Montreal
Economic Institute
Research Papers

Pierre Lemieux

Department of Management Sciences
Université du Québec en Outaouais

The Underground Economy

Causes, Extent, Approaches

November 2007

Pierre Lemieux
Department of Management Sciences
Université du Québec en Outaouais

The Underground Economy

Causes, Extent, Approaches

Montreal Economic Institute Research Paper

•

November 2007

Montreal Economic Institute
Ideas for a More Prosperous Nation

Ideas for a More Prosperous Nation

6708 Saint-Hubert Street
Montreal, Quebec
Canada H2S 2M6

Telephone: (514) 273-0969
Fax: (514) 273-2581

Web site: www. iedm.org

The Montreal Economic Institute (MEI) is an independent, non-profit, non-partisan research and educational institute. It endeavours to promote an economic approach to the study of public policy issues.

The MEI is the product of a collaborative effort between entrepreneurs, academics and economists. The Institute does not accept any public funding.

The MEI is a registered charity as defined by the applicable federal and provincial statutes. Therefore, it issues receipts for income tax purposes.

One-year subscription to MEI publications : $125.00.

The opinions expressed in this study do not necessarily represent those of the Montreal Economic Institute or of the members of its board of directors.

The publication of this study in no way implies that the Montreal Economic Institute or the members of its board of directors are in favour of or oppose the passage of any bill.

Production supervision: MB Conseil
Cover, cover photos, design and typesetting: Guy Verville

ISBN 2-922687-17-1

Legal deposit: 4th quarter 2007
Bibliothèque et Archives nationales du Québec
Library and Archives Canada

Printed in Canada

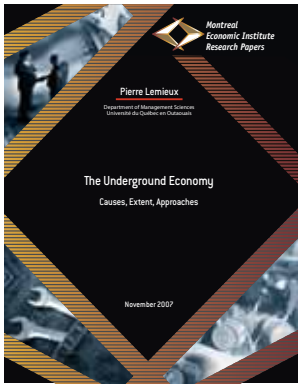
Contents

Pierre Lemieux

Montreal Economic Institute
Ideas for a More Prosperous Nation

The Underground Economy: Causes, Extent, Approaches

Executive Summary



The *underground economy* (or *illegal economy*) covers market production of goods and services, legal and illegal, which are sold or purchased illegally. It is composed of both the *irregular economy*, where legal goods and services are produced and exchanged under illegal conditions, and (productive) *black markets*, the preserve of goods and services that are illegal but satisfy all the parties involved.

History presents us with a large number of prohibition and taxation events that gave rise to contraband. However, smuggling and other forms of underground markets are not only a historical phenomenon, but an everyday fixture of contemporary economies: drugs, alcohol, fuel, tobacco, etc. One should not think of the underground economy as only black markets or smuggling on irregular markets. The irregular economy mainly includes otherwise legal services sold "under the table" like labour services sold to businesses or individuals (in residential construction and renovation, for example).

The underlying cause of the underground economy is found in Adam Smith's celebrated *Wealth of Nations*. Smith saw the foundation of modern society in the division of labour, which itself came from "a certain propensity in human nature (…) to truck, barter, and exchange one thing for another". Every time the propensity to exchange is constrained, individuals try to circumvent the constraints in order to obtain what they perceive as the benefits of exchange.

The main impediments to exchange that push individuals to the underground economy are taxes, regulations, and prohibitions. Empirical research shows that the underground economy is larger in the countries where these impediments are more consequential.

Economists have devised a number of methods to measure the overall level of the underground economy, and have applied them to many countries. Different methods often produce wide discrepancies in results.

The many estimates of the Canadian underground economy that have been made since 1976 range from 1.4% to 100% of official GDP, both because of different definitions and different methods of measuring it. Statistics Canada's estimate for 1992 (the latest one available from this agency) puts the underground economy at 5.2% of GDP: 4.2% for the irregular economy and 1.0% for black markets. Presented as a maximum for 1992, Statistics Canada's estimate appears credible as an estimate of today's underground economy.

Even if the underground economy is not as large as some analysts have claimed, its impact on public policy is multifaceted and potentially significant, and has been much debated by economists and non-economists. One standard criticism against the underground economy relates to its usual association with tax evasion. However, taxes paid or not paid are a transfer, not a cost in the economic sense. Another type of cost often ascribed to the underground economy is that it neutralizes, at least partly, the public policies that generated it and, thus, reduces the benefits of these policies.

It cannot just be assumed that public policies are "good" and that underground markets are "bad". "Good" and "bad" (or "evil") are moral notions. Economists try to analyze the underground economy, like any other phenomenon, without making moral judgments – also called "value judgments" or "normative judgments". This is an important point which is often overlooked. The economist will want not only to make explicit any unavoidable value judgment underlying his policy prescriptions, but to minimize such judgments too. The less moral content there is in his policy prescriptions, the more scientific they will be. A value judgment in favour of trade and Smith's "propensity to barter" is probably the least taxing moral assumption we can make. How we evaluate

public policies and the underground markets they generate, whether the benefit of the doubt is given to the former or to the latter, also depends on the underlying theory of the state that the analyst uses.

To deal with the underground economy, four public policy approaches are possible. The first alternative is more repression: impose higher penalties to participants in the underground economy. Besides resource costs (more police and customs officers, more jails, etc.) and marginal-deterrence costs, other costs would be incurred, by the participants of the underground economy and by third parties. Moreover, from a historical viewpoint, it seems that no repression has ever eliminated illegal markets.

The second alternative would be to search for the optimal underground economy: weigh the net cost of every underground market against the net benefit of the public policy that generated it. If the public-policy-with-underground-market generates a net cost, the public policy would be abandoned; in the opposite case, the public policy would be retained, and the generated illegal market considered a necessary cost to get the benefit of the public policy. The economic costs of underground markets, which are often costs of the public policies that have generated them, are numerous and complex: resource costs and other costs of repression, productivity costs, rent-seeking costs, violence costs, quality costs, misallocation of entrepreneurship, social capital costs (honesty, etc.), distortion of economic data, dangerous dynamics. Sometimes, illegal markets provide the benefit of protection against inefficient public policies. Scientific evaluations of all these costs and benefits are impossible, for both theoretical and practical reasons; indeed, they are never made.

The third alternative is doing nothing, letting the underground economy develop as it will. This would increase the actual costs of illegal markets and seems a risky option with unforeseen consequences.

The only remaining alternative is to abolish or modify the public policies that generated the underground markets in the first place. This solution is shared by many economists. Abolishing to the extent possible the impediments to exchange on open markets is the only solution that takes seriously both the Smithian vision of exchange and the impossibility of detailed cost-benefit analyses.

Introduction

Definitions

The *underground economy*, which I will also refer to as the "illegal economy" (or "underground markets" or "illegal markets"), is that part of the economy where goods and services are produced, exchanged or consumed illegally. These activities are illegal either because the production or consumption of the goods or services is forbidden by law (recreational drugs or some prostitution services, for example) or because legal goods or services are exchanged under illegal conditions (construction services by unlicensed workers, smuggled goods or illegally-sold goods that would otherwise be legal). I refer to the first subcategory (transactions in illegal goods or services) as *black markets*, and to the second (transactions in legal goods or services, notably labour, under illegal conditions) as the *irregular economy*.

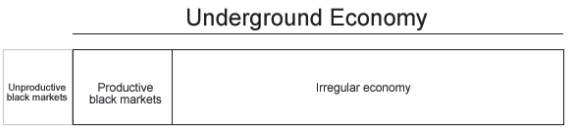
Although the terminology is far from uniform in the economic literature, the typology I propose is consistent with many theoretical and empirical studies.

Two kinds of black markets can be distinguished. An *unproductive black market* is one where no net value is created, like services of hired killers or trade in stolen goods. A *productive black market* is one where the adult buyer and the adult seller benefit (or think they benefit) from their trades, and neither of them nor any third party has any interest (other than envy, moral concerns, or "busybodyism") in stopping the transactions. Which activities fall under productive or unproductive black markets is often contentious, but the distinction is consistent with economic theory and analytically useful. It does imply a moral judgment, but I will argue (in Section 3) that it corresponds to a minimal value judgment. In this paper, we are concerned with productive black markets (as visually indicated in Chart 1).

It is important to note that the distinction between productive and unproductive black markets is embedded in the concept of production and in the national accounts themselves. Productive black markets are part of the theoretical concept of production as found in the national accounts, although they generally cannot be included for statistical reasons. Statistics Canada (Gervais 1974, p. 2) explains:

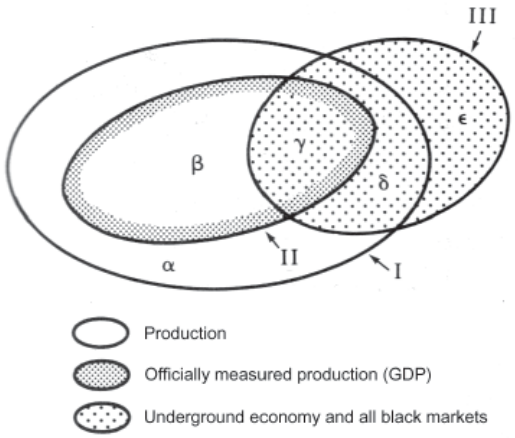
> *In principle, GDP includes all production, without regard to its legality. In practice, illegal activities such as the sale of narcotics, although deemed productive in an economic sense in that they satisfy a demand expressed on the market, are left out of official statistics because there is no way of measuring them with sufficient reliability. The official GDP thus refers, by and large, to legal production. Other criminal activities such as robbery or extortion are a transfer of wealth from one person or group to another. They are not productive and do not enter GDP at all.*

Chart 1 Schematic Representation of the Underground Economy



See text.

Chart 2 The Underground Economy in Relation With Other Economic Concepts



Source : Cowell (1990), p. 15.

Another typology, due to Cowell (1990) and represented in Chart 2,[1] can help put the underground economy into a wider economic context, and provide a more precise definition. Frontier I delimits the area of production as opposed to other activities that are not production—for example, transfers (including gifts) of something already produced. Frontier II circumscribes officially measured production or gross domestic product (GDP), usually referred to as "official GDP" or "measured GDP". GDP differs from production because it excludes non-market production and misses part of the underground economy. One example of non-market production is production within the family—meals for example. Frontier III delimits the underground economy and unproductive black markets. Subset γ contains the part of the underground economy that is caught by

1. Cowell's terminology is slightly different than ours and is consequently modified here.

the national statisticians and already included in the official measure of GDP. Subset δ includes the irregular economy missed by the national statisticians as well as productive black markets. Subset ε covers unproductive black markets. Thus, area γ and area δ make up what we call, more formally, *the underground economy: market production of goods and services, legal and illegal, which are sold or purchased illegally.* This definition is more formal in the sense that it corresponds to the formal concept of production in the national accounts, and allows a better comparison of the underground economy with GDP.

Technical Caveats

When the size of the underground economy is expressed as a proportion of (official) GDP, it is usually calculated as the ratio of γ+δ to β+γ. As γ is caught by the national statisticians and already included in official GDP, this ratio is potentially misleading and must be handled with care. A more misleading calculation, to be avoided, is to measure the size of underground economy as the total of all underground transactions and compare it to GDP, which includes value added only.[2]

Another caveat relates to smuggling. Smuggling is one component of the underground economy, but it is important to include the former correctly in the latter. When the underground economy is compared to GDP, we are interested in value added in the underground economy, not to the total value of all transactions. Suppose that bread was banned (or taxed at high rates) in Canada, and that underground markets developed for bread produced in the US and smuggled here. What would appear in underground *production*, to be compared to GDP, is only the value added by the smuggling industry, that is, the profits and other incomes earned in the distribution of smuggled bread. Whatever the (higher) market value of a smuggled product, only the value added in Canadian production[3] (including distribution)[4] can be compared to GDP.

