Fighting against money laundering, which comprises 6%-7% of total costs. The Colombian Ministry of Finance has advanced in this respect. However, in the World Economic Forum in Davos in 2001, one of the conferences was named “Money laundering, are we really serious about this?”, in a clear indication that European and US bankers did not consider it a priority. Some steps have been taken, but the issue is mostly unresolved.
5) Finally, higher penalties; the most effective and feared measure in this front is the extradition of Colombian drug dealers to the US. This used to be the most controversial issue in the times of Pablo Escobar (who preferred “a grave in Colombia than a prison in the US”; see Matthiesen, 2000). In the last decade it has become a usual practice.

4. The cost of narco-trafficking and the conflict to Colombia

There is enough evidence about the positive correlation between cocaine exports and the dramatic increase in the number of homicides in Colombia since the mid 1980s. Serious research has also established that the size, in terms of men in arms, and scope of the guerrillas and paramilitaries in Colombia is closely related with the cocaine business, at least during the last decade (see Bottia, 2003). According to official sources, at present these illegal armed groups are composed jointly of more than 30,000 people. The number of municipalities in Colombia that have been hit by violence also increased sharply during the 1990s, and there is an increasingly important branch of literature7 that studies the regional pattern of diffusion and its devastating consequences.

The Presidencia de la República - Colombia has estimated that between 1991-96 the annual income of the guerrillas (whose most powerful groups are FARC and ELN) was between US$370-680 million, out of which 41% was supposed to come from the illegal drug business; 20% from extortion, robberies and kidnapping; and 39% from corruption and investment8.

One crucial question is the cost of the conflict for the Colombian economy. Different figures have being proposed, following a battery of methodologies. The results are revealing:

1. Rubio (1997) concluded that the economy loses 2% of GPD yearly because of the conflict.
2. Granada and Rojas (1995) obtained annual costs of 4.2% of GDP.
3. Echeverry et al. (1999) estimated that the value of the illegal business of the guerrillas is 7% of GDP.
4. A related question, which is the elasticity of private investment rate to homicide rate, has been computed to be -0.66.
5. An important research currently undertaken at the Universidad de Los Andes – CEDE has concluded that the long run negative effect on growth is a yearly loss of 1% of the GDP (see Sánchez, 2003).

Therefore, according to these estimates, the annual cost of the conflict can be between 2% and 4% of GDP in the short run and one percent in the long run, which is a considerable amount.

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7 Research undertaken at the Economics Department of Universidad de Los Andes – CEDE leads this important branch of literature in Latin America, see Sánchez et al. (2003).
8 These figures might have increased due to the fact that the guerrillas now have, arguably, a bigger share of the coca business.
Based on a sample of internal armed conflicts across the world between the Second World War and the end of past century, Echeverry et al. (2001) studied the relationship between the duration and intensity of the conflict and the loss of growth. The conclusion was that short conflicts are more expensive in terms of growth, and exhibit a considerable loss of private investment. There does not seem to be a relationship between loss of growth and intensity (measured as the number of deaths). Within this sample, Colombia is regarded as having very long and brutal conflicts, which have repeated themselves with quite long duration (more than ten years in both occasions), a feature shared only with Sudan. However, until 1995 the Colombian conflict did not have a sizable impact on the economy.

This phenomenon has changed since then because growth performance decreased dramatically in Colombia between 1996 and 2003, compared to previous decades. Some authors consider the conflict as the main culprit for such decline in economic activity (Cárdenas, 2002). The channels through which the economy is affected are the subject of a growing research.

In sight of the evidence presented so far, some questions come to mind about the strategies adopted in the war on drugs: 1) should Colombia keep pursuing this conflict? The Andrés Pastrana Government (1998-2002) answered negatively and initiated a three and a half yearlong peace negotiation, granting the guerrillas a territory the size of Switzerland. However, the guerrillas were never really serious on their intentions of negotiating a reasonable peace agreement. In contrast they regarded this as an opportunity for augmenting their grasp of the drug businesses, escalating urban and rural violence, and securing strategic areas for drug trafficking and arm smuggling businesses. The Uribe Government (2002-present) chose to escalate the confrontation and to convince the guerrillas that they can and will be defeated, and that cocaine plantations can be destroyed at a faster pace than they are created.

2) How to confront the external ramifications of the war on drugs in terms of institutional debasement, corruption and delinquency? During 1995-1998 Colombia witnessed an impeachment trial to the president for allegedly having accepted US$6 million from Cali Cartel drug barons for his presidential campaign. The effects have also reached the justice system, the military and the police.

And 3) How to tackle the impact of the war on drugs on the economy as a whole? And on the public finances in particular?

