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ORGANIZED CRIME AND ILLEGAL MARKETS

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Abstract

This chapter discusses some of the most influential definitions of organized crime focusing on the differences between ordinary illegal firms and governance structures which supply public services such as the protection of property rights and the enforcement of contracts. The chapter further investigates the relations between the structural features of organized crime and the basic working rules of illegal markets. In this respect, the economic justifications to make markets illegal are discussed as second-best policies in serious cases of asymmetric information and externalities. To understand the origin of organized crime we analyze the implications of the proprietary theory of government. Moreover, to understand the internal structure of organized crime we concentrate on the role of input specificity in performing illegal transactions. A brief discussion of the deterrence policies against organized crime concludes the chapter.
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1. Introduction

After a brief description of the plan of the work the next section analyzes some influential economic definitions of organized crime. We start focusing on the differences between ordinary illegal firms and governance structures. The former supply private goods in illegal or irregular markets while the latter provide public goods such as the protection of property rights and the enforcement of contracts. On this basis we analyze the relations between the structural features of organized crime and the basic working rules of illegal markets. The purpose of Section 3 is to explore the implications of the proprietary theory of government for the analysis of organized crime. Building on the rent-seeking literature we also discuss contributions on the competition between organizations for the control of a given area. The starting point of such models is that if property rights are weakly enforced by the legitimate government there will be greater incentives to invest in destructive activities against other criminal organizations or legal firms exposed to violent threats. Finally, we show how such a rent-seeking approach to the origin of organized crime allows one to draw some implications on its role in influencing the long-run growth of the economy.

Section 4 investigates the relations between different forms of regulatory intervention of the legitimate government and the firms' choice to shift their activities to irregular markets. To develop this point, we consider the related literature on the empirical analysis of the irregular markets building on direct surveys and on indirect monetary methods. In Section 5, we deal with the role of organized crime in illegal markets when it completely substitutes legitimate governments in most of their basic functions. In this area the literature suggests that there is a positive relation between the volume of transactions in illegal markets and the influence of organized crime in legitimate business activities. For this reason, we report on the economic justifications to limit transactions in illegal markets. In particular, we focus on the contributions explaining prohibitions to exchange goods in terms of second-best policies in serious cases of asymmetric information and externalities. In Section 6, we discuss how organized crime is involved in legal markets. In this respect we concentrate on three distinct activities: the supply of illegal inputs to legal firms, the manipulation of public funds and the joint production of legitimate and illegitimate outputs.

In Section 7, we focus on the internal structure of organized crime in the supply of basic inputs required to compete in illegal markets such as protection from police enforcement and money laundering. As for the internal structure, much work has dealt with the enforcement of secrecy codes in shaping the internal rules of organized crime. Similarly, the literature on vertical integration deals primarily with the degree of specificity of the inputs to explain different organizational models. In this setting particular attention is paid to understand how the authority is distributed between downstream firms active in the markets for illegal outputs and upstream governance structures specialized in supplying protection services. Section 8 analyzes some of the main deterrence policies taken up against organized crime. We start discussing the classic defense of organized crime as a monopolistic supplier of illegal goods based on its interest in minimizing the use of violence and in restricting the output levels. To further understand this issue, we briefly describe the effects of the legalization of illegal markets on the barriers to entry and on the equilibrium output. Taking as given the border between legal and illegal markets, we examine some more specific policy issues. In this area, we discuss the relative costs and benefits of addressing deterrence activities against suppliers and purchasers of illegal goods and the merits of enforcement policies exploiting conflicts between the two parties. Finally, we report on the literature dealing with the broad theme of policy design against organized crime with specific reference to the cases when different organizations interact strategically.

2. Definitions of Organized Crime

Fiorentini and Peltzman (1995b) discuss three main economic definitions of organized crime. Here we follow broadly their discussion, but we add a fourth definition that builds on the differences between Schelling (1971) and Gambetta (1988). One of the first definitions can be traced back in the report of the President's Commission on Law Enforcement and Administration of Justice (1967). According to such a definition the core business of organized crime is the supply of illegal goods and services. More specifically, Cressey (1967) - one of the experts working for the Commission - suggests that the differences between ordinary illegal firms and organized crime is that the latter specializes in activities for which there is an autonomous demand, while the former more often undertake purely predatory activities. As a whole, the report admits that organized crime practices coercion against other agents (firms, unions, police agencies) but this is more related to its activities in legal markets that are relatively marginal. In this respect, an occasional use of violence can be explained with the need to invest in military technology to protect property rights in illegal markets, and with the relatively low marginal costs in using such assets once they are in place.

The above definition correctly points at the crucial relation between illegal markets and the more general influence of organized crime on the allocation of resources in illegal activities. However, it suffers from three limitations. First, it is purely descriptive and does not provide a convincing economic explanation for such a relation. Second, it builds on an idea of organized crime as a highly integrated firm - both vertically and horizontally – that operates monopolies in various stages of the production and distribution of illegal commodities. Third, it misses the difference between the role of organized crime as a firm supplying illegal goods to final consumers and as a governance structure imposing regulations and supplying public goods to independent illegal firms. Starting from these criticisms, Schelling (1971) suggests that the core business of organized crime is to impose its protection to other legal and illegal firms under the threat of violence. To practice extortion organized crime must reach a monopolistic control over the supply of violence, at least in a limited area, as its services necessarily include protection against other competing organizations. Similarly, those who provide protection services have to control the supply of corruption to local police agencies to reduce the threat of competing organizations calling for police intervention against them.