The underground economy must be distinguished from tax evasion, defined as the willful non-payment of taxes legally due. Legally, all incomes must be declared for income tax purposes, including incomes earned in the irregular economy or on black markets,[5] but we might assume that illegal incomes are generally not declared. These incomes would be coextensive with the underground economy if they originated only in production. However, the concept of tax evasion is wider than our formal definition of the underground economy because it applies to incomes that don't come from production (capital gains, for instance). In other words, the frontier of the underground economy is not the same when viewed by the taxman and by the national statistician, and measurements according to the two different perspectives are not comparable. In this paper, we are interested in the underground economy, not tax evasion *per se*, and we adopt the national statistician's viewpoint.

Questions and Outline

Economists are interested in the underground economy for several reasons: (1) What are the causes of the underground economy? (2) What are its size and extent? (3) What does the underground economy imply for public policies, and can the economist make policy recommendations on these issues? (4) What are the solutions to the underground economy? Answering the last question presupposes that the other ones have been answered: before analyzing the possible solutions to the underground economy, we need to know its causes, the extent of the problem, and its impact on public policies.

I will thus start by reviewing the causes of the underground economy as analyzed in the economic literature (Section 1). I will then review the recent literature on the measurement of the underground economy, both in the world and in Canada (Section 2). Section 3 will present an overview of the relations between the underground economy and public policy, with a special emphasis on how economic analysis tries to keep value judgements at bay. This will allow us, in Section 4, to review four broad major public policy approaches for dealing with the underground economy. A short conclusion will summarize our analysis and its implications.

2. GDP includes only value added, which is equal to incomes or, equivalently, to expenditures on final goods. To take a simple example, what enters GDP in bread production is the value of bread sold to consumers, which is equivalent to the value added by wheat growers, millers, bakers, and distributors, which is in turn equal to the incomes of all these producers. If we add the market value of wheat to the market value of flour and to the market value of bread, we get the total value of transactions in the course of bread production but we are double counting wheat and flour. GDP is measured to avoid such double counting. For a numerical example, see Lemieux (2006b). On the relations between GDP and total inputs or outputs, see Statistics Canada (1989).
3. More precisely: production within the Canadian territory.
4. Distribution is comprised in the economic concept of production.
5. The Canada Revenue Agency writes, "Like legitimate incomes, proceeds of crime are taxable" (CRA 2006). See also the press releases entitled: "Convicted Drug Trafficker Fined $55,000 for Evading Tax on Proceeds of Crime" (CRA 2007).

1. Causes

1.1 Diversity of the Underground Economy

History presents us with a large number of prohibition and taxation events that gave rise to contraband in many products[6]: perfumes, overtaxed by the Pharaoh of Egypt; coffee, prohibited under penalty of death by Sultan Murad II in the 15th century; salt, as a consequence of the *gabelle*, a French tax on salt which lasted from the beginning of the 15th century until the 1789 revolution; matches, after the French government monopolized them in 1872; sperm of French bulls, prohibited in Switzerland between 1960 and 1970 in order to protect Simmental cows—among numerous other examples. At different times and places, pamphlets, newspapers and censored books crossed borders illegally, from Encyclopédistes's writings printed in Switzerland and smuggled into France, to Victor Hugo's pamphlet *Napoléon le Petit*, which the exiled author sent to France hidden in a flour shipment, and polemist Henri de Rochefort's newspaper, *La Lanterne*, shipped through a network of tobacco smuggling. Often, smugglers were considered heroes,[7] and raised small armies to engage state agents.

Alcohol and tobacco are only examples in the development of underground markets. Tobacco was prohibited in France in 1629, then overtaxed by Richelieu. It was prohibited by James I of England, by the Turkish Sultan Murad IV, by the Shah of Persia (who ordered to cut the upper lip of pipe smokers), and by Russian Czar Michael, among others. Talking about the Connecticut legislator, de Tocqueville (1835, Part 1, Chap. 2) remarked that "the zeal for regulation induces him to descend to the most frivolous particulars: thus a law is to be found in the same [1750] code which prohibits the use of tobacco". In the U.S., sales and, in some cases, possession of tobacco were prohibited by fourteen states and one territory between 1893 and 1909, and other prohibitions were enacted in the 1920s. The same happened, albeit on a grander scale, with the prohibition of alcohol production by a constitutional amendment in the U.S., between January 1920 and December 1933, and the bootlegging that followed (Dills and Miron 2003, p. 9). Supplied by the black market, neither drinkers nor smokers disappeared.

Smuggling and other forms of underground markets are not only a historical phenomenon, but an everyday fixture of contemporary economies. A few examples will illustrate. In the 20th century, drugs have been prohibited starting with opiates and cocaine early in the century, followed by marijuana at mid-century. The war on drug consumers, producers and smugglers still continues today. Underground markets for alcohol have thrived in many countries because of the high level of excise taxes and duties. The Royal Canadian Mounted Police (RCMP 2002) list alcohol as a major smuggling concern and raise the problem of illegal manufacturing. Smuggling or illegal use of gasoline and diesel oil is endemic in regions where special prices or rebates are granted to certain users. In 2001-2002, British customs "broke up 30 oil laundering plants", and the government has instituted new measures to counter the growing trend, including approved distributors for rebated fuels (Bajada 2005, pp. 238-239). Similarly, in Québec, there is a black market for undyed and untaxed fuel and diesel oil which is allowed only to certain users (like farmers, fishermen, and those who use it for domestic heating); in 2005-2006, government inspectors issued 280 infraction notices (Boyer 2007). Other rampant illegal markets include gambling, prostitution, some pornography, usury loans, and grey markets for satellite TV signals that are not admitted in Canada but can be legally bought from U.S. companies.

Tobacco smuggling is endemic in countries where the price of cigarettes is high enough to justify it. In 2002-2003, despite new anti-smuggling measures, nearly one fourth of cigarettes consumed in the U.K. were smuggled (Bajada 2005, p. 238). After continuous increases in provincial and federal tobacco taxes in Canada, smuggling developed briskly in the early 1990s. In Québec, provincial revenues from tobacco taxes dropped 61% in real terms (constant dollars) between 1986-1987 and 1993-1994. In February 1994, the federal and the Québec government (as well as eventually all provincial governments) cut tobacco taxes dramatically—by 80% in Québec. But taxes have crept up since, and are now higher than their peak of the early 1990s. And provincial tobacco revenues have started falling again (Boyer 2007). A recent investigation (CTMC 2007) suggests that 30.5% of cigarettes consumed in Québec are illegal. A carton of cigarettes sells for $10 or less in the Kahnawake reserve, as opposed to $60 for a taxed, legal carton. The contraband is apparently increasing.[8]

One should not think of the underground economy as only black markets or smuggling on irregular markets. The irregular economy also includes otherwise legal services sold "under the table" like labour

6. See Sullum (1998), Besson (1989), and Sédillot (1985).
7. Like the famous Louis Mandrin (1724-1755; see Besson 1989, pp. 64-77.
8. This is suggested by many press reports; see, for example, McLaughlin (2007), Croteau (2007), Presse canadienne (2007a), and Sudbury Star (2007).

services sold to businesses or individuals (in residential construction and renovation, for example). The irregular economy is in large part made of irregular work: individuals working without the proper regulatory requirements and without declaring their incomes to the authorities, but producing goods and services that are by themselves totally legal.

What causes all these instances of the underground economy? Do they have similar causes, a common denominator? We cannot hope to solve the problem of the underground economy, or even to determine what the problem really is, without enquiring into its causes. As by Fiorentini and Zamagni (1999a, p. xiii) point out, "an effective action, at the institutional level, against illegal markets and organized crime presupposes a thorough knowledge of the implicit mechanisms and incentive schemes underneath this domain of human activity".

1.2 Propensity to Barter

An answer to the question of causes can be found in Adam Smith's celebrated *Wealth of Nations* (1776, Book 1, Chapter 2). Smith saw the foundation of modern society in the division of labour, which itself came from "a certain propensity in human nature … to truck, barter, and exchange one thing for another".[9] Exchange is a fundamental dimension of human relations, and occupies a central place in economic theory. Every time the propensity to exchange is constrained, individuals try to circumvent the constraints in order to obtain what they perceive as the benefits of exchange. In other words, when impediments prevent exchanges in the official economy, demanders and suppliers will often retreat in the underground economy to pursue their trades.

1.3 Impediments to Exchange

What are the main impediments that push individuals to the underground economy? The theoretical and empirical literature suggests they are: taxes, regulations, and prohibitions.

If the work supplied or the goods purchased by someone are taxed, he will get less for his effort or for his money. The incentive for the affected individuals is to try to make their exchanges but to avoid the taxes, as they will then get more for their work or pay less for their purchases. If there are underground markets where they can do this, they will be incited to use them. In empirical research, taxes consistently appear as one of the main determinants of the underground economy, whether it is high income tax rates or high rates of indirect taxes (Schneider and Enste 2000, p. 83). It has been estimated that, in the U.S., an increase of one percentage point in the federal marginal (personal) income tax rate extends the underground economy by 1.4 percentage point (Schneider and Enste 2000, p. 85). Schneider and Enste (2000, p. 81) note that "[t]he smallest underground economies are estimated to exist in countries with relatively small public sectors (Japan, the US, and Switzerland) and comparatively high tax morale (the US and Switzerland)". Chart 3 shows the correlation between the tax burden[10] and the ratio of the underground economy to GDP. Countries with a lower tax burden (around 35%) like Japan, the U.S. and Switzerland, have an underground economy that hovers around 10% of official GDP. On the contrary, countries with a tax burden over 65% tend to show an underground economy of more than 15% of GDP (like in Scandinavia). With a tax burden of more than 45% in Canada, the underground economy stands at about 15% of GDP.[11] Among OECD countries, 34% of the variance in the level of underground economy seems to be explained by the tax burden. This causality does not only affect the allocation of work efforts between the underground and the official economy, but also the purchase of goods and services by consumers. For example, the experience of New York shows that an increase in cigarette taxes will, other things being equal, lead to the development of illegal markets: the 2002 tax increases rapidly led to a drop of 50% in the sales of taxed cigarettes (Fleenor 2003; see also Shelley *et al.* 2007).

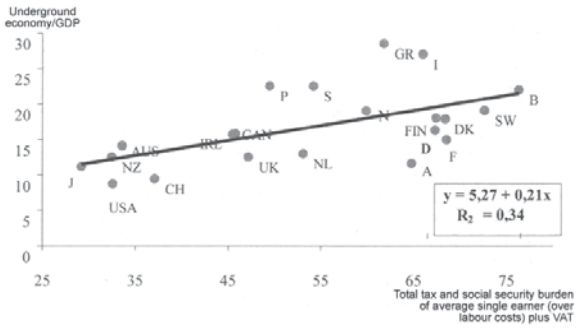
As a factor in the development of the underground economy, the tax burden should be understood as including the effective tax rate of welfare recipients. Schneider and Enste (2000, p. 86) note that "[t]he social

9. The passage is worth quoting: "This division of labour, from which so many advantages are derived, is not originally the effect of any human wisdom, which foresees and intends that general opulence to which it gives occasion. It is the necessary, though very slow and gradual, consequence of a certain propensity in human nature, which has in view no such extensive utility; the propensity to truck, barter, and exchange one thing for another. Whether this propensity be one of those original principles in human nature, of which no further account can be given, or whether, as seems more probable, it be the necessary consequence of the faculties of reason and speech, it belongs not to our present subject to inquire. It is common to all men, and to be found in no other race of animals, which seem to know neither this nor any other species of contracts. Two greyhounds, in running down the same hare, have sometimes the appearance of acting in some sort of concert. Each turns her towards his companion, or endeavours to intercept her when his companion turns her towards himself. This, however, is not the effect of any contract, but of the accidental concurrence of their passions in the same object at that particular time. Nobody ever saw a dog make a fair and deliberate exchange of one bone for another with another dog. Nobody ever saw one animal, by its gestures and natural cries signify to another, this is mine, that yours; I am willing to give this for that." (Smith 1776, p. 13)

10. Calculated as all taxes on salaries for the average single wage earner, including those nominally paid by the employer, as a percentage of labour costs, plus value added taxes.