There are many indirect ways in which the war on drugs and the fight with the guerrillas (a difference that is increasingly blurred), are currently affecting the economy: military spending is taking resources away from better uses, like providing public goods and services. The pipeline, energy transmission and road infrastructure is being subject to constant attacks. Finally, kidnapping and ransom contribution to the guerrillas have escalated and affected not only affluent people, but also the middle class. The least favoured neighbourhoods are subject to constant stress, and have become fighting ground between the
guerrillas and the paramilitaries. Poor areas in the countryside are affected by violence, and forced displacements of the population have spread around the country. Small businesses that were the source of employment for a considerable share of the labour force are now under increasing stress.

Colombia, however, cannot decide on its own whether continuing this devastating war on drugs, or pursuing other alternatives. It faces constant pressure from the US, the country that absorbs most of the production of illegal drugs and the most important partner in the war, as well as from European Governments and NGOs. In spite of the country’s efforts, one frequent claim from US officials is that while that country spent between 7%-10% of GDP during World War II, and Korea and Vietnam wars, Colombia is only spending 3.5% of GDP, out of which only half really goes into fighting capacity (the rest is spent in pensions for the military). A big difference with the conflicts mentioned is that all of them were fought far away from the American borders, most of the military equipment used was produced domestically in the US, and no harm was done to their continental infrastructure as a result of those conflicts. None of this is true in the case of the Colombian war on drugs. The fight occurs inland, most of the arms, helicopters, interdiction airplanes, radar infrastructure, etc., are imported, so positive demand impact on the military industry is absent in Colombia; and, as it was mentioned, the destruction of infrastructure is considerable. Not to mention the fatal consequences on institutions in Colombia. The general attitude found in European governmental and NGO circles is different. There is mistrust to the Colombian Government and military regarding its commitment to Human Rights, and a repeated conviction that this war can not be won by either of the combatants. In this view, there should be no alternative but a negotiation with the guerrillas.

5. Is the war on drugs winnable?

From an economist’s point of view, the key factor for answering the question about the effectiveness of the war on drugs is the price elasticity of demand. If demand is elastic, as supply is reduced as a result of the war on drugs and price goes up, total revenues of the drug business will decline as well as the resources devoted by these people to wage the war. Hence, the strategy will pay, and crime will increasingly not. However, as it will be explained below, if the true scenario is the opposite, and price elasticity of demand is less than one, the situation becomes rather complicated. Becker, Grossman and Murphy (2001) persuasively argue that this second scenario is the most realistic in the light of the evidence of the last ten years. Therefore, there are many reasons to believe that the war on drugs might be self-defeating.

Becker et al. (2001) argue that interdiction efforts aimed at reducing drug consumption can increase the price of drugs via three sources: 1) drug enforcement rises the cost of supplying drugs to the consumer; 2) drugs become less available; and 3) the implicit price to consumers is raised by the risk of apprehension and/or criminal prosecution for the purchase, possession or use of illegal drugs (p. 4). If the demand for drugs is inelastic, then expenditure on drugs will increase as a result of the war. The increase in
expenditure can be expressed as $\Delta E=(1+\epsilon) \Delta C$, where $E$ is consumer expenditure on drugs, $C$ are costs of providing drugs in the streets, and $\epsilon$ is the price elasticity of demand. The change in resources devoted by narco-trafficking through the chain of production, transportation and distribution to supply drugs will be equal to the change in consumer expenditure. Hence, when the demand for drugs is inelastic (i.e. $-1<\epsilon<0$), the imposition of the war on drugs will escalate the resources devoted by the drug traffickers to supply drugs.

Back-of-the-envelope calculations on the market for drugs in the US are as follows: the estimation of the current market for illegal drugs is roughly US$60 billion per year. The price of illicit drugs is assumed to have multiplied by 4 its free market level as a result of the drug war, and $\epsilon$ is assumed to be $-1/2$ or smaller. Hence, if drugs were legalized, the market price would be one fourth its current level, consumption would double and the total expenditure would fall to one half its current levels, namely US$ 30 billion per year.

According to this line of reasoning, as a result of the war on drugs the resources devoted to supply them have doubled, exactly the opposite that was intended! While the amount of drugs sold has been actually reduced to half, a fact that could be interpreted as a progress, the end result has been to strengthen the monster one is trying to destroy. The undesirable increase in revenues to producers and traffickers should be added to the additional costs imposed to society for imprisoning offenders, the cost of crime and violence, and the increase in corruption of governmental, policing and judiciary activities.

The authors argue that if the American society spends roughly the same amount in fighting this war that the drug business does in response to it (i.e. US$ 45 billion), then “the total cost to society of drug production under the war drug would be roughly $105 billion or three and a half times what it would be with a free market for drugs (and seven times the competitive cost of producing the equilibrium quantity of drugs of $15 billion). [...] With inelastic demand, efforts to solve the problem by fighting harder will, in many ways, just make things worse” (p. 7).