To explain the main differences between illegal firms and organized crime, Schelling (1971) discusses the features of those markets where the latter typically develops a governmental authority. The first feature of such markets is that victimized firms should be unable to protect themselves. This explains why illegal or irregular markets are privileged areas for the control of organized crime as illegal firms are less likely to call for police protection. Second, victims should find it difficult to hide themselves. Accordingly, organized crime concentrates most of its extortion on illegal firms that supply goods to final consumers and not on other organizations specialized in appropriative activities. Third, organized crime is more likely to impose extortion on firms whose profits are easily observable. In fact, without an independent auditing authority, monitoring problems may lead to continuous conflicts. Fourth, Schelling notices that organized crime is more likely to practice extortion on illegal firms the higher their asset specificity both in terms of site specificity and of capital embodied in customer relations. For this reason, independent restaurants and shops operating at a local level are often victims of organized crime. Fifth, illegal or legal firms are more likely to end up under the control of organized crime if the payments imposed are tax deductible, imposed on all competitors and if they can be shifted onto the final consumers. This explains why organized crime often covers its core business with legitimate commercial activities as this allows levying taxes supplying overpriced inputs to the victimized firms. Finally, organized crime typically succeeds in becoming a governance structure if the victims of extortion are individuals or small firms. This is because the risk of police intervention increases more than proportionally with the number of agents who know the details of the extortion.

At the end of his paper, Schelling (1971) introduces a qualification of his thesis, which has been developed by Gambetta (1993), and constitutes the basis for a third definition of organized crime. Schelling notices that often illegal firms call for organized crime intervention to provide the public services required to stay in business (for example, corruption of police officers or enforcement of collusive agreements). In this perspective, the tax levied on the protected firms represents the price voluntarily paid for the above services. Gambetta (1993) builds on this intuition and argues that organized crime operates as a governance structure mostly addressed to the underworld so that its activities cannot be reduced to the supply of illegal goods. Compared to Schelling, Gambetta goes further in denying the coercive character of the relationships between organized crime and illegal firms, and suggests that its core business is the supply of trust, that is of a more stable institutional setting for illegal firms. Such supply does not involve only the protection of property rights and the enforcement of contracts, but also the provision of barriers against entry and the organization of collusive agreements. Since there is a voluntary demand for these services, the coercive elements in the relations between organized crime and illegal firms are in its need to use violence occasionally to preserve its reputation as an authority to solve disputes or to enforce contracts.

The idea that organized crime does not only supply illegal goods to final consumers and that behind extortion one can see implicit contracts with illegal firms is coherent with the available evidence on its internal organization (Anderson, 1979). In particular, this study shows that organized crime operates as a firm mainly to cover up its governance activities, but even such role is limited to the provision of intermediate inputs to other small illegal firms. Moreover, to extract most of the rents accruing to the firms using its services organized crime usually enforces a strict control on the number of competitors under its protection.

More recently Alexander (1997) proposes three settings to describe the relationships between organized crime and the firms under its control which differ for the degree of coercion imposed by the former. First, a 'leviathan' model where a racketeer can extract surplus from small competitive firms. Second, a model where a 'dominant firm' colludes with a racketeer in imposing coercion over smaller competitors. Third, a 'cartel' model where groups of legal firms demand the enforcement services of organized crime. The 'leviathan' model builds on the idea that when organized crime acts as a racketeer it can force all firms to adopt a monopolistic price in the downstream market because its information set is complete and its threats are credible (Rubin, 1973). Hence, the 'leviathan' can extract all profits through firm-specific sales taxes and lump-sum taxes negatively related with each firm's marginal costs. This model predicts that organized crime will levy higher firm-specific taxes on the most efficient firms to force them to a greater reduction of their output. The 'dominant firm' model builds on the idea that large firms often may be interested in calling for the intervention of a racketeer to impose sales taxes on rival firms. To maximize profits, tax rates are set to a level that the surviving fringe firms have marginal costs just below those of the dominant firm. It follows that the latter extracts more rents from the taxes than from producing the fringe output. Finally, the 'cartel' model builds on some evidence that legal firms in different industries establish associations and acquire the services of organized crime as an enforcer of collusive agreements.

Comparing these different settings with the available data on the tax levied by organized crime on legal firms, Alexander finds out that the former often imposes a two-part tax. The first component is a lump-sum tax creating an entry barrier for relatively small new entrants and the second is a sales tax to control for overproduction. However, the relatively low level of both rates, and especially of the sales tax, is interpreted as evidence of weak or no discrimination against more efficient firms, and therefore is more easily reconciled with the 'cartel' model. Moreover, the organization enforcing the cartel charges legal firms for the purchase of packaging labels thereby monitoring the market shares of the participants. Finally, the reported evidence indicates that firms belonging to the association, and therefore purchasing the cartel enforcement services, are more stable over the long run. Hence, the levy imposed by organized crime is compensated in terms of higher and/or more stable profits over time.