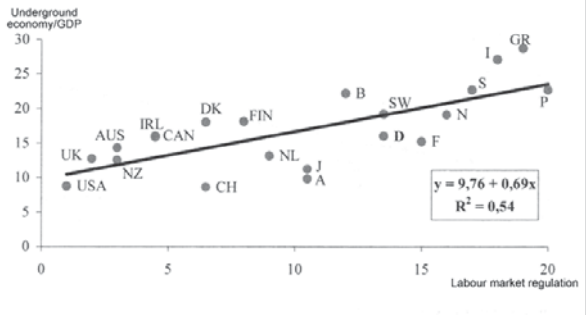
11. As I will argue in Section 2, these estimates of the underground economy as a percentage of GDP are on the high side.

Chart 3 Tax Burden and the Underground Economy in OECD Countries (2003)



Source : Enste (2005), p. 130.

Chart 4 Labour Market Regulation and the Underground Economy in OECD Countries (1999)



Source : Enste (2005), p. 130.

welfare system leads to strong negative incentives for beneficiaries to work in the official economy, since their marginal tax rate often approaches or equals 100 percent". In other words, welfare recipients face strong incentives to work in the underground economy. The empirical study of Lemieux *et al.* (1994) tends to support this conclusion.

There is a general agreement that regulation is another major cause of the underground economy. "As for the consequences of market regulations on the growth of illegal or irregular markets", write Fiorentini and Zamagni (1999a, pp. xiv-xv), "an influential literature points at a relevant positive correlation between the two phenomena." In particular, labour market regulations increase labour cost in the official economy (Schneider and Enste 2000, p. 86), just as taxes do; they thus reduce the demand for labour and the take-home pay of workers. Facing lower wages or no work at all, workers will be tempted to offer their services in the underground economy. An econometric analysis of 21 OECD countries based on an index of labour market regulation is consistent with this conclusion: "54 percent of the variance in the size of the shadow economy can be explained by labor market regulations" (Enste 2005, p. 131—see our Chart 4). Countries with lower labour regulation like the US or the UK tend to have an underground economy of about 10% of GDP, while countries with heavy regulation (Iceland and Greece, for example), hover around 25%; Canada is in the middle. As they also increase the cost of production and reduce the demand for, and the wages of, labour, other forms of economic and social regulations (pertaining to standards, imports, etc.) are expected to have the same effect as labour regulations.

Prohibition is another cause of the underground economy. Prohibition stands at one end of the regulation (or tax) continuum, the other end being zero regulation (or zero tax). Very severe regulation or very high taxes can be as effective as outright prohibition. We would expect (total) prohibition to have a similar but greater impact than ordinary taxes or regulation. Although labour can be prohibited in certain circumstances and under certain conditions (in the construction industry or in closed shops, for example), the concept of prohibition is more often used in the context of consumer goods and services. The economics of prohibition suggests that prohibition harms the consumers of the goods produced, at least if we take seriously the postulate that an individual knows better than any external observer what is in his own interest. Prohibition creates profit opportunities that lead to the creation of illegal markets where consumer demand is served.[12]

What happens to supply, demand and prices when impediments are imposed on exchange? The consequences will normally be an increase in the good's marginal cost of production, a decrease in supply, an increase in price, and a decreased quantity demanded. In turn, these consequences will generate underground markets. Prices will often be higher on underground markets than on legal ones, because of the risk incurred by suppliers. Thus, black market prices of cocaine exceed legal market prices (for medication and research) by a factor of 2 to 4; and black market prices of heroin are 6 to 19 times the legal prices (for research) (Miron 2003).[13]

The impact on consumption can conceivably be mitigated or cancelled by factors that work in the opposite direction. The public policy could have a "forbidden fruit" effect that would increase demand and cancel, at least partly, the decrease in quantity demanded caused by the reduced supply and higher price. Note however that another similar effect work in the other direction: a reduction of demand can be brought about by a stigmatization or "denormalization" of consumers. In general, though, it is safe to assume that, at least in the short run, individual preferences and demand are

12. On the economics of prohibition, see Thornton (1991).
13. For reasons that will be explained later (Section 3.1), other factors related to the operation of illegal markets can push prices down on these markets, as we observe in the case of cigarettes.

stable. Thus, we would normally expect a public policy that bans, regulates or taxes a product to reduce supply and consumption.

For example, we would expect the prohibition of drugs to reduce their consumption. Why is it, then, that the annual prevalence of cannabis is lower in the Netherlands (6.1%) than in, say, Canada (16.8%) or the U.S. (12.6%), while this drug is not as strictly banned in the former country as in the latter?[14] There can be many reasons unrelated to the level of prohibition and the price increase it causes, the main one being consumer preferences ("culture") among different social groups. One indication that this factor may be at play is that consumption of cocaine, more strictly controlled than cannabis in the Netherlands, is apparently also lower in this country (1.1%) than in Canada (2.3%) and the U.S. (2.8%). Note also that consumption of cannabis in many countries where it is banned is lower than in the Netherlands. Finally, prevalence is a poor proxy for quantity consumed. So, *if other factors are held constant*, we would still expect that the more severe the prohibition, the higher the price and the lower the quantity demanded. However, some of the social costs associated with drug use (like violence—see below) are likely to be lower in a liberal regime.[15]

Channelling entrepreneurship towards less productive and even unproductive activities is another, less visible, impact of a public policy imposing impediments to exchange. A strand of economic theory argues convincingly that, when entrepreneurship in productive economic activities is not rewarded—and, a fortiori, when it is punished—entrepreneurs allocate their time to unproductive activities instead.[16] The flurry of inventions in China at the beginning of the second millennium (waterwheels, paper, gunpowder, perhaps the compass) provides a standard example: these inventions did not lead to economic development because people with entrepreneurial spirit were only rewarded for getting into, and progressing in, the ranks of the powerful state bureaucracy (Baumol 1990, pp. 36-37). More generally, a consequence of public policies that create impediments to exchange would be to divert entrepreneurial activities to underground markets and, in some instances, to crime. This aspect of the misallocation of entrepreneurial resources caused by impediments to exchange is easily forgotten.

14. Data on drug consumption is from UN (2007). Prevalence is defined as the percentage of people who have consumed the drug at least once in the twelve month period preceding the assessment. For the legal status of cannabis and other drugs in the Netherlands, see Dolin (2001).
15. Which is not to say that they would be zero: for example, the costs of alcohol in terms of health care, criminality, and accidents, are important, and much higher than tobacco (see Manning *et al.* 1991).
16. Baumol (1990). See also Brenner (1987).

2. Measurement and Extent

2.1 Methods of Measurement

The underground economy is comprised of the several markets where labour is exchanged under the table, legal goods are exchanged under illegal conditions, and illegal goods are supplied to consumers. Being hidden by their very nature, underground markets (and especially black markets) are not easy to observe and measure. Economists have devised a number of methods to measure the overall level of the underground economy, and have applied them to many countries. The most important of these methods are summarized below.[17]

Direct approaches—Direct approaches use surveys of participants in illegal markets, or extrapolate comparisons of income tax reports with tax audits.

Discrepancies in official statistics—In national accounting, total incomes must be equal to total final expenditures, and any excess of expenditures over incomes can be used an indicator of the size of the underground economy. A decline in labour force participation can also be used to estimate the growth of the underground economy.

Monetary approaches—Money (especially in the form of cash) is necessary to carry out underground transactions. If the money supply (cash plus bank deposits) increases more than seems justified by the officially reported transactions, the difference can be used to estimate the value of underground transactions. Similarly, we can rely on the demand for currency which is not explained by such factors as recorded payments, interest rates and per capita income.

Electricity method—If we accept that there is a more or less invariant proportion between overall economic activity and the use of electricity, we can estimate the growth of the underground economy by the difference between the growth of official GDP and the output that can be produced by growing electricity consumption.

The MIMIC[18] approach—More complex, this econometric approach incorporates different causes for the underground economy, and measures many of its indicators (labour force participation, currency, etc.). The model is built to give an index of the evolution of the underground economy through time. To obtain actual proportions to GDP, it is supplemented by monetary methods.

Different methods often produce wide discrepancies in results. For example, the estimates of the Canadian underground economy with five different methods in the period 1986-1990 produced estimates ranging between 1.4% and 21.2% of the official economy. The corresponding range (with fewer methods used) was 11.3% to 31.4% for Germany, and 9.7% to 13.2% for Great Britain (Schneider and Enste 2000, p. 106).

2.2 Estimates

Schneider and Bajada (2005) have estimated the underground economy in 21 OECD countries in 2002-2003, using the MIMIC method combined with the currency demand approach. Their results suggest that the underground economy as the proportion of official GDP ranges from 8.4% in the U.S. to 28.2% in Greece, Canada standing at 15.2%, close to the average of 16.3% (*ibid.*, p. 85).

Tedds (2005, pp. 164-165) summarizes the many estimates of the Canadian illegal economy that have been made since 1976. Over the whole period, they range from 1.4% to 100% of official GDP, both because of different definitions of the underground economy and different methods of measuring it. Using a MIMIC model and looking at the underground economy from the taxman's viewpoint (measuring undeclared incomes), Tedds himself (2005, pp. 168-169) calculates that the underground economy has grown from 7.5% of GDP in 1976 to 15.3% in 2001. This growth has been virtually continuous from the early 1980s on, with a large jump after the introduction of the GST in 1991. Many studies that use a definition of the underground economy similar to Tedds's suggest at a figure of about 15% in the mid-1990s (Tedds 2005, p. 163). However, two credible estimates are much lower. Statistics Canada's estimate for 1992 (the latest one available from this agency), which uses a concept close to our definition of the underground economy, puts the underground economy at 5.2% of GDP (Gervais 1994). For Québec, Fortin *et al.* (1996) obtain an even lower estimate of between 2.0% and 2.6% (for 1993), using a survey method and looking at the underground economy from the taxman's viewpoint.

The high estimates should be used with care for a number of reasons. First, these estimates often rely on methodologically controversial monetary methods: they assume a constant velocity of money or constant demand for currency or for money, which seem unrealistic given financial innovations like debit cards (Fortin 1996, pp. 10-13). Second, the high estimates often focus on tax evasion rather than on production only, which may create an upward bias. Third, the high estimates do not look very credible: as noted by Fortin *et al.* (1996, p. 98), an underground economy representing 15% of

17. Following Schneider and Enste (2000). See also Giles and Tedds (2002).
18. MIMIC stands for "Multiple Indicators Multiple Causes".

Québec GDP would imply an annual expenditure on underground goods and services of $9,500 per household. Finally, as Tedds (2005, p. 158-159) himself points out, the high estimates often represent a ratio between total underground transactions and GDP, while the latter only measures value added. The same reasons that suggest caution towards high Canadian estimates cast some doubts on many international estimates.

Statistics Canada (Gervais 1994, Smith 1994) estimates the irregular economy to be (in 1992) 4.2% of GDP and productive black markets 1% of GDP. Even this low estimate is presented as an "upper limit, based on extreme assumptions", and "should not be taken for the true size of the underground economy in Canada" (Gervais 1994, p. 56).

The 4.2% estimate was obtained as follows.[19] Statistics Canada looked at the expenditure side of GDP and showed how, with reasonable hypotheses, it is difficult to believe that more than 2.7% of irregular transactions have been missed in official GDP. In many important components of national expenditures, like government expenditures (22% of GDP) or business investment (10% of GDP), underground activity is certainly rare because the operations are subject to many controls and relatively transparent. Residential construction (including alterations and improvements) is a likely candidate for the irregular economy, but the sector accounts for only 5% of GDP, so even assuming a 15% rate of missed irregular value added, we obtain less than 1% of official GDP. Personal expenditures on goods and services amount to 60% of GDP, but about 45% of them cannot be easily directed towards the underground economy (new motor vehicles, electricity, natural gas, fuels, air transport, water charges, medical and hospital care, communications, cable television, urban transit, provincial lottery tickets, financial services, services provided by non-profit activities, etc.). A second portion comprising 49% of personal expenditures goes to goods and services often produced by small businesses, but even assuming that these "skim" (hide) 15% (for retail trade and taxicabs) to 25% (in the case of direct sellers and selected services) of their gross receipts, we get only 1.6% of GDP that would be unmeasured. A few remaining sectors are most likely to be heavily present in the underground economy, but they account for a small part of official GDP: 4% of GDP in total (including alcohol and tobacco, but also domestic and household services, and a few other services). Even if we assume that 14% of official GDP in these sectors is missed, the underground portion would be only 0.6% of official GDP. Adding such figures, we get the estimated upper limit of 3.5% for the ratio of missed irregular production to official GDP. Statistics Canada adds to this the 1.7% which it estimates is the portion of official GDP that already catches irregular value added. Hence the estimate of 4.2% of official GDP for the irregular economy.