When drug cartels are considered, an additional feature is born: differential enforcement may be optimal from the point of view of the producing cartel. The reason is that enforcement increases street price of drugs, and hence revenues to the cartel, while its costs are concentrated on non-cartel suppliers. That is the logic of the attempt to corrupt police and judges and to send them against competitors. For Colombia, this explanation rings many bells regarding the protracted war between the Cali and the Medellín Cartels during the drug wars of the eighties and the first half of the nineties; it is also the case today between the paramilitaries and the guerrillas.

The proposal of Becker et al. (2001) is legalization with taxation. The idea is to mimic via taxation the street price that is obtained through the expensive recourse of the war. The final goal is still to reduce drug consumption below the unrestricted competitive market level. One big difference is that instead of
allowing illegal cartels to reap part of the total revenue, it would be the government who would collect it in the form of taxes (the tax rate would be 300%, with the parameters mentioned above).

In the extreme case, and with the numbers presented so far, the American government could obtain as much as US$ 45 billion, the cost of production and distribution would fall to its competitive level (US$ 15 billion), and that nation could save most of the efforts diverted in this war. Hence, the total positive effect for the public finances could be as high as $90 billion, and even more for society as a whole if those savings were used to reduce other distortionary taxes. Of course, the incentive to evade the taxes and to sell illegally would be present and some enforcement would be necessary to counter them. Even in the case that the current policing and judiciary infrastructure is still necessary, the fact that the actual producers would not be violating the law would decrease the costs of corruption and violence, and government revenues would be enhanced.

Saffer and Chaloupka (1999) would disagree with such dismal view of the war on drugs depicted by Becker and co-authors. They estimate an empirical model to grasp the effects of criminal justice spending and public health spending either through deterrence, education and treatment, or via an increase in illicit drug prices. They find that total drug control spending has a negative and significant effect on drug use. The sole effect of Criminal justice spending is found to be significant. Police and correction spending appears significant in some regressions, as well as defence. That is not the case of public health expenditure. They interpret the effectiveness of policing in light of the crime and punishment literature, which maintains that it is more important to increase the certainty of arrest than increasing the severity of the sanction.

The crucial issue then is the per cent change in demand as a result of a one per cent increase in illegal drugs, what economists name the price-elasticity of demand. The calculation of this variable is difficult, since prices are not readily available, demand estimations depend on surveys, the consumption of different substances varies through time and it is affected by social and demographic patterns. As a matter of fact, according to NIDA (1975-1996)\(^9\) the percentage of “final year high school students who respond to have consumed marijuana, cocaine or crack” has fluctuated during the last two decades; those consuming cocaine rose from 8% in the mid seventies, to nearly 17% in the mid eighties, and finally dropped to around 6% in the early nineties. Finally, following Levitt (2003), another issue has to be considered, since empirical elasticities found under the prohibition regime cannot be extrapolated to an eventual new legal regime; however, as he also admits, we only have an informed guess for what would prevail in such a world.

The current evidence on such elasticities is an important piece of evidence when assessing the alternative public policies regarding illicit drugs. In what

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\(^9\) Figures calculated by the National Institute on Drug Abuse -NIDA presented by Matthiesen (2000 p. 100).
follows we present the own price elasticity of demand for cocaine obtained by different studies during the last decade.

According to Saffer and Chaloupka (1995), own price elasticity of demand is between –0.72 and –1.1. These authors cite studies by Di Nardo, from 1993, in which demand for cocaine showed no sensitiveness to price. Grossman, Chaloupka and Brown (1996) estimated the long-run price elasticity of demand (defined as: participation multiplied by frequency given participation), as –1.18, 66% higher than the short run elasticity, found to be –0.71. A permanent 10 per cent reduction in price might increase the number of users in nearly 8%, and would increase the frequency of use among users in nearly 3%. Grossman and Chaloupka (1998, cited by Licardo and Chaloupka) report a short run price elasticity of demand for cocaine of -.96 and a long run one of -1.35 for young adults.

Chaloupka, Grossman and Tauras (1998) obtain price elasticities for youth, as follows: for the past year, -1.28 and for the past month, -1.43; they also report a short-run price elasticity of demand for cocaine of -.96, and a long run price elasticity of -1.35 for young adults. Now, as expected, adults tend to be less price sensitive than youths; young men were found to be more prone to use cocaine than young women; white young men and especially affluent ones are found to use more of this substance than black and than poorer youths (income elasticity was estimated in .55 for youths). Unemployed youths are more likely to use cocaine than employed ones, and cultural and family factors like regular attendance to religious services or to live with both parents are related with less use of this drug.