Reuter (1983) provides a fourth definition of organized crime as a hierarchical structure characterized by long-run horizon, and with an involvement in multiple illegal activities. Such an inductive definition relies more on the author's empirical studies of organized crime activities in different industries than on an attempt to deduct new elements to build a general theory. In this respect, Reuter denies that organized crime can be seen as a firm active in illegal markets since its protection extends to legal firms, its activities include the control of public procurements, and its investments in legal businesses often represent the largest share of its assets. Analogously, Reuter does not fully accept Schelling's idea of organized crime as an authority with a coercive control over the allocation of resources in illegal and irregular markets. Indeed, in his empirical work Reuter shows how difficult it is for a central authority to control entry in such markets and more generally to regulate illegal firms. This is because entry barriers are often low, the costs of monitoring decentralized firms are high, and the threat of such firms calling for police intervention against large organizations is often credible. Arguably, the main lesson that can be drawn from Reuter's contributions is that there are a few economic elements which can be used to characterize organized crime (hierarchy, economies of scale and scope, specific capital assets, durability). However, such elements cannot be used to design deterrence policies against organized crime without a careful investigation of its internal structure and of the fundamentals of the specific markets involved.

3. The Proprietary Theory of the State and the Origin of Organized Crime

After Schelling (1971) who put forward the view of organized crime as a governance structure, other authors analyzed the relations between the origin of organized crime and the different activities of legitimate government. In this respect, Anderson (1995) suggests that there are three main factors for the emergence of organized crime: the investment in military technology to enforce legislation, the definition of regulatory measures including direct public intervention, and the legislative definition of illegal markets.

In this section we discuss the effects of a relatively weak investment in military technology on the origin of criminal organizations specialized in predatory activities. To do so, we follow the analysis of those economists who applied to the activities of legitimate government the same conceptual framework used by Schelling for organized crime. For instance, Baumol (1990) proposes a proprietary theory of the government where the ruling class is made of agents whose objective is to extract rents from their subjects under given institutional constraints such as winning the next elections and/or preserving their tax base. To meet these constraints, legitimate governments have to provide at least some public services in exchange for the taxes they levy. Such services are those primarily required for a system of decentralized markets to operate (protection of property rights and enforcement of contracts) and are the same as those supplied by organized crime to firms in irregular or illegal activities. Hence, Grossman (1995), following Gambetta (1993), builds his model on the close analogy between the taxes levied by the legitimate government and the extortionary duties levied by organized crime, as both share some elements of coercion and of voluntary transactions.

More precisely, Grossman (1995) assumes that firms and individuals can purchase the above public services from the legitimate government or from organized crime. In such a setting, the emergence of organized crime has a positive effect as it reduces the monopolistic power of the legitimate government. However, it may have negative consequences in terms of resources wasted in the competitive process to establish the monopoly over coercion. One of the worst possibilities for the victimized firms is when the two enforcers collude imposing revenue-maximizing taxes to their subjects. On the normative side, Grossman shows that as the ruling class appropriates the tax revenue there will be no widespread opposition to the growth of organized crime that reduces the fiscal pressure. Conversely, if the contest between organized crime and the government makes it possible for the former to become the new ruling class, it is rational for the victims to oppose its growth because it will eventually restore a monopolistic supply of public goods.

In the proprietary theory of government, organized crime becomes a competitor in setting taxes and providing public goods only because the latter has been unable or unwilling to invest enough resources in military technology. Baumol (1990) notices that in doing so the government indirectly provides incentives to other groups to specialize in appropriative activities rather than in productive ones. The most frequently used framework to investigate appropriative activities is that of rent-seeking contests (Hirschleifer, 1988). In these models competitors invest their resources to win the exclusive right to extract economic rents through extortion. Hence, if the monopolistic control over the supply of violence is relatively weak, entrepreneurs will invest in appropriative activities as long as they are more profitable than productive ones.

Skaperdas and Syropoulos (1995) combine this rent-seeking literature with the proprietary theory of government to investigate the origin of organized crime. In their model agents can choose to invest in appropriative or productive activities in an anarchy situation where none has the exclusive right to use coercive means and where agents are characterized by a comparative advantage in one of the two activities. The possibility to appropriate other agents' property is modeled in a rent-seeking contest where the larger the asymmetry between agents' productivity in military technology, the smaller the overall investment in such technology. This is because agents with a lower productivity are aware that their investment has little or no effect on their final share of resources. The outcome of the static game with no exit is that agents specialized in productive activities end up with a smaller share of the total output. Furthermore, in a more sophisticated setting, where agents with a comparative advantage in productive activities have an exit option, there is a progressive self-selection of agents in more homogeneous communities with a loss of productive capacity in those with a greater proportion of agents specialized in appropriative activities. When agents specialized in productive activities are complements to each other, they have a greater bargaining power as their exit further reduces the size of the pie. Finally, in a dynamic setting if there is no clear competitive advantage in the use of the military technology, all agents have strong incentives to invest in such technology. Here, the ongoing conflict reduces the effective protection of property rights and the returns from productive activities. In its turn, this induces exit or deters entry of new agents specialized in productive activities. Even this process does not provide sufficient incentives to reduce the investment in military technology as cooperative agreements do not represent equilibria of the rent-seeking game. Indeed, small initial differences in investment bring about large differences in the final pay-off. Hence, the model suggests that, due to the high returns of investing in violence at the beginning of the interaction, it is crucial that a group of agents emerges from the beginning as the most productive in using the military technology to deter other groups' initiatives.