There are many reasons why part of the underground economy is already included in the official measure of GDP. National statisticians do try to include irregular production—in the case of tobacco smuggling, for example. Moreover, consumers have been found to include some of their underground expenditures when they answer Statistics Canada's surveys. (Fortin *et al.*, 1996, p. 16). Another reason is that the cross-checking of many components of GDP for consistency reduces the risk of missing important parts of the economy.

Statistics Canada (Gervais 1994) estimates that productive black markets correspond (in 1992) to about 1% of official GDP in Canada.[20] Adding this to the 4.2% estimate of the irregular economy, the estimate of 5.2% for the underground economy is obtained. The 1% of official GDP produced on black markets includes drugs (about 0.5%) and prostitution (0.4%) (Gervais 1994, pp. 2-3).[21]

Estimating the underground economy in Québec to be between 1.6% and 2.0% of GDP, Fortin *et al.* (1996) obtain an even lower estimate than Statistics Canada. The two sets of results are not necessarily inconsistent, even if they are not strictly comparable. They are not strictly comparable because their perspectives are different: Fortin *et al.* take the viewpoint of the taxman and estimate undeclared revenues. They are not necessarily inconsistent because Fortin *et al.*'s 2.0%-2.6% estimate probably would need to be compared to a Statistics Canada's 3.7% figure, that is, 5.2% minus the 1.5% already included in official GDP,[22] thus reducing the apparent gap.

To summarize, the underground economy appears to be relatively small in Canada—that is, smaller than the high estimates that have been circulating. The Statistics Canada estimate (see Chart 5, Panel A), presented as a maximum for 1992, appears credible as a general estimate for today's underground economy, if only because the size of the underground economy might well have increased since the early 1990s: Tedds's (2005, p. 169) estimates suggest that between the early 1990s and the early 2000s, it could have grown by 15%-20% as a proportion of GDP. Thus, Panel B of Chart 5 uses the 1992 Statistics Canada estimates to extrapolate the size of the underground economy to 2006.

19. All underlying data are for 1992; see Smith (2006), Table 4 and Table 5.

20. Tedds (2005, p. 171) and Giles and Tedds (2002, pp. 88-92) argue that the 1% estimate for the black-market component of the underground economy is much too low.

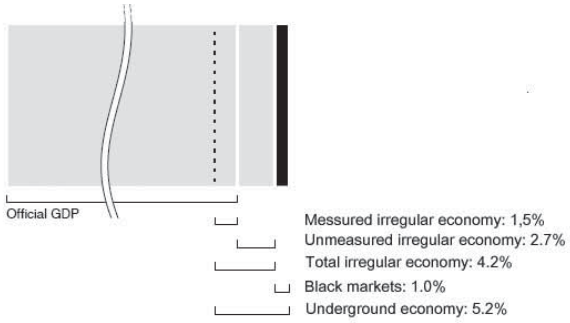
21. Note that, as their consumption and production are legal (under certain conditions), tobacco and alcohol are part of the irregular economy, not black markets.

22. Bernard Fortin, personal correspondence of August 8, 2007.

Although the proportion of the underground economy in official production remains small, the dollar amounts are important. According to these estimates, the Canadian underground economy represents $75 billion of value added (and incomes). To give a sense of perspective, this is 27% more than the budget of the Québec government. Of this $75 billion, some $22 billion would be included in the official national account statistics, while $39 billion represent the hidden and unmeasured part of the irregular economy (which totals $61 billion). The remaining $14 billion (to account for the $75-billion underground economy) represents goods and services on (productive) black markets.

Chart 5: Estimates of the Canadian Underground Economy

Panel A: According to Statistics Canada, 1992*



* Terminology has been changed to conform to the terminology used in this paper.

Source: Gervais (1994), p. 56.

Panel B: Extrapolation to 2006

	Billions of dollars	Proportion of GDP
Official GDP	1 446	
Measured irregular economy (i.e., already included in GDP)	22	1,5%
Unmeasured irregular economy	39	2,7%
Total irregular economy	61	4,2%
Black markets	14	1,0%
Underground economy	75	5,2%

Source: Panel A and text

3. The Underground Economy, Public Policy, and Morality

3.1 Impact of the Underground Economy on Public Policy

Even if the underground economy is "small", its impact on public policy is multifaceted and potentially significant, and it has been much debated by economists and non-economists.

One standard criticism against the underground economy relates to its usual association with tax evasion. The argument is that the underground economy reduces government revenues, which leads to either a decrease in public services or an increase in taxes imposed to other taxpayers in order to make up for the lost revenues. In turn, the higher tax rates may fuel illegal markets in a sort of vicious cycle (Schneider and Enste, pp. 87-88). However, this cannot be considered a social cost of the underground economy, if "cost" is taken in its economic sense of "opportunity cost", that is, of lost consumption opportunities or, more generally, net lost utility (or satisfaction). Taxes are a transfer from the taxpayers to the beneficiaries of public expenditures. Reduced taxes, therefore, are just a transfer in reverse: from beneficiaries of state expenditures to the taxpayer. What one loses, the other one gains, and there is no net cost.[23]

Another type of cost often ascribed to the underground economy is that it neutralizes, at least partly, the public policies that generated it and, thus, reduces the benefits of these policies. How underground markets contradict or neutralize public policies is easily grasped in the context of a good or service rendered more expensive by an impediment to exchange like a tax or a regulatory requirement. If an underground market appears, it limits the drop in supply, and dampens the rise in price and the decrease in consumption. As we saw before, prices in underground markets will often be higher than in legal markets because the risks of seizure, fines and jail impose additional costs to illegal operators. If organized crime is involved, a monopoly or cartel takes over, which will further reduce supply and increase prices.

Some forces may work in the other direction. Production in illegal markets benefits from a reduction in other costs of production, because taxes are not paid and a host of environmental, safety, health and labour regulations do not need to be obeyed. Miron (2003, pp. 20-22) evaluates the costs of such regulations at nearly 40% of the price of legal goods. Adding 10% in advertising costs that are not incurred by underground producers, Miron estimates that operation in legal markets roughly doubles the price of goods or, alternatively, that illegal producers save some 50% on production costs. Thus, costs of production and prices in an underground market could be lower than in the legal market. Consequently, it is not impossible that illegal markets could more than cancel the effect on consumption of a public policy taxing, regulating or banning a product (if enforcement does not impose too high a cost to underground operators). In light of these factors, the evidence that the American Prohibition only reduced consumption by 10% to 20% (Dills and Miron 2003) becomes understandable. But note that it still reduced it, as standard economic theory would have forecasted. At any rate, underground markets at least increase consumption compared to what it would have been in their absence, given the impediments imposed by public policy.

3.2 Morals and Economics

It cannot just be assumed that public policies are "good" and that underground markets are "bad". "Good" and "bad" (or "evil") are moral notions. Economists try to analyze the underground economy, like any other phenomenon, without making moral judgments—also called "value judgments" or "normative judgments". This is an important point, which is often overlooked by policy wonks, and even by the economists among them, who, in the fire of action, are tempted to assume that they can "maximize the size of the economic pie" while avoiding any redistributive implications and, thus, any value judgment.

Starting in the 1930s and 1940s, welfare economics has demonstrated that such a hope is impossible, that any public policy, including laissez-faire (that is, the decision not to impose a public policy), has distributive consequences, favours some individuals and harms others (Lemieux 2006a). Now, there is no scientific method to weigh the utility gained by one individual against the utility lost by another. Ultimately, any public policy requires some value judgement about more and less deserving individuals—the ones who pay less tax or more, who receive more or fewer subsidies, who have their consumption preferences encouraged or discouraged, etc. In more technical terms, any redistribution of money and utility requires that a "social welfare function" be assumed that weighs some individuals' utility against other individuals' utility.[24] It follows that

23. Neglecting the "deadweitght loss" of taxes.

24. See the literature cited in Lemieux (2006a).

any economist who advocates a public policy is incorporating a value judgment in his prescription. A scientific approach to public policy requires, at the minimum, that such value judgments be recognized and made explicit. When this is not done, the policy wonk is just making implicit value judgments.

The economist will want not only to make explicit the value judgments underlying his policy prescriptions, but probably to minimize them too. The less moral content there is in his policy prescriptions, the more scientific they will be.

What can minimal value judgments look like? The Smithian insight and its development in modern economics can, I believe, help answer this question. When two individuals trade, whether on legal or on underground markets, the economist usually assumes that they thereby demonstrate that they both benefit (or expect to benefit). Satisfying individual preferences as each individual evaluates his own would seem to be the minimal value judgment we are looking for. In a Smithian perspective, it would seem that the underground economy is as productive as the legal economy. If public policy forbids an exchange, buyer and seller will still want to exchange. The crime represented by the exchange has no victim; it is a victimless crime, which is the same as saying that it is productive exchange. This assumes that no third party is harmed, that there is no "externality", except for competitors who would have wanted to sell at higher prices or buy at lower prices. The externality argument is important and has a long tradition in economics, but is not always easy to handle correctly (Buchanan and Stubblebine 1962) if only because any cost supported by the victims of externalities presumably has to be weighed against the benefits created by the exchange.[25]

Some economists like Tanzi (2000, p. 202) take another stance, arguing that "[c]riminal or illegal activities produce an output that, by definition, does not contribute to social welfare and that should therefore not be included in the national accounts". This opens a Pandora's box. Should transactions on black markets for forbidden books in totalitarian countries be excluded from their GDP? Is it "good" that the Chinese state prosecutes a citizen for smuggling in vegetable oil, natural rubber, cars, cigarettes, electrical goods, and crude oil, "thereby distorting ... overall energy policy" (Lawrence 2000)?

Most economists would probably side with Schelling (1967, p. 360) and think of most black markets as productive:

> *I have emphasized that a difference between black-market crimes and most others, like racketeering and robbery, is that they are "crimes" only because we have legislated against the commodity they provide. We single out certain goods and services as harmful or sinful; for reasons of history and tradition, and for other reasons, we forbid dope but not tobacco, gambling in casinos but not on the stock-market, extra-marital sex but not gluttony, erotic stories but not mystery stories. We do all this for reasons different from those behind the laws against robbery and tax evasion.*

Certainly, a line has to be drawn somewhere. I believe economic analysis would draw it as far as possible from the Smithian "propensity to barter". There is a good argument for economizing on ethics (Lemieux 2006a), and resorting to value judgements only in clear cut cases of crimes with clear third-party victims. Theft provides a neat example. What a theft victim loses is more than what the thief gains because the thief uses resources (transportation, tools, time) to commit his crime, because competition between thieves leads to the marginal thief (the least efficient one) gaining only marginally more than he would in a legitimate occupation, and because the resources used by potential victims to protect themselves (locks, alarm systems, guns) are also a real cost (Friedman 1990, pp. 565-569). What we call unproductive black markets cover such cases of real crime. But, on this argument, other black markets are as productive as the irregular economy. Productive black markets are characterized by victimless crimes, while unproductive ones harbour activities with clear victims. This reasoning applies a fortiori to the irregular economy.

Two objections can be raised against the foregoing analysis.

The first objection relates to horizontal equity, that is, the notion that individuals in the same economic situation should shoulder an equal tax burden.[26] Producers in the underground economy generally do not report their illegal incomes and pay no taxes on them, violating horizontal equity. This is bad either because horizontal equity is a value by itself, or because some other underlying notion of equity or equality is broken—for example, tax evaders, who presumably consume public services, become free riders on the tax-paying individuals in the official economy.

This objection loses much of its economic potency when one realizes that it is nothing but a value judgment on the proper distribution of benefits (public services minus taxes). In this case, the assumed welfare function even seems to go against the preferences of

25. I am ignoring here many problems here that are worth debating—and have been much debated among economists. I would argue that the standard moral or paternalistic approach to public policy is generally inconsistent with economic analysis and the Smithian approach to trade (see Lemieux 2000).