In sum, the evidence on the price elasticity of the demand for cocaine is not conclusive, but it provides the agenda for discussing important issues of public policy. One remark is due regarding the low elasticity used by Becker et al. (2001) to perform their calculations and to criticize the effectiveness of the war on drugs. Indeed, the -.5 price elasticity used by them is lower than the lowest estimation presented in the previous paragraphs, except for the Di Nardo study. Hence, such a low number appears to be the exception rather than the rule. Finally, for us the difference established by some authors between the so-called short-run and long-run elasticities is essential. However, if the short run is long enough an uneasy feeling pervades regarding the whole war on drugs. Such strategy would then be self-defeating and very costly institutionally, economically, environmentally and socially.

The second aspect is the legalization strategy, and whether or not it is available as an alternative. In their analysis, Becker et al. (2001) consider the social consequences and political difficulties of their proposal, stressing that legalization would probably increase consumers in more affluent areas and reduce the external costs in poor neighbourhoods, currently ravaged by street gangs and insecurity in the US and the dramatic consequences presented for the producing countries, in particular Colombia.

In this regard, *The Economist* magazine and a group of intellectuals have defended this strategy and have criticised the whole approach of the war on
drugs. However, Colombia is caught in the middle of a very tricky international issue, and cannot count on these alternatives, at least in the short-run, whatever its duration. Hence, considering legalisation seriously would defy common sense, at least for the next decade. We have to cope with the current stance and to find alternatives to legalization. This is also the conclusion of the recent study on the variety of angles of the issue of legalization undertaken by the National Planning Department (Vergara et al. 2003). Having said that, it is crucial to increase our awareness of the economic circumstances in which this war is fought, which are crucial to determine whether it is a futile or an effective effort.

6. Conclusion: how short is the short run?

The theory on the war on drugs is eloquent in the binary situation derived from the true price elasticity of demand for drugs. If such economic/psychological indicator is less than one, the current confrontational strategy against drugs would be flawed and its pursuit would only have devastating consequences. That would be the explanation for the failed attempts to crash this business during the last decade. This message is turned upside down if that demand happens to be elastic. The sensitiveness to price increases is then the crucial factor.

To make things more problematic, two measurements are available for this variable in the US, the relevant market for these estimations: one inelastic for the short run, and another one elastic for the long run. The reliability of these measurements, and how stable they remain across time social strata, regions and countries, and legal regimes are open questions. However, taking into consideration the current evidence, the crucial issue is how short the short-run is, and whether countries like Colombia can afford whatever duration we can calculate for the war on drugs.

Let us briefly discuss the first issue. The duration of the short run, defined as the span in which drug consumers, addicts or not, are willing to pay higher prices to keep consuming fairly the same amount of drugs they are used to, is something difficult to tackle on empirical grounds, and likely to be highly idiosyncratic. Poor African Americans in Harlem might easily have a shorter short-run than actors in Hollywood; and the average Colombian might also react differently than the average American due to its preferences, culture, social permissiveness, legal framework, enforceability of law and income level. The existence of close substitutes and access to treatment should also help to shorten that span.

Once we find out what a reasonable duration of the short run is, the question whether a country like Colombia can endure waging a war at its current scale should be considered. In other words, this war, fought already for two decades with no appreciable signs of victory, has scared Colombia’s leading

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10 In 1984 the Minister of Justice, Rodrigo Lara Bonilla, was killed by gunmen following Pablo Escobar’s orders, a fact that ignited the war between the Colombian Government and establishment the drug gangs. Its first manifestation was the use of the extradition treaty signed with the US as a tool against drug barons with no charges in Colombia but with pending legal claims in the US.
entrepreneurial class through extortion and kidnappings, has weakened the country’s sources for growth and its public finances, has allowed drug related money to purchase entire regions and imposed the paramilitary rule to combat guerrilla activity and fight for the command of more illegal activities, and finally has corrupted some elements of the armed forces, and the political and judiciary systems. These sizeable consequences represent a test for Colombia’s institutional and economic sustainability. The key question is whether Colombia is solid enough to wait until the long run arrives, when price elasticity of demand turns to be higher than one, and appreciable results can be achieved.

There seems to be a lot to know before we can give a reasonable answer to these questions. Meanwhile the current strategy will prevail. The proposal of Becker et al. consisting of legalizing and taxing such activities poses an interesting intellectual challenge and a serious alternative for public policy.

Nowadays we have to tackle the negative impact of the conflict on economic growth. What can happen during the next ten years? There have been important transfers of property from the legal economy to the barons of illegal drug businesses. Poverty and income inequality have worsened since the middle of the 1990s. We have presented evidence of the huge impact the conflict has had on the Colombian economy and institutions, and the need to work on imaginative and challenging alternatives. The dismal conclusion so far is that for most of the critical questions on the effectiveness of the current war on drugs, the answer is: we do not know.
References


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