4. Regulatory Policies and Irregular Markets

Anderson (1995) suggests a second relation between the activities of legitimate government and those of organized crime based on the features of the regulatory regime imposed on legal firms. There are two institutional elements involved in this relation. First, a high degree of regulation increases the compliance costs for legal firms and may induce them to switch some activities to irregular markets where property rights are defined and contracts are enforced by organized crime. Moreover, as firms operating in irregular markets often increase their market shares due to their lower costs this brings larger parts of the productive system under the control of organized crime. Second, as noticed by Tanzi (1995), regulation is usually coupled with a high degree of bureaucratic discretion and this provides strong incentives to shift potentially productive resources into corruption. Since the supply of corruption is more efficiently managed through monopolies or collusive agreements to avoid a dissipation of resources, this represents an incentive for criminal organizations to acquire some control over the allocation of public resources.

Along these lines, Smith (1976) investigates the effects of regulation on the size of the irregular markets building on the assumption that there is an unavoidable conflict between the objectives of the government in passing legislation and those of the economic agents who strive to minimize costs. The main purpose of the model is to show that the effects of any regulatory measure can be understood only taking into account the incentives of the regulated agents to shift resources into irregular markets. More specifically, Smith focuses on taxation as an instance of cost-increasing regulation because it is relatively easy to be measured and because of greater data availability. He elaborates a relatively simple two-market model, where goods in the legal and irregular markets are imperfect substitutes for consumers due to an expected sanction if discovered trading in the latter. In this setting Smith analyzes the effects of changes in taxation and in enforcement activities over the equilibrium in both legal and irregular markets. The reduction in the output level in the legal market, due to an increase in taxation, is understated if one does not take into account the possibility for producers to trade in irregular markets. Moreover, no clear effects of a tax increase can be derived for the equilibrium price in both legal and irregular markets. This is because legal and illegal goods are substitutes in consumption and in production so that a change in the price on the legal market (due to increased regulation) has effects on the shape of the demand and supply curves in both markets. Overall, the effect of a tax increase on the profit levels for firms dealing in both markets depends on how they distribute their output across the two. More definite results can be obtained only for firms dealing exclusively in the legal market as an increase in production costs reduces, ceteris paribus, the unitary profits. Smith also provides an empirical analysis of the effects of an increase in regulatory standards on the volumes traded in both legal and irregular markets for distilled spirits. The main result is that demand and supply respond more to changes in tax rates than to changes in market prices with no relation with government regulation. Indeed, both consumers and producers substitute between legal and irregular markets after a change in the regulatory costs. Smith also finds a positive correlation between tax rates and prices in the legal market: the shift of producers and consumers to the illegal market has a greater effect on the supply curve (shifting it upward) than on demand (shifting it downward) in the legal market.

In a similar vein, Anderson (1995) examines other regulatory measures that provide incentives for legal firms to invest in irregular markets and therefore to create a market for the public services supplied by organized crime. First, there is regulation aimed at increasing quality standards which often involves a limited supply of licenses or permits (building, commercial, professional, polluting) or other entry barriers. In these circumstances organized crime tries to control the distribution of the licenses using its comparative advantage in centralizing corruption and/or in enforcing cartels among incumbent firms. Second, there is price control regulation or interventions to set subsidies, quotas or other constraints to exchange. In these cases organized crime avoids quality standards and/or reports non-existing output taking advantage of its protection against the enforcement of police agencies. According to the New York State 'Organized Crime Task Force' Report (1989) the involvement of organized crime in the allocation of public funds is a consequence of two distinct sources of comparative advantage. First, in bribing and threatening public officers and, second, in coordinating collusive agreements between firms and the public administration. When such collusive agreements take place, organized crime succeeds in extracting rents from both public purchasers and private suppliers. According to Grossman (1995), in these collusive agreements greater stability is often obtained when electoral support is provided in exchange for a reduction in the enforcement efforts. In these circumstances the criminal organization can also manage to direct the enforcement activities against its rivals. It follows that while the enforcement agencies meet their targets in terms of quantitative indicators, the incumbent obtains further positive externalities. Moreover, both sides strengthen their fiduciary relationships and reduce the incentives to act opportunistically. On similar lines, Tanzi (1995) observes that collusive agreements between local politicians and criminal organizations become less stable in case of fiscal crises as the latter reduce the possibility to activate public expenditure without a corresponding increase in the fiscal pressure. In such a case it is unlikely that public administrations succeed in appropriating large rents from direct interventions without reducing their electoral support. A greater political instability may therefore decrease the incentives for criminal organizations to collude with politicians as their expected stay in power is shortened.