26. Stiglitz (1988, pp. 399-400) presents the standard rule of horizontal equity, but immediately goes on to explain "the difficulty of even defining the meaning of equality of treatment". See also Giles and Tedds (2002).

a large part of the population, if, as the data of Fortin *et al.* (1996, pp. 63-64) suggests, 40% of Quebecers see nothing immoral in obtaining undeclared income in the underground economy. Another problem is that an equal tax burden for individuals with the same incomes means that they are treated unequally—they are discriminated against—when considered in other economic dimensions, like effort (individuals who earn the same incomes with different levels of effort are treated unequally by an equal tax burden), needs (individuals with greater "needs" are handicapped by equal taxes), age, and so forth.[27] Moreover, it is far from clear what an equal tax burden is: Is it the same amount of tax or the same proportional amount, or what? Finally, another equity principle, vertical equity, conflicts with horizontal equity as it aims at changing the economic situation of individuals. Stiglitz (1988, p. 405) writes that "though the principles of vertical and horizontal equity seem, at first, to provide 'reasonable' bases for designing a fair tax system, they are, in fact, of only limited help." For all these reasons, it seems better, from a scientific viewpoint, to avoid the horizontal equity criterion in evaluating the underground economy.

The second objection is that the crimes committed by participants in the underground economy are not victimless, but create real victims in the third parties that are harmed by the inefficient reallocation of resources brought about. This objection covers two different arguments. One is that the reallocation of resources towards the underground economy harms some competitors—for example, legal entrepreneurs who are victims of unfair competition. This argument proves too much for, if it were accepted, any competition, including on legal markets, would have to be conceived as a crime harming third parties. The other argument is that the underground economy is inefficient compared to the legal economy and that a real economic cost is thus supported by third parties. But although the underground economy is inefficient compared to what it would be if it had not been made illegal, it may well be that it is a second best compared to a hypothetical situation where the impediments that generate it existed but without the underground outlet. Moreover, whether the inefficiency costs must be assigned to the underground economy itself or, instead, to the policies that generated it requires a prior value judgment. My argument is that a value judgment in favour of trade and the "propensity to barter" is less taxing[28] than a value judgment in favour of considering as a crime anything that harms some individuals.

27. On these problems, see de Jasay (1985), pp. 186-198. De Jasay argues that "one equality crowds out another" (p. 187), and that "[e]quality in one dimension typically entails inequality in others" (p. 197).
28. It "demands far less of our moral credulity" to use an expression of de Jasay (1997, p. 152).

3.3 Underlying Models of the State

How we evaluate public policies and the underground markets they generate, whether the benefit of the doubt is given to the former or to the latter, also depends on the underlying model of the state that the analyst uses. With Fiorentini and Zamagni (1999a, pp. xvi-xxiii), it is useful to distinguish two classes of models of the state and public policy: the welfare model and proprietary models.

The welfare model of the state assumes that the state and its public policies aim at maximizing "social welfare", an aggregation of some sort of the welfare of all individuals in society. In order to do this, the state has to correct externalities (third-party effects), which prevent markets from playing their role efficiently (see Lemieux 2006a). The effects of drugs or alcohol on third parties (the family, victims of accidents...) provide a standard example. If underground markets are the unintended effects of welfare-maximizing public policies, they must be considered as costs necessary to obtain higher benefits.

Proprietary models of the state assume that the state, instead of maximizing general welfare, acts as if it were the property of a specific group of individuals or social category. In this perspective, the real goal of public policy is to redistribute benefits to some groups (the middle class or non-smokers, for example) at the expense of other groups (smokers and the poor or the rich, for example). "Most authors working on the economics of illegal markets and corruption," write Fiorentini and Zamagni (1999a, p. xvi), "share a theory of the state according to which the ruling class holds a monopolistic control over government and selects policies to maximize its revenue under the constraint of maintaining a dominant position". Proprietary theories of the state cover a wide range of political and economic theory,[29] but whatever the exact variant relied upon, the conclusion that Fiorentini and Zamagni (1999a, p. xxiii) assign to this class of theories probably holds: "Indeed, in the presence of inefficient regulation and paternalistic bans on some activities, corruption and illegal trading can be efficiency-enhancing".

Parallel to the distinction between the welfare model and the proprietary models of the state is the distinction between traditional public finance and the contemporary theory of public choice. The traditional approach can be represented by the standard criticism of the underground economy: "The issue affects everyone," writes James (2005, p. 275), "because, of course, tax evasion necessarily means that the tax burden on honest taxpayers is higher or the levels of public expenditure are lower than they would otherwise be, or both." The

29. See, for example, de Jouvenel (1945).

assumption is that a certain amount of public expenditure is required and taxes are levied to finance them, or else public expenditures won't be optimal. The public choice approach and conclusions—or at least the current represented by Brennan and Buchanan (1980)—are very different: it is revenues that drive expenditures, not the other way around; the state (Thomas Hobbes' "Leviathan") maximizes revenues and then finds ways to spend them on redistribution. In this perspective, the underground economy could serve as a built-in constraint on Leviathan.

Given the necessity to minimize value judgments and the danger of simply assuming that the state maximizes social welfare, the economist needs to be prudent in making policy prescriptions with regard to the underground economy. While minimal value judgments justify combating unproductive black markets (related to murder, theft, and such crimes), the underground economy (the irregular economy and productive black markets) is more difficult to criticize from an economic viewpoint.

4. Four Public Policy Approaches

The underground economy is a limited phenomenon, but it may be growing and, at any rate, it is significant enough in certain sectors to have policy makers and economists concerned. According to conservative estimations, the value added in the Canadian underground economy reaches $75 billion, or more than 5% of GDP. Due consideration being given to the difficulties exposed in the previous section, the economist can say something more about how public policy should approach the underground economy. Four public policy approaches are possible: (1) more repression; (2) searching for an optimal level of the underground economy; (3) doing nothing; and (4) changing the public policies that generate the underground economy.

4.1 More Repression

The first solution is more repression: to impose higher penalties to participants in the underground economy. The economic theory of crime (Becker 1968) predicts that an increase in expected penalty will increase the cost of, and reduce, participation in illegal markets. The expected penalty can be increased through either higher penalties if convicted, or a higher probability for participants of being caught and convicted, which means better enforcement (more police surveillance and interventions, more intensive investigations, more resources allocated to criminal prosecutions, etc.). It is generally admitted that allocating more resources to enforcement (Tanzi 2000, p. 174) and/or enacting higher penalties (Schneider and Enste 2000, p. 83) will reduce the underground economy. In practice, better enforcement means more bureaucratic and police intervention in the affairs of small businesses, on building sites, in restaurants, in contractual relations (like between families and domestic service providers), on Indian reserves,[30] and so forth.

The economic analysis of crime argues not for *maximal* repression but for *optimal* repression. Enforcement has costs (police and legal personnel, equipment, etc.) and it would be inefficient to increase it over the level where the marginal cost becomes higher than the marginal benefit. The other alternative in repression, increasing penalties, also has costs, if only because of the problem of marginal deterrence: if the penalty for smuggling is the same as the penalty for murder, the smuggler has an incentive to kill the customs officer or policeman who catches him on a dark road (Friedman 2000). Another argument in favour of optimal as opposed to maximal repression is that some law-breaking and crimes are efficient in the sense that the benefit to the perpetrator is higher than the cost to the victims—in other words, the perpetrator would be willing to pay the victims a price higher than what the latter evaluate is the cost (or risk) of the crime to them. The standard example is speeding illegally to rush a person to hospital. Penalties and enforcement efforts should be set to maximize net benefits (Stigler 1970, Malik 1990).[31]

Besides resource costs (more police and customs officers, more jails, etc.) and marginal-deterrence costs, more repression of the underground economy would carry other costs. The costs incurred by the participants of the underground economy to avoid repression must also be included in the costs of a more repressive policy. So are the (presumably important) costs to third parties if resistance leads to the blockade of bridges, roads or railroads.

A complete tally of costs must presumably include the revenue[32] and utility lost by the repression victims, who are often not violent criminals. In *The Wealth of Nations*, Adam Smith (1776, p. 849) had already developed this argument in the case smuggling:

> *Thirdly, the hope of evading such taxes by smuggling gives frequent occasion to forfeitures and other penalties which entirely ruin the smuggler; a person who, though no doubt highly blameable for violating the laws of his country, is frequently incapable of violating those of natural justice, and would have been, in every respect, an excellent citizen had not the laws of his country made that a crime which nature never meant to be so. In those corrupted governments where there is at least a general suspicion of much unnecessary expense, and great misapplication of the public revenue, the laws which guard it are little respected. Not many people are scrupulous about smuggling when, without perjury, they can find any easy and safe opportunity of doing so. To pretend to have any scruple about buying smuggled goods, though a manifest encouragement to the violation of the revenue laws, and to the perjury which almost always attends it, would in most countries be regarded as one of those pedantic pieces of hypocrisy which, instead of*

30. It is now generally recognized that most tobacco smuggling (as well as some other forms of smuggling) originates on Indian reservations; for example, see McLaughlin (2007).

31. In defining crimes and setting penalties, the incentives of the law enforcers must also be taken into account; see Boyer *et al.* (2000).

32. However, the costs in lost revenues do not include fines. Fines are only transfers, from the guilty to the public treasury, and should therefore not be included in revenue losses—except if, as Smith argues (see quote), these moneys were more productive in private pockets than in the public purse.

gaining credit with anybody, serve only to expose the person who affects to practise them to the suspicion of being a greater knave than most of his neighbours. By this indulgence of the public, the smuggler is often encouraged to continue a trade which he is thus taught to consider as in some measure innocent, and when the severity of the revenue laws is ready to fall upon him, he is frequently disposed to defend with violence what he has been accustomed to regard as his just property. From being at first, perhaps, rather imprudent than criminal, he at last too often becomes one of the hardiest and most determined violators of the laws of society. By the ruin of the smuggler, his capital, which had before been employed in maintaining productive labour, is absorbed either in the revenue of the state or in that of the revenue officer, and is employed in maintaining unproductive, to the diminution of the general capital of the society and of the useful industry which it might otherwise have maintained.

It is estimated that 30% of commitments to U.S. state prisons (excluding federal prisons) are for drug offences (Koper and Reuter 1996). An empirical study about drug enforcement in the U.S. concludes that "[t]he reduction in income from a drug conviction is often a much larger share of the total penalty than the combination of fines and the forgone income costs of imprisonment" (Lott 1992, p. 184). In Canada, "23 percent of all criminal charges through Canadian courts in 2002 were attributed to illicit drugs" (DeBeck *et al.* 2006, p. 5). Apparently, some illegal cigarette traders are now given jail sentences (CNW 2007).

That prohibition can be very costly is demonstrated by the contemporary war on drugs, "The War We Are Losing", as Milton Friedman (1991) said. This set of policies has generated much violence, led to warring gangs that have destroyed neighbourhoods, created new real criminals and innocent victims (individuals punished for drug consumption and sometimes people killed in gangs' crossfire). Friedman notes how homicide rates in the U.S. increased during Prohibition and again with Nixon's war on drugs in the 1960s, and how the number of prisoners moved in a similar fashion (Friedman 1991, pp. 56-57)[33].

In a free society, repression of underground markets is necessarily limited by the powers available to the state and by what public opinion will accept. For example, the federal government's Underground Economy Initiative (UEI) implemented in 1993 did have an impact on underground markets as measured by the reduction of tax evasion. However, this reduction only amounted to about $100 million per year according to the Auditor General (Tedds 2005, pp. 161-162). This is little compared to the size of the underground economy.

No practical amount of repression can eliminate the underground economy. Despite Canada's Drug Strategy, the lifetime rate of cocaine use (the percentage of the population having ever used or tried cocaine or crack) in Canada is reported to have increased from 3.8% in 1994 to 10.6% in 2004; in 2005, 4.4% of Ontario students reported consuming cocaine in the previous year (RCMP 2005, p. 1). Some 45% of Canadians say they have consumed illegal drugs during their lifetimes (DeBeck 2006, p. 5). Moreover, from a historical viewpoint, it seems that no repression has ever eliminated illegal markets.

For all these reasons, the pure repression solution appears to be undesirable if not unfeasible.