To measure the size of irregular markets and the potential threat they represent for the activities of the legitimate government some authors attempted to overcome the complex methodological problems due to a lack of reliable data. In this perspective, Feige (1994) proposes a definition of the illegal economy which includes all transactions that violate specific statutory rules concerning the scope of what is regarded as legitimate trade. On the other hand, irregular activities include all transactions which belong to the area of the legal economy as defined above, but violate statutory and/or administrative rules related to one or more of the following areas: property relationships, commercial licensing, labor contracts, torts, financial credit and social security. Feige describes two lines of research aimed at measuring the size of the irregular markets. First, the direct approach based on the analysis of tax auditing and other reports concerning the level of compliance with fiscal legislation and regulatory standards as a whole. Second, the indirect approach based on the analysis of macroeconomic indexes over time. As for the latter, Tanzi (1983) develops a currency approach which builds on the assumption that irregular transactions are mostly undertaken via cash payments. Accordingly, one can detect changes in the irregular transactions observing, ceteris paribus, changes in the demand for liquidity. Similar in spirit is the approach proposed by Feige (1989) which builds on the assumption that the Fischer quantity equation holds through time. On this basis, knowing the amount of liquidity, the level of prices, and the velocity of rotation, one obtains relatively good estimates of the total transactions taking place in the system. Comparing such total transactions with the nominal GDP one could approximate the transaction volume in the irregular markets. Feige also discusses other lines of research that adopt an indirect approach but rely on real variables from national accounts and labor market data. In this group of contributions, Macafee (1982) and Park (1979) propose a quantitative analysis of the irregular markets which relies on the discrepancy between national expenditure and national income as it can be related to unreported income from illegal or irregular transactions. Analogously, Contini (1981) tries to estimate the overall size of the irregular markets looking at changes in the labor force participation rate with respect to a standard level which is assumed to be observable in the absence of illegal or irregular activities.

Although the above authors admit that the lack of reliable data represents a serious obstacle to measure the size of the informal economy, building on these results Schneider (1994) proposes an approach to investigate how that size is related to the overall burden of taxation and to the level of regulation. More precisely, Schneider shows that increases in fiscal pressure or in regulatory intensity (the number of existing laws) and in the complexity of the tax system (a Herfindahl-Hirschman concentration measure of the revenue sources) are all strongly related the size of the illegal and irregular markets. Moreover, Schneider's results suggest that even a decline in the fiscal pressure is not a sufficient condition for a reduction of the size of the irregular economy if it is not followed by a fall in the indexes of regulatory complexity and intensity. Related to this literature on the size of the shadow economy, Reuter (1984) tries to quantify the multiplier effect of the expenditure in illegal markets on the economy as a whole. In a first model he assumes that illegal goods are produced by foreign criminal agents and therefore can be regarded as imports in national accounts. For this reason, purchases of illegal goods have no impact on national income. Then Reuter assumes that the producers of illegal goods are domestic so that the expenditure on such goods becomes an export to another country, as they do not emerge in official statistics. In such a case an increase in the demand for illegal goods is similar to a purely exogenous demand shock as it originates outside the regular economy. Assuming that the expenditures in illegal goods result in income for the domestic producers, the multiplier is lower because it depends negatively on the differences in saving propensities between producers and consumers of illegal goods.

5. Organized Crime and Illegal Markets

The neo-institutional literature focuses on the effects of different mechanisms for defining and protecting property rights and for enforcing contracts to explain market performances. In one of the leading contributions to this literature Demsetz (1967) notices that the participants in illegal markets should in principle self-protect their property rights. Indeed, if the government does not provide the basic services required to support the working of decentralized markets private agents willing to trade have to substitute it. As most rent-seeking literature suggests, in similar situations it is likely that after a competition among private agents or groups one of them will emerge as the specialized supplier. Schelling (1971) notices that after such an authority becomes established it is likely that its activities will also include the use of violence and corruption and the provision of inputs at regulated prices. Furthermore, when illegal organizations with large specific assets protect themselves from the police and from other opportunistic behaviors they often generate a positive spillover to other producers not only in the same line of product but also in related markets. It follows that they will find it convenient to exploit these economies of scale and scope. Eventually, when large investments are sunk in protecting property rights and enforcing contracts, such organizations may have sufficient incentives to compete with the legitimate government for the right to provide the above services even for agents active in legal markets.

Building on this perspective, Paul and Wilhite (1994) show that the full social cost of making goods or services illegal should also take into account the dissipation of resources invested in the attempt to establish a monopoly in the supply of protection and enforcement services. In this respect, even agents not interested in obtaining a monopoly position but willing to protect their endowments are forced to invest intensively in that direction. In order to derive their main result, Paul and Wilhite discuss Becker and Stigler's (1974) claim that an increased enforcement against producers of illegal goods on average increases their profits. The authors argue that to draw such a clear-cut conclusion one should address directly the effects on producers' costs of the increased enforcement and, more to our point, on the resources wasted in the attempt to monopolize the illegal market. Paul and Wilhite claim that producers are not attracted by the price increase brought about by the government-induced supply restriction, but by the perspective to obtain rents from the monopolistic control of the illegal markets. Hence, the main consequence of a lack of public enforcement of property rights is to increase the investment in military technology and in corruption. Given these negative consequences, different economic justifications have been offered to explain relatively low levels of public enforcement. Traditionally, authors like Buchanan (1973) or Rubin (1973) stress that in most instances markets are made illegal for paternalistic reasons, that is because consumers do not fully understand the consequences of their actions. According to this view, such markets would have usually reached an efficient equilibrium as agents transact voluntarily and there are no significant imperfections such as external effects from production or consumption.

In a different perspective, Rose-Ackerman (1985) explains the decision of making transactions illegal as a second-best policy to reduce the negative effects of market imperfections. Rose-Ackerman proposes two arguments to limit the rights of exchange on efficiency grounds, and a third argument which has to do with the intrinsic limits of the technology used to enforce the ban. First, goods such as body organs or human blood need costly quality controls which make it difficult for purchasers to evaluate the available alternatives. Moreover, even if purchasers were able to discriminate, such goods are often demanded in such an urgency that their bargaining power is negligible. Hence, Rose-Ackerman argues that to avoid excessive *ex post* litigation over the terms, the government might declare such contracts illegal on efficiency grounds. Following this argument, one could object that if the government's objective is to increase the standards of quality, measures aimed at reducing entry but not blocking it completely (for example, licenses) should be used to deter producers who would specialize in low quality supply. However, licensing practices tend to discourage particularly low-income consumers and to shift their demand to irregular markets where non-licensed suppliers operate. Hence, the government's ban could be further rationalized as a measure to avoid negative redistributive effects from the attempt to regulate such markets.

The second efficiency argument to make markets illegal is that the production and/or consumption of illegal goods with a voluntary demand can give rise to negative external effects, which are not accounted for by the parties involved. For instance, the consumption of heavy drugs may lead to the impossibility for consumers to face their obligations using their legal incomes and therefore increase the number of thefts and other predatory crimes. In its turn, this would force other agents to invest in defensive measures that increase the opportunity costs of holding property and trading. Moreover, the consumption of drugs may lead to a worsening of consumers' health conditions to a point that they cannot cover the resulting medical expenses and therefore require some sort of public or charitable intervention. Rose-Ackerman also suggests an additional and subtler source of externality arising from the imperfections of the enforcement mechanisms. Her example is centered on the trade of species in danger of extinction. In such a case the purpose of the ban is to deter further killing of endangered animals and, on efficiency grounds, this should not be extended to animals killed in the past. However, due to the impossibility of detecting differences between animals killed in different periods of time, all transactions are banned. In this respect, the suppliers of new animals in danger of extinction create a negative externality for the owners of animals killed in the past. The example could be regarded as trivial due to the relatively small dimension of such a market compared to other illegal markets, but its logic can be extended to cover other interesting cases. For instance, in the market for illegal drugs, a similar external effect can be relevant as most economists (Moore, 1973; White and Luksetich, 1983) suggest that an appropriate regulatory practice would be to increase the price only for new consumers to discourage their consumption. At the same time the deterrence policy should interfere less with the market price for old consumers not to create rents for producers and traders. However, as most illegal drugs are characterized by very small hoarding costs, it is virtually impossible to enforce a discriminatory regime against new consumers, as the old ones would have too great incentives to enter the trade. As arbitrage would then be declared illegal, it is likely that organized crime would take over from old consumers at least for the large-scale trade.

6. Organized Crime and Legal Markets

Although most economists agree that the larger share of activities of organized crime is linked with the provision of governance services for firms involved in irregular or illegal markets, some influential contributions investigate its intervention in legal markets. For instance, Reuter (1987) and Gambetta and Reuter (1995) investigate the enforcement of cartel agreements in industries with auction markets managed by public administrations (for example, waste disposal, road construction, building). Such markets are often highly competitive due to the relatively low level of specific inputs and cartel agreements are unstable as it is difficult to detect and to sanction defections. The role of organized crime is therefore to increase the stability of such agreements threatening to punish the firms who defect. On similar lines, Gambetta (1988) suggests that a separate service provided by organized crime to legal firms is protection from entry of new competitors. This is because it is neither in the interest of the incumbent firms nor of organized crime to allow entry, since this would ultimately reduce the rents that are at least in part appropriated by the latter.

Organized crime activities in legal markets extend also to the direct investment and management of legitimate businesses. In this respect, Anderson (1979) suggests that the main reason for organized crime to start legitimate business activities is that these activities allow organized crime to exploit economies of scale and scope related to its illegal activities. First, members of the organize crime need a source of legitimate income to hide their true business. Analogously, in the supply of illegal goods or services there is a need for places to trade so that small shops, bars and restaurants are used to cover activities related to loan-sharking or illegal betting. Second, illegal activities often produce outputs or use inputs that are also needed in the legal ones (transportation, communications, warehousing) so that it is profitable to integrate the two. Third, organized crime needs to launder at least part of its profits. To do so through a business activity under its control reduces the risks involved in money laundering. Fourth, the legitimate business can be seen as an occasion to diversify the organization’s portfolio with investments characterized by a different mix of risk and returns. Fiorentini and Peltzman (1995b), following Schelling (1967), discuss the features of the legitimate activities in which it is more likely to observe direct investments by organized crime. In this respect, profits from illegal activities are often invested in industries with relatively mature technologies and protected from international competition. In more competitive settings the comparative advantages of organized crime in legal businesses (monopolistic control of the input markets and especially of the labor unions, availability of capital at low cost and direct threats to rival firms) are not likely to be relevant. For instance, large multinational firms active in open markets often compete over product and process innovations and/or financial diversification. Also Gambetta and Reuter (1995) discuss the market features more likely to elicit the intervention of organized crime, reaching similar conclusions. In particular, they find that such intervention can be observed in markets with low barriers to entry both in terms of sunk capital and product differentiation.

Anderson (1979) notices that in the debate on organized crime's legitimate activities opinions differ on how much coercion is used against legal firms. According to the report of the President's Commission on Law Enforcement and Administration of Justice (1967), organized crime disrupts competition through predatory practices and represents a serious threat for all legal firms involved. On the contrary, MacMichael (1971) suggests that the possibility for organized crime to take advantage of these practices is limited by the greater visibility of legal activities. Indeed, there are increasing risks of losing profits from both legal and illegal activities due to a more active police enforcement as legal firms are more likely to call for its intervention. More generally, although an increase in the transactions under control of organized crime has negative consequences for the development of a given area, it may not be always appropriate to concentrate deterrence efforts to prevent money laundering. Fiorentini and Peltzman (1995b) suggest that when criminal organizations obtain a high level of illegal profits one should compare the relative social losses from their investment in other illegal activities or in legal ones. This is because, even if an extremely costly deterrence mechanism could prevent their laundering, illegal profits would be invested in other illegal activities or in other countries. Hence, for a given level of enforcement, one must face a trade-off between reducing the area of legal transactions under control of criminal organizations and reducing the area of the illegal transactions.