4.2 Searching for the Optimal Underground Economy, or Weighing Costs and Benefits

Economists usually look for optimal as opposed to minimal or maximal solutions, which suggests that an optimal, not zero, level of underground economy should be the objective (Dobla-Norris and Feltenstein 2003). As the underground economy is made of many different markets (domestic services, restaurant services, home renovation, alcohol, tobacco, etc.), this would imply a case-by-case approach. The net cost of every underground market would have to be evaluated and weighed against the net benefit of the public policy that generated it. If the public-policy-cum-underground-market generates a net cost, the public policy would be abandoned; in the contrary case, the public policy would be retained, and the generated illegal markets considered a necessary cost to get the benefit of the public policy. In each case, the costs of repression would have to be factored in to determine the maximum net social benefit and the optimal level of underground slippage.

The problem with this approach is that the necessary cost-benefit evaluations are impossible to make. Consider, first, the economic costs of underground markets

4.2.1 Economic Costs of Underground Markets

Lost benefits of the generating public policies—As we saw, underground markets cancel at least partly the benefits of the public policies that have generated them. In this case, the costs of underground

33. A recent *Wall Street Journal* editorial argues that drug prohibition has not solved the "corrosive effects [of drugs] on some part of the population", but that "the cost of the war on drugs is quite clear" and includes the violence and the development of organized crime. "Yet, the drugs keep coming, answering the demand." (O'Grady 2007)

markets are the mirror image of the (lost) benefits of public policies.

The other costs of underground markets are as much costs of the causal public policies, since they would not exist without the latter. Let's turn to these.

Resource costs and other costs of repression— The most obvious economic costs of underground markets are the resource costs of enforcement (police time and equipment, courts, jails). Some estimates put the cost of policing and correctional services related to illegal drugs alone at $2 billion dollars per year in Canada (DeBeck 2006, p. 5). The costs that participants to the underground economy support to avoid detection, prosecution and conviction—time and other resources spent in hiding their transactions, lawyer fees, etc.—must be added to the balance. All the resources involved could have produced other (consumption) goods in the economy, which is why their use represents an economic cost. The other costs of repression mentioned above must also be put in the balance: the income and utility lost by punished participants, the possible lost of efficiency of the justice system through decreased marginal deterrence, and the harm to third parties caused by violence.[34]

Productivity costs—Another resource cost or foregone consumption is lower productivity, if, as argued by Palda (1998), the underground economy suffers from diseconomies of scale and other inefficiencies compared to the open, legal economy. The illegal economy favours small-scale businesses, which are often less productive than larger ones. Illegal markets may select firms for their ability to evade taxes as opposed to their ability to satisfy consumers; inefficient firms would then crowd out efficient ones. One intriguing hypothesis suggested by Spiro (2005, pp. 194-196) is that the gap in productivity growth that developed between Canada and the U.S. could be partly due to the growth of the Canadian underground economy. Lower productivity means that those individuals who are less productive (presumably those in the underground economy) have lower incomes and fewer consumption opportunities.

Rent seeking costs—Another problem with the underground economy and the public policies that generate it is that rent seekers intent on coercively preventing competition will be attracted (Paul and Wilhite 1994). "Rent seeking" covers activities to try and obtain privileges from the state (jobs, subsidies, protection from competition, etc.), or to restrict competition in other, violent ways. The rent seekers we are talking about here, called "organized crime", will try to coercively monopolize illegal markets. These rent-seeking activities use real resources (weapons, enforcers, etc.) that are part of the cost of illegal markets.

Schelling (1971) has argued that this monopolization is what distinguishes "organized crime" from other forms of crime. If the supply of an illegal-market good is monopolized by organized crime, the consequences of all monopolies will be observed: higher price, less quantity supplied and demanded. The economic cost of monopoly is represented by what economists call the "Harberger triangle", that is, the value lost from the non production of some units of the good for which the marginal valuation of consumers is higher than the marginal cost. In this case, though, organized crime seems to work towards the official objectives of public policy, not against them, as Schelling (1971, p. 377) noted:

> *The purpose of monopoly has always been to suppress, not to enlarge supply. People who like monopoly prices and punitive taxes on the naughty activities may be pleased that the long arm of organized crime reaches out and levies a tax on the retailer that is passed along to the consumer.*

Violence costs—Markets where participants cannot rely on the justice system to protect them and their property rights are often characterized by endemic violence. Lott and Roberts (1989, p. 373) explain that "[i]f all drug transactions are illegal, then extralegal methods, such as violence and the threat of violence, must be used to enforce contracts. Violence imposes costs on users and sellers"; moreover "violence imposes negative externalities on the rest of society." In a NBER econometric study, Fryer *et al.* (2005, p. 1) suggest that "the greatest social costs of crack have been associated with the prohibition-related violence, rather than drug use per se". They estimate that "crack is associated with a 5 percent increase in overall violent and property crime in large U.S. cities between 1984 and 1989" (*ibid.*, pp. 6-7).

Quality costs—Lower competition and transparency on underground markets tend to bring lower quality standards (and higher potency in the case of drugs—Thornton 1999, pp. 89-110). Some reports suggest that

34. Some practitoners of cost-benefit analysis would exclude any cost or benefit originating in "socially unacceptable preferences" (Boardman *et al.*, p. 38). This introduces the analyst's (or somebody else's) value judgments into the analysis, which I have tried to (partially) avoid by taking all preferences expressed on productive markets as deserving consideration. At any rate, this sort of problem illustrates how cost-benefit analysis is not a simple, value-free exercise. And there are many problems which we don't consider here. One of them is that any utility lost by an individual is a cost in the economic sense (Mishan 1981, p. 135). For example, an individual's dislike of knowing that somebody is drinking alcohol or smoking (or engaging in some other activity) is theoretically a cost that has to be included in the cost and benefit balance. Underground markets, which allow individuals to consume what they would not otherwise have consumed, certainly have costs in this sense. But note that the public policies that were meant to control consumption have corresponding costs for the targeted consumers. The utility lost by the smoker or wine amateur who is forbidden to engage in his pleasure must enter the cost calculus just like the utility lost by the anti-smoker or prohibitionist who is tortured by the knowledge that somebody somewhere smokes or drinks. All these costs are impossible to evaluate in practice, besides raising difficult normative issues.

contraband cigarettes are often found to contain insect eggs, dead flies, mould and even human feces (Ramsay 2007).

Misallocation of productive entrepreneurship—As we saw in Section 1, the underground economy diverts some entrepreneurship talents away from the legal economy towards illegal activities. These entrepreneurs will often have less opportunity to benefit the consumer than they would have if they could exert their talents openly. Similarly, distortions and costs are generated when resources are diverted to some sectors or occupations simply to facilitate tax evasion or avoidance. Entrepreneurs may become more efficient in tax evasion or regulation avoidance than in satisfying consumer demand. Note again how this cost of the underground economy is, in fact, a cost of the public policies that generated it.

Social capital costs—Costs also include lost resources through the undermining of rules and institutions that promote economic efficiency. This sort of cost can be subsumed under the heading of "social capital". One set of rules that is undermined by illegal markets relates to honesty. The depletion of the social capital of honesty may be one of the heaviest costs of illegal markets. Schneider and Enste (2000, p. 108) make this point:

> *Most studies of the shadow economy focus on the influence on the allocation of resources and the loss of revenue for the state. But the impact on official institutions, norms, and rules is even more important.*

A large proportion of the population say they are willing to work underground: 46.4% in Germany, 58.6% in Denmark, 36.3% in Great Britain, 52.7% in Norway, 51.5% in Sweden (Enste 2005, p. 131). In a 1993 Gallup poll, 33% of Canadian respondents acknowledged having paid in cash to avoid sales taxes during the previous twelve months (Gervais 1994, p. 5). A large proportion of the people apparently do not believe that the underground economy is morally bad, as we saw for 40% of Quebecers.[35]

Many economists view the undermining of "general taxpayer morality" (Schneider and Bajada 2005, p. 99) as a cost of illegal markets. According to some reports, 17% of Americans believe that tax evasion is acceptable (James 2005, p. 275). This sort of observation can of course be interpreted in many different ways.

The distortion of economic data—Another cost noted by many analysts is that a large underground economy implies that official economic data are incorrect, and that decisions reached by private or public decision-makers on that basis can be mistaken.

The dangerous dynamics of the underground economy—One probabilistic cost of the underground economy lies in the possibility that illegal markets get out of hand. An illegal market develops when taxes, regulation or a ban drive the price of a product high enough to justify paying the risk premium involved in illegal activities and the investments required for building the required production and distribution networks. This is why it often takes time for illegal markets to develop, especially when the state, as it did in the case of tobacco over the past decade, increases taxes (or other impediments to trade) slowly. As Miron (2003, p. 13) observes, "experience with alcohol and cigarettes suggests that taxes can raise prices by a factor of 2-3 without generating a black market". However, once the underground networks are in place, illegal markets can grow like wildfire. In Montréal, a recent press report documented how an illegal cigarette vendor advertised more or less openly his home delivery services (Croteau 2007). In just one year, the proportion of illegal cigarettes in the Québec market has grown from 22,2% to 31,5% (GfK 2006, CTMC 2007).

4.2.2 Economic Benefits of Underground Markets

Underground markets don't have only costs; they also have benefits, which are often the mirror image of the costs of the causal public policies—costs which they contribute to reduce.

Neutralization of inefficient public policies—The first sort of benefit of the underground economy is the partial neutralization of "bad" or inefficient public policies (public policies that have net costs). The underground economy increases production and consumption compared to a situation where the public policies that generated them remained in force but the illegal markets did not exist. While the situation of producers who have lower productivity in underground markets would be better if there was no cause for these, they are presumably better off than if they did not have the second-best option of the underground economy. Polls realized in Germany and Austria suggest that two thirds of the value added by the underground economy would not be produced in the official economy (Schneider and Enste 2000, p. 78). Many economic studies report that the underground economy carries benefits for economic efficiency and growth (Bajada and Schneider 2005, p. 6). This is easy to understand once it is realized that there is a close integration between the underground economy and the legal economy: two thirds of earnings in the former are immediately spent in the latter (Schneider and Enste 2000, p. 89). On the other hand, a review of the literature by Schneider and Enste (2000, pp. 88-90) concludes that the impact of the underground economy on economic

35. According to figures from Fortin *et al.* (1996), p. 63-64.

growth is ambiguous: if underground markets can also foster the competition and efficiency that are prevented by regulations, lower state revenues may have a negative impact on the provision of public goods and, thus, on economic growth. Ultimately, of course, all the benefits of the underground economy are just another way of saying that free exchange benefits the parties involved, and that individuals will express their "propensity to barter" even if laws try to constrain it.

The paradigmatic case for the relative efficiency of the underground economy was in the former USSR (and Eastern Europe). According to certain estimates, one third of the urban population's income came from the underground economy (see Aleexev 1997). There are reasons to believe that the Soviet economy would have collapsed (earlier) without the relative efficiency of the underground economy.

Built-in protection—The second sort of benefit of the underground economy is the built-in protection it may provide (at least in democratic, developed countries) against the uncontrolled growth of the state. The underground economy provides an exit option for the individual. "A growing shadow economy", writes Enste (2005, p. 127), "can be seen in this context as the reaction of individuals who feel overburdened by the state and who chose the 'exit' option rather than the 'voice' option." It is often more efficient for individuals to protest public policies that harm them by opting out (like moving to another jurisdiction in a federal country), than by protesting verbally or voting. When individuals can opt out by moving to the underground economy, we have a sort of built-in regulator of state growth (Spiro 2005). In this perspective, Demsetz (1982, pp. 120 and 123) writes:

> *As the relative sizes of government sectors grow, so do the unrecorded sizes of the hidden private sectors that operate beyond the reach of tax authorities … making the size of [the government sector] difficult to push much beyond 45 percent of real GNP in a democracy.*

After raising the problem of the depletion of social capital, Schneider and Enste (2000, p. 108) make the same point:

> *The shadow economy can be seen as an indicator of a deficit of legitimacy of the present social order and the existing rules of official economic activities. The exit-option shadow economy is an important constraint on the Leviathan state and can help secure economic freedom.*

4.2.3 Weighing Costs Against Benefits

All the above costs and benefits are to be calculated and added if we are to do a cost-benefit analysis of an underground market generated by some public policy. We would have to estimate, for now and every year in the future, all costs borne by, and all benefits accruing to, some individuals, and net the discounted total to arrive at a net social benefit or a net social cost. A cost-benefit analysis uses money as the measuring rod, so an individual's benefit is the maximum amount of money he would be willing to pay to get the benefit, and an individual's cost is the maximum amount of money he would be willing to pay to avoid the cost.[36] The information and statistical problems are daunting.