7. Internal Structure and Vertical Integration of Organized Crime

One of the first studies of the internal structure of organized crime is Jennings (1984). In his view, the central function of organized crime is to require its members to take an oath not to cooperate with the police and to enforce such an oath by punishing those who fail to comply with it. However, since the relative monitoring and enforcing costs are high and rapidly increasing with the number of members and markets involved, organized crime core business is concentrated in relatively few activities. Moreover, Jennings shows that the enforcement of the oath is valuable only if the illegal activities of organized crime require specialized agents working in teams and running substantial risks if one betrays the others. On the contrary, if the illegal activities are mainly performed individually, the enforcement of the oath is relatively useless. Also Gambetta (1988) draws attention to the relevance of secrecy in shaping the internal structure of organized crime not only to avoid detection from the police, but also to manage different sources of intelligence which can be used to maximize its profits. In this respect, Gambetta notices that the comparative advantage of organized crime in selling its protection services is much greater when those on the demand side know little of its internal structure as the organization would be more exposed to police intervention. A recent development in the analysis of the internal structure of organized crime is Polo (1995) who models the latter as a hierarchical organization where the principal hire agents to carry out tasks usually requiring to commit serious crimes. The main problem of the principal is to design a set of incentives constraining agents' opportunistic behavior in absence of legal contracts. To solve this problem the principal offers contracts where the enforcement of the terms depends on the credibility of the mechanism to sanction the agents who defect.

More generally, the economic literature on the vertical structure of organized crime begins with Schelling (1971) who suggests that the latter integrates downstream with illegal firms' markets when one or more of the following conditions apply: First, when the downstream markets are natural monopolies so that the implicit contracts described in Polo (1995) are particularly subjected to the opportunistic behavior of the illegal firms that might threaten the governance role of organized crime. Second, when there are external effects mainly due to the need to supply violence and corruption which can be internalized through integration. In these circumstances a centralized control avoids duplications of costs and reduces the dissipation of resource in appropriative activities. Third, when financing illegal firms' activities through an integrated structure allows for a more efficient portfolio strategy (Rubin, 1973). Fourth, when contracts may become source of evidence against the agents who sign them. In other words, the impossibility to use detailed contracts in dealing with complex transactions reduces the advantages of the market over an integrated structure. Fifth, when the illegal firms enjoy large informative advantages and are able to hide most of their profits.

However, some authors (Reuter, 1983; New York State Organized Crime Task Force, 1989) stress that there are limits to the benefits of increasing the area of economic transactions directly managed by a centralized organization. According to Reuter, the main limit of such organization has to do with the rapidly increasing costs of monitoring and coordinating agents with conflicting interests. In this respect, the need to keep a centralized control over the use of violence and the fact that police agencies invest more intensively against large-scale organizations might explain the emergence of relatively small local monopolies. Indeed, the first condition provides incentives to reach a monopolistic control while the second limits it to a local area. Second, precisely because the property rights over resources used in illegal activities can only be enforced at very high costs, to concentrate such rights in a centralized organization increases the negative consequences of police enforcement. An analogous reasoning holds for the human capital integrated in large organizations which is at greater risk in case of violation of the secrecy code. Third, in some illegal markets it is virtually impossible to impose a centralized control because of the low level of the barriers to entry. Finally, there might be a structural instability in the financial flows used in illegal activities due to the police enforcement against money laundering which can discourage large-scale sunk investments even by risk-neutral agents.

More recently Dick (1995) develops a framework to analyze the issue of the vertical integration in different institutional settings. In particular, Dick focuses on the illegal firms' choice between buying protection from a specialized organization and producing it internally. To investigate such issue, Dick suggests an decomposing the total transaction costs between production and organizational costs. Production costs are typically lower in a specialized organization due to economies of scale and scope and would call for market supply by a non-integrated producer. On the contrary, the organizational costs to coordinate inputs in specific uses and to adjust to unforeseen contingencies are lower in an integrated structure because of the high specificity of the assets involved. Building on this general framework, Dick (1995) suggests that small firms active in illegal markets are usually interested in buying protection from organized crime only if the latter is not specific to the local market. In such a case protection is more efficiently provided inside the illegal firms so that one of them will enforce the rules underlying the working of the illegal markets. Conversely, illegal firms will buy protection from specialized organizations when their expected time horizon is sufficiently long so that it is worthwhile to define and enforce complex market transactions. Such a longer time horizon is often observed when illegal firms and organized crime share a common culture, for instance due to ethnic networks, so that transaction costs are low and self-enforcing agreements are more likely to be feasible. Finally, illegal firms will self-supply protection if there is a high degree of uncertainty over the terms of the transactions. This explains why organized crime supplies protection to illegal firms dealing with victimless activities where the activities are easily observable, while self-protection is the rule for organizations involved in appropriative activities.