Cost-benefit analysis also faces a more formidable theoretical problem, related to the economist's objective of avoiding value judgments. How can we weigh one individual's loss against another individual's gain? How do we evaluate the redistributive effects of any public policy? There is a "simple" way to answer this question: assume a "social welfare function" that represents society's preferences for different distributions of life's advantages. Using this theoretical construct, Bhagwati (1981) concludes that underground markets enhance social welfare in most cases but can reduce it in other cases. The main problem with this approach is the arbitrary character of the social welfare function. It is now a well-accepted conclusion in economics that such a function cannot be derived from individual preferences and values, but must, in some way, be imposed on society (Lemieux 2006a). A social welfare function is non-scientific and represents nothing more than somebody's moral judgement about redistribution. Saying that, "for society", this or this underground market is good or bad translates the personal value judgement of the person who makes the statement.

It thus seems impossible to weigh the costs and benefits of the underground economy, not only because the information is not available, but because of deep theoretical and methodological reasons. Indeed, to my knowledge, full-fledged cost-benefit analyses of the underground economy have never been attempted. For example, the government of Québec has apparently realized no analysis at all (let alone a cost-benefit analysis) of the illegal market for undyed fuel oil.[37] Public policies are determined on the basis of political considerations, of political value judgments in favour of certain classes of voters (farmers, for example, in the case of diesel taxes) and against others (shippers, truckers and car drivers, for example).

36. On cost-benefit analysis, see the manual of Boardman *et al.* (2006).
37. Letters from Revenue Québec dated February 18, 2007, and from the Québec Department of Finance dated April 4, 2007, following access to information requests by the author.

4.3 Doing Nothing

Is the solution then to do nothing, to let the underground economy develop as it will? There are many costs involved in having "the underground economy left unattended", as pointed out by Schneider and Bajada (2005, pp. 98-99). Many of the costs reviewed above are relevant here: productivity costs, rent-seeking and organized crime costs, costs in terms of violence, quality costs, misallocation of entrepreneurship, distortion of economic data, social capital costs, and the dangerous dynamics of a growing underground economy. The last two categories of cost could have unforeseen consequences.

Once contraband networks are established for one commodity, operators sometimes diversify into other commodities. "In central Canada," write the RCMP (2002), "some former tobacco and alcohol traffickers have switched to illicit drugs..."[38] The police also note that "[o]rganized crime is heavily involved in the trafficking and smuggling of most high demand commodities" on illegal markets (*ibid.*).

Doing nothing appears to be a risky approach.

4.4 Changing the Public Policies That Generate Underground Markets

The remaining alternative is to abolish or modify the public policies that generated the underground markets in the first place. This solution is shared by many economists. As put by Enste (2005, p. 126), "[c]uring the symptoms has obviously failed. It is therefore necessary to focus on the causes" of the underground economy. He writes (*ibid.*, p. 123):

> *Tax evasion, illicit work and social security fraud are widely spread. Most governments focus on fighting this deviant behaviour by punitive measures. But empirical data shows contrary to economic theory, that this way is expensive, inefficient and, finally, unsuccessful. Governments have to change institutions (e.g. tax system) and regulations to reduce incentives for illicit work and tax evasion.*

The causes of the underground economy are taxes, regulations, and prohibitions. The only stable solution appears to lie in a change of the public policies that gave rise to them. A realistic goal would be to minimize the chances that the propensity to exchange exerts itself outside of legal markets.

Does this mean that the optimal level of the underground economy is zero? Not really, because any level of taxes or regulations will generate attempts to evade them and, therefore, *some* level of underground economy. However, it would appear that the minimum uncompressible underground economy has been long overshot when 5% of the production has gone underground, and where large chunks of certain industries have been pushed to illegal markets. Abolishing to the extent possible the impediments to exchange on open markets is the only solution that takes seriously both the Smithian vision of exchange and the impossibility of detailed cost-benefit analyses.

This is easier said than done, for the reason expressed in capsule form by Schneider and Enste (2000, p. 86):

> *Some governments, however, opt for more regulations and laws in trying to reduce the shadow economy, mostly because it leads to increased power for bureaucrats and to higher employment in the public sector.*

38. See also Presse Canadienne (2007b).

5. Summary and Conclusion

The analyst trying to evaluate the underground economy is confronted with a number of tricky constraints. The first one is that any public policy, including laissez-faire, implies value judgments which belong to the realm of ethics (or of sentiments like envy, desire for dependence, etc.) and are inherently non-scientific. Economists try to avoid value judgments or, at least, to make implicit the ones that cannot be avoided. The basic value judgment I have used in this article is, I believe, the minimal one that can be made: that there is normative value in letting individuals trade and barter according to their own preferences, except if the exchange is unproductive. An underlying assumption is that a meaningful distinction can be made between productive and unproductive exchanges which basically corresponds to the distinction between victimless crimes and real crimes. The second problem is that underground markets are the consequences of public policies: without taxes, regulations or bans that push individuals out of official markets, there would be no underground markets. It follows that what we call the costs of the underground economy are, in fact, the costs of the public policies that generate them. Third problem: these costs, and the benefits they bring about, are numerous, intermingled, and impossible to evaluate on a case-by-case basis.

Given these constraints, I have reviewed the empirical evidence on the underground economy, and developed an argument that can be summarized as follows. The underground economy is a regular fixture of economic history and of contemporary societies (see Annex 1 for the illustrations mentioned in this paper). It results from public policies that go against the "propensity to barter" that Adam Smith singled out as a unique characteristic of the human species. As for the extent of the underground economy in contemporary societies, many methods have been devised to measure it. Extrapolating Statistics Canada hypotheses, a prudent estimation is that the underground economy in Canada corresponds to about 5% of Canadian GDP. Trying to analyze the underground economy with as few normative presuppositions as possible, I considered four possible public policy approaches to solve the underground economy problem: (1) more repression; (2) aiming for an optimal level of underground markets, that is, weighing costs and benefits on a case-by-case basis; (3) doing nothing, or the status quo; and (4) changing the public policies that generate the underground economy. I have argued that the last solution is the most defensible one in light of economic history, theory and evidence.

Bibliography

Alexeev, Michael (1997), "The Russian Underground Economy in Transition", in Lippert and Walker (1997), pp. 255-273.

Bajada, Christopher, and Friedrich Schneider, Eds. (2005), *Size, Causes and Consequences of the Underground Economy: An International Perspective* (Ants, England, and Burlington, Vermont: Ashgate).

Baumol, William J. (1990), "Entrepreneurship: Productive, Unproductive, and Destructive", *Journal of Political Economy* 98-3; reproduced in Fiorentini and Zamagni (1999a), pp. 18-46.

Becker, Gary S. (1968), "Crime and Punishment: An Economic Approach", *Journal of Political Economy* 72-2, pp. 169-217.

Besson, André (1989), *Contrebandiers et gabelous* (Paris, Éditions France-Empire).

Bhagwati, Jagdish N. (1981), "Alternative Theories of Illegal Trade: Economic Consequences and Statistical Detection", *Weltwirtschaftliches* 117-3, pp. 409-426; reproduced in Fiorentini and Zamagni (1999c), pp. 113-130.

Boardman, Anthony E. (2006), *Cost-Benefit Analysis : Concepts and Practice*, 3rd Edition (Upper Saddle River, NJ : Prentice Hall).

Boyer, Marcel, *et al.* (2000), "Setting Standards for Credible Compliance and Law Enforcement", *Canadian Journal of Economics* 33-2, pp. 319-340.

Boyer, Marcel (2007), *The Perverse Effects of Tax Measures*, Economic Note, Montréal Economic Institute, May 2007; reproduced at *http://www.iedm.org/main/show_publications_en.php?publications_id=179*.

Brennan, Geoffrey, and James M. Buchanan (1980), *The Power to Tax. Analytical Foundations of a Fiscal Constitution* (Cambridge: Cambridge University Press).

Brenner, Reuven (1987), *Rivalry. In Business, Science, Among Nations* (Cambridge: Cambridge, University Press).

Buchanan, James M., et William C. Stubblebine (1962), "Externality", *Economica* 29, pp. 371-384.

CNW (2007), "Jail Term, Fines Among Penalties for Tobacco Offenders", May 15, 2007.

Cowell, Frank A. (1990), *Cheating the Government: The Economics of Evasion* (Cambridge, Mass.: MIT Press).

CRA (2006), *Proceeds of Crime Are Taxable*, Government of Canada (November 2006), at *http://www.cra-arc.gc.ca/newsroom/factsheets/2006/nov/fs061123-e.html*.

CRA (2007), *Convicted Drug Trafficker Fined $55,000 for Evading Tax on Proceeds of Crime*, Government of Canada (July 19, 2007), at *http://www.cra-arc.gc.ca/newsroom/convictions/ab/ab070719-e.html*.

Croteau, Martin (2007), "Des cigarettes de contrebande livrées à domicile", *La Presse*, 30 juin 2007, p. A17.

CTMC (2007), *New Information on Illegal Tobacco Sales: National Study for the Canadian Tobacco Manufacturers' Council*, July 2007; at *http://www.imperialtobacco.ca/onewebca/sites/IMP_5TUJVZ.nsf/vwPagesWebLive/DO65HJNQ?opendocument&SID=&DTC=&TMP=1*.

DeBeck, Kora, *et al.* (2006), "Canada's 2003 Renewed Drug Strategy—An Evidence-Based Review", *HIV/AIDS Policy & Law Review* 11-2/3 (December), pp. 1-12; at *http://www.google.ca/url?sa=t&ct=res&cd=1&url=http%3A%2F%2Fwww.cfdp.ca%2Fbc2007.pdf&ei=A8XMRtDRHIaSggLMoYihDA&usg=AFQjCNEdV5LogIHCOTyaYnJuyOQgLlgC6g&sig2=QbUlN79mOIewjbbQtaP3AQ*.

De Jasay, Anthony (1997), *Against Politics.On Government, Anarchy, and Order* (London and New York: Routledge).

De Jasay, Anthony (1985), *The State* (Indianapolis: Liberty Fund, 1998).

De Jouvenel, Bertrand (1945), *On Power: The Natural History of its Growth* (Indianapolis: Liberty Fund, 1993).

De Tocqueville, Alexis (1835), *Democracy in America*, (London: Longmans, Green, and Co., 1899).

Demsetz, Harold (1982), *Economic, Legal, and Political Dimensions of Competition* (Amsterdam: North-Holland Publishing Company).

Dills, Angela K., and Jeffrey A. Miron (2003), *Alcohol Prohibition and Cirrhosis*, Working Paper No. 9681 (Cambridge, Mass.: NBER, May 2003).

Dobla-Norris, Eva, and Andrew Feltenstein (2003) *An Analysis of the Underground Economy and Its Macroeconomic Consequences*, IMF Working Paper WP/03/23 (Washington, DC: International Monetary Fund).

Dolin, Benjamin (2001), *National Drug Policy: The Netherlands* (Ottawa: Library of Parliament); available at *http://www.parl.gc.ca/37/1/parlbus/commbus/senate/Com-e/ille-e/library-e/dolin1-e.htm*.

Enste, Dominik H. (2005), "The Shadow Economy in OECD and EU Accession Countries—Empirical Evidence for the Influence of Institutions, Liberalization, Taxation and Regulation", in Bajada and Schneider (2005), pp. 123-138.

Fiorentini, Gianluca, et Stefano Zamagni, Eds. (1999a), *The Economics of Corruption and Illegal Markets*, Vol. 1: *The Economics of Corruption* (Chenltenham, UK, and Northampton, MA: Edward Elgar Publishing Ltd., 1999).