8. Normative Analysis

Buchanan (1973) introduces a controversial argument in the analysis of the deterrence strategies against organized crime. His basic assumption is that organized crime tends to control, directly or indirectly, the allocation of resources in illegal markets. In such a role it operates approximately as a monopolist whose interest is to block entry of new competitors and to limit output. Accordingly, a legislator willing to minimize the level of transactions in illegal markets should not target its deterrence policies against organized crime, which helps to pursue a similar objective. Buchanan also evaluates the distributive effects of a monopolistic structure characterized by a large share of surplus invested in other illegal activities. In his view, such distributive effects do not represent a sufficient reason to concentrate deterrence efforts against organized crime. Indeed, if there are economies of scale in the production of illegal goods a monopoly reduces the opportunity costs as it requires fewer resources per unit of output. Buchanan's analysis deals only with the role of organized crime in illegal markets and not in predatory activities. This means that his model does not address the negative effects of organized crime's supply of violence and corruption. This notwithstanding, compared to other supply structures one can argue that illegal monopolists prefer lower levels of violence and corruption precisely because they internalize such external effects.

Schelling (1967), building on his analysis of organized crime as a coercive authority, suggests that the first priority of any deterrence policy should be to legalize as many illegal markets as possible. The idea behind this is that only by reducing the rents available in the illegal markets can one limit organized crime's role as a governance structure for firms active in legal, irregular and illegal activities. Moreover, among the social costs of making some markets illegal one should consider that profits are used to bribe enforcement agencies and the public administration and that potential victims are led to invest in appropriative activities. To strengthen his thesis Schelling suggests that organized crime is unlikely to keep its control of the legalized markets since they are not characterized by high barriers to entry. Following the same reasoning, Tanzi (1995) proposes reducing the areas of direct public intervention because they are often run through auction markets where organized crime operates as the enforcer of collusive agreements between legal firms and the public administration.

Given the particular relevance of the features of police interventions in explaining the size of illegal markets, several economists analyzed the specific deterrence policies adopted against the criminal organizations running such markets. In this respect, Fiorentini and Peltzman (1995b) report that in most illegal markets (drugs, betting, loan sharking, prostitution, smuggling, counterfeiting) police agencies concentrate their efforts on agents involved in productive and trading activities more than on consumers. This is probably due to the recognition that demand is voluntary, and therefore if consumption gives rise to relatively low negative externalities, to target consumers would impose on them a rather high welfare loss. Moreover, if one takes into account the enforcement costs, consumers are often too many and too dispersed to be an efficient target for effective deterrence efforts. On similar lines, most empirical studies on industries where irregular activities involve a large size of resources show relatively low levels of entry barriers and asset specificity (New York State Organized Crime Task Force, 1989). This makes it difficult to design a deterrence policy against producers or traders as they are easily replaced by new organizations. To reduce the consequences of this problem Lott and Roberts (1989) suggest that the police should try to exploit the conflicts between parties involved in illegal transactions. This follows the analogy with those irregular markets where transactions violate price or safety regulations (house rents, loan sharking) and where one of the two contracting parties can be given enough incentives to denounce the other. A similar strategy, centered upon the use of potential conflicts between agents in the same organization, has been extensively used in fighting organized crime through informants' protection schemes.

These difficulties in targeting small illegal firms can explain why most resources are used to contrast the organizations involved in large-scale trading of illegal goods, in financing other illegal firms' activities, in laundering the profits from such activities and in bribing public officials. Indeed, all these activities involve human and physical capital assets extremely specific and rather difficult to be replaced in the short run. However, large organizations are also more reactive against the enforcement activities of the legitimate government as they have much more at stake. Hence, especially if such reactions take the form of increased corruption and violence against the police agencies (Fiorentini, 1995) it might be advisable to address part of the deterrence efforts against consumption strengthening the enforcement on the demand side. This is especially so if such policies are targeted against markets with a high demand elasticity (Becker and Murphy, 1988).

To specify appropriate deterrence policies aimed at reducing illegal transactions, agencies should also consider the strategic interactions between criminal organizations. In this respect, if there is a monopolistic or oligopolistic supply the allocative and distributive effects of an increase in the deterrence effort depend on the market structure emerging after the enforcement. For instance, if the market becomes competitive and barriers to entry are eliminated, in the long run more illegal goods will be traded at the new equilibrium (Buchanan, 1973). On the contrary, if the entry barriers are not lowered, strong enforcement activities against an incumbent may favor the surviving organizations increasing their profitability and therefore their capacity to supply violence and corruption (Cellentani, Marelli and Martina, 1995). In similar situations it is likely that an increased deterrence effort will lead to greater resources invested in corruption and violence.

Finally, the design of effective deterrence policies should take into account that organized crime's supply of services to legal, irregular and illegal firms is a relevant source of income in areas with large-scale unemployment. For this reason, although the aggregate negative consequences of organized crime activities on the growth of the legal economy are extremely large, there are problems in eliciting continuous support for the fight against it. This is not only because organized crime can directly threaten its opponents and corrupt police agencies, but also because it can buy support with distributive policies implemented jointly with local politicians (Grossman, 1995). Accordingly, most communities where organized crime plays a relevant role can be described using a prisoners' dilemma framework where individual agents are damaged in the short run by its disappearance and are therefore unable to coordinate themselves to reach more efficient outcomes.

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