Fiorentini, Gianluca, et Stefano Zamagni, Eds. (1999b), *The Economics of Corruption and Illegal Markets*, Vol. 2: *The Economics of Illegal Activities* (Chenltenham, UK, and Northampton, MA: Edward Elgar Publishing Ltd., 1999).

Fiorentini, Gianluca, and Stefano Zamagni, Eds. (1999c), *The Economics of Corruption and Illegal Markets*, Vol. 3: *The Economics of Illegal Markets and Organized Crime* (Chenltenham, UK, and Northampton, MA: Edward Elgar Publishing Ltd., 1999).

Fleenor, Patrick (2003), "Cigarette Taxes, Black Markets, and Crime: Lessons from New York's 50-Year Losing Battle", *Policy Analysis* 467 (Washington, DC: Cato Institute, February 6, 2003); reproduced at http://www.cato.org/pubs/pas/pa-468es.html.

Fortin, Bernard, *et al.* (1996), *L'économie souterraine au Québec. Mythes et réalités* (Québec City: Presses de l'Université Laval).

Friedman, David D. (1990), *Microeconomic Theory: An Intermediate Text* (South-Western Publishing Co.).

Friedman, David D. (2000), *Law's Order. What Economics Has to Do with Law and Why It Matters* (Princeton: Princeton University Press)

Friedman, Milton (1991), "The War We Are Losing", in Krauss and Lazear (1991), pp. 53-67.

Fryer, Roland G., *et al.* (2005), *Measuring the Impact of Crack Cocaine*, Working Paper No. 11318 (Cambridge, Mass.: NBER, May 2005).

Gervais, Gylliane (1974), *The Size of the Underground Economy in Canada* (Ottawa: Statistics Canada).

Giles, David E.A., and Lindsay M. Tedds (2002) *Taxes and the Underground Economy* (Toronto: Canadian Tax Foundation).

GfK Research Dynamics (GfK 2006), *Tobacco Product Illicit Trade Phenomena: National Study for Imperial Tobacco Canada* (Mississauga: July 2006); at *http://www.imperialtobacco.ca/onewebca/*

sites/IMP_5TUJVZ.nsf/vwPagesWebLive/DO65HJNQ?opendocument&SID=&DTC=&TMP=1.

James, Simon (2005), "Tax Compliance Strategies to Tackle the Underground Economy", in Bajada and Schneider (2005), pp. 275-289.

Kesselman, J.R. (1997), "Policy Implications of Tax Evasion and the Underground Economy", in Lippert and Walker (1997), pp. 293-317.

Koper, Christopher S., and Peter Reuter (1996), "Suppressing Illegal Gun Markets. Lessons from Drug Enforcement", *Law and Contemporary Problems* 59-1 (Winter 1996), pp. 119-146; reproduced in Fiorentini and Zamagni (1999c), pp. 131-158.

Krauss, Melvyn B., and Edward P. Lazear, Eds. (1991), *Searching for Alternatives: Drug-Control Policy in the United States* (Stanford: Hoover Institution Press).

Lawrence, Susan V. (2000), "China—A City Ruled by Crime", *Far Eastern Economic Review*, November 30, 2000.

Lemieux, Pierre (2000), "The Economics of Smoking", *The Library of Economics and Liberty*, at *http://www.econlib.org/library/Features/feature5.html.*

Lemieux, Pierre (2006a), "Social Welfare, State Intervention, and Value Judgments", *The Independent Review* 11-1, pp. 19-36; reproduced at *http://www.independent.org/publications/tir/?issueID=46.*

Lemieux, Pierre (2006b), "GDP as a Measure of the Economy", *Economic Exercises*, April 1, 2006, Montréal Economic Institute, at *http://www.iedm.org/main/show_exercise_en.php?exercise_id=20.*

Lemieux, Thomas, *et al.* (1994), "The Effect of Taxes on Labor Supply in the Underground Economy", *American Economic Review* 84-1 (March), pp. 231-254.

Lippert, O., and M. Walker, Eds. (1997), *The Underground Economy: Global Evidence of its Size and Impact* (Vancouver: Fraser Institute).

Lott, John R. (1992), "An Attempt at Measuring the Total Monetary Penalty from Drug Convictions: The Importance of an Individual's Reputation", *Journal of Legal Studies* 21 (January), pp. 159-187; reproduced in Fiorentini and Zamagni (1999c), pp. 454-481.

Lott, John R., and Russell D. Roberts (1989), "Why Comply: One-Sided Enforcement of Price Controls and Victimless Crime Laws", *Journal of Legal Studies* 18, pp. 403-414; reproduced in Fiorentini and Zamagni (1999b), pp. 365-376.

Malik, Arun S. (1990), "Avoidance, Screening and Optimum Enforcement", *Rand Journal of Economics* 21-3, pp. 341-353; reproduced in Fiorentini and Zamagni (1999b), pp. 377-389.

Manning, Willard C., *et al.* (1991), *The Costs of Poor Health Habits* (Cambridge: Harvard University Press)

McLaughlin, Paul (2007),"Contraband Cigarettes Becoming a National Norm", *CMAJ* 176-11 (May 22, 2007), pp. 1567-1568; reproduced at *http://www.cmaj.ca/cgi/content/full/176/11/1567?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=1&title=contraband+cigarettes&andorexacttitle=and&andorexacttitleabs=and&andorexactfulltext=and&searchid=1&FIRSTINDEX=0&sortspec=date&resourcetype=HWCIT,HWELTR.*

Miron, Jeffrey A. (1999), *The Effect of Alcohol Prohibition on Alcohol Consumption* (Cambridge: NBER, May 1999).

Miron, Jeffrey A. (2003), *The Effect of Drug Prohibition on Drug Prices: Evidence from the Markets for Cocaïne and Heroin* (Cambridge: NBER, May 2003).

Miron, Jeffrey A. (2004), *Drug War Crimes: The Consequences of Prohibition* (Oakland: Independent Institute, 2004).

Mishan, E.J. (1981), *Introduction to Normative Economics* (New York: Oxford University Press).

O'Grady, Mary Anastasia (2007), "Canada's Shooting Gallery", *Wall Street Journal*, August 27, 2007, p. A10.

Palda, Filip (1998), "Evasive Ability and the Efficiency Cost of the Underground Economy", *Canadian Journal of Economics* 31-5, pp. 1118-1138.

Paul, Chris, and Al Wilhite (1994), "Illegal Markets and the Social Costs of Rent-Seeking", *Public Choice* 79, pp. 105-115; reproduced in Fiorentini and Zamagni (1999c), pp. 184-194.

Presse canadienne (2007a), "Forte croissance de la contrebande de cigarettes", *La Presse*, May 20, 2007, p. A10.

Presse canadienne (2007b), "La SQ et la GRC démantèlent un important réseau au Bas-Saint-Laurent", May 24, 2007.

Ramsay, Matthew (2007), "Insect, Feces Found in Contraband Cigs; 'You Never Know What You Are Smoking,' Say Police, Health Officials", *The Province*, May 14, 2007.

RCMP (2002), *Project [deleted] 2002, Prepared for: Customs & Excise Branch*, Document partially released following an access to information request by Garry Breitkreuz, M.P. (Ottawa, Royal Canadian Mounted Police).

RCMP (2005) *Drug Situation Report 2005* (Ottawa, Royal Canadian Mounted Police), at *http://www.rcmp-grc.gc.ca/crimint/drugs_2005_e.htm.*

Sauvy, Alfred (1984), *Le travail au noir et l'économie de demain* (Paris : Calmann-Lévy).

Sédillot, René (1985), *Histoire des marchés noirs* (Paris: Éditions Tallandier).

Schelling, Thomas C. (1967), "Economics and Criminal Enterprise", *Public Interest* 7, pp. 61-78; reproduced in Fiorentini and Zamagni (1999c), pp. 346-363.

Schelling, Thomas C. (1971), "What is the Business of Organized Crime", *Journal of Public Law* 20, pp. 71-84; reproduced in Fiorentini and Zamagni (1999c), pp. 364-377.

Schneider, Friedrich (2000), "Dimensions of the Shadow Economy", *The Independent Review* 5-1, pp. 81-91.

Schneider, Friedrich, and Dominik H. Enste (2000), "Shadow Economies: Size, Causes, and Consequences", *Journal of Economic Literature* 38-1, p. 77-114.

Schneider, Friedrich, and Christopher Bajada (2005), "An International Comparison of Underground Economic Activity", in Bajada and Schneider (2005), pp. 73-106.

Shelley, Donna, *et al.* (2007), "The $5 Man: The Underground Economic Response to a Large Cigarette Tax Increase in New York City", *American Journal of Public Health* 97-8, pp. 1-6.

Smith, Adam (1776), *An Inquiry into the Nature and Causes of the Wealth of Nations* (New York: Modern Library, 1937); also available at *http://www.econlib.org/library/Smith/smWNContents.html.*

Smith, Philip (1994), "Assessing the Size of the Underground Economy: The Statistics Canada Perspective", *Canadian Economic Observer* 7-5 (May), pp. 3.16-3.33.

Smith, Philip (2006), *Assessing the Size of the Underground Economy: The Statistics Canada Perspective*, Catalogue No. 13-604-MIB (Ottawa: Minister of Industry).

Spiro, Peter S. (2005), "Tax Policy and the Underground Economy", in Bajada and Schneider (2005), pp. 179-201.

Statistics Canada (1989), *A User Guide to the Canadian System of National Accounts*, Catalogue 13-589E (Ottawa: Minister of Supply and Services Canada).

Stigler, George J. (1970), "The Optimum Enforcement of Laws", *Journal of Political Economy* 78-3, pp. 526-536; reproduced in Fiorentini and Zamagni (1999b), pp. 427-437.

Stiglitz, Joseph E. (1988), *Economics of the Public Sector*, 2nd Edition (New York: W.W. Norton & Company, Inc.).

Sudbury Star (2007), "Cheap Smokes Sold in Legal Grey Area", May 12, 2007.

Sullum, Jacob (1998), *For Your Own Good: The Anti-Smoking Crusade and the Tyranny of Public Health* (New York: Free Press).

Tanzi, Vito, Ed. (1982), *The Underground Economy in the United States and Abroad* (Lexington: D.C. Heath).

Tanzi, Vito (2000), *Policies, Institutions and the Dark Side of Economics* (Chentenham, U.K., and Cambridge, MA: Edward Elgar).

Tedds, Lindsay M. (2005) "The Underground Economy in Canada", in Bajada and Schneider (2005), pp. 157-176.

Thornton, Mark (1991), *The Economics of Prohibition* (Salt Lake City: University of Utah Press).

UN (2007), *2007 World Drug Report*, United Nations, at *http://www.unodc.org/unodc/world_drug_report.html*.

Annex I: Contemporary Examples of Underground Markets and Unproductive Black Markets Cited in this Paper

Irregular Economy

- Construction and renovation services by unlicensed entrepreneurs or workers
- Alcohol
- Tobacco smuggled from foreign countries, manufactured in illegal factories, or sold illegally
- Grey market in satellite TV signals
- Upholstery and furniture repairs
- Dressmaking, repairs and alterations
- Shoe repairs
- Board and lodging
- Domestic and household services (babysitting, etc.)

Black markets—productive

- Drugs
- Prostitution
- Pornography (some)
- Trade in protected species
- Books
- Bull sperm
- Usury loans
- Crude oil
- Electrical goods
- Vegetable oil
- Natural rubber

Black markets—unproductive

- Extortion
- Trade in stolen goods
- Trade in counterfeit goods
- Trade in pirated software
- Theft of TV signals
- Hired killers

Biography

Pierre Lemieux has taught economics at different universities, and is the author of many books on economic and political issues. Besides academic articles (including the co-authored article on property rights in the Dictionnaire des sciences économiques of the Presses Universitaires de France), he has signed many articles in the international financial press. He has also chaired several international academic seminars. He holds a master's degree in philosophy from the Université de Sherbrooke and a master's degree in economics from the University of Toronto. He is affiliated with the Department of Management Sciences of the Université du Québec en Outaouais and is a research fellow at California's Independent Institute. He is currently working on a book which introduces economics to the layman.

ISBN 978-2-922687-21-7