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## The Burden of Crime on Development and FDI in Southern Italy

Vittorio Daniele

Crime imposes significant costs on society. These costs are varied: there are those relative to protection and prevention, those sustained by victims as a consequence of crime and those for the response to crime. They correspond to monetary payments that fall directly on both private individuals and the community. Estimating these costs is a complex but useful operation, both for designing strategies to fight crime and for evaluating the effectiveness of the measures applied.<sup>1</sup>

In a wider sense, though, crime imposes costs that cannot be calculated in terms of direct monetary payment. Since a high incidence of crime is detrimental to legal economic activities, it implies a loss in development opportunities, employment and investments, both foreign and domestic. In other words, some effects of crime can be considered “negative externalities”, that is costs that bear indirectly on the community and which can be defined as a sort of social or external cost of crime.

Because of the historically rooted presence of *mafia* organisations in its southern regions, Italy represents an interesting case study for examining the extent of these costs. Mafia-type criminality can hamper development in several ways: the most obvious is the control of a local market and the imposition of extortion on firms. Other effects of mafia activities that have economic and social costs derive from its infiltration into the institutions, the appropriation of a part of public expenditure and the creation of a local socio-institutional climate unfavourable to investment by legitimate firms. The ensuing costs are represented, for example, by lower productivity, the flight of legitimate companies and, more generally, in lower economic growth rates. A high incidence of organised crime, furthermore, contributes to the creation of an unfavourable business climate that is a disincentive for

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<sup>1</sup>For the methodology and classification of the costs of crime see, for instance, Czabanski, *Estimates of Cost of Crime*; an application for the United Kingdom is offered by Brand and Price, *The Economic and Social Costs*, updated by Bubourg et al. in Home Office Report 30/05.

national and foreign investment. As pointed out by the Governor of the Bank of Italy, Mario Draghi,<sup>2</sup> in southern Italy, organised crime is a burden on economic development and notably increases the costs of social and economic activities.

Even if the mafia is unanimously considered a strong constraint on regional development, surprisingly few studies have analysed the economic effects of crime in Italy from a quantitative point of view.<sup>3</sup> The aim of this article is to examine some of the main studies carried out on the subject, focusing on the effects of organised crime on economic development and, particularly, on foreign direct investment.

### The geography of organised crime in Italy

Various crimes have a negative effect on economic development. Other than violent crimes, such as homicides, or those against property, there are criminal offences that hamper economic outcomes, distorting the business environment and local institutional systems, creating an inefficient allocation of resources, generating waste, deteriorating public services and welfare. Widespread corruption and criminal infiltration in the institutions are among these criminal offences. The detrimental effects of corruption on private investment and, particularly, on the efficiency of public spending, have been widely recognised at both the national and international levels.<sup>4</sup> With particular regard to criminal conditioning on local institutions, mostly related to the mafia, a recent study conducted by sociologist Vittorio Mete shows how the infiltration of clans in local administrations is aimed at controlling a part of public resources and, above all, at reinforcing the power of the clan that controls the territory.<sup>5</sup> The extension of this shadow phenomenon can be indirectly quantified through data on municipal administrations dissolved for mafia infiltration. During the 1991–2008 period, 181 municipalities in Italy were closed down by the government because of mafia infiltration. Fig. 1 shows that 171 of these municipalities were in the three southern regions with a historical presence of mafia organisations. Even if mafia organisations have spread territorially to some areas in central-northern Italy in the last decades, they remain deeply rooted in their traditional contexts.

To illustrate the geography of crime in Italy, the subsequent analysis will focus on official data regarding some criminal offences related to the presence of mafia. It is

<sup>2</sup>Draghi, *Il Mezzogiorno e la politica economica*, 5.

<sup>3</sup>For an economic approach to organised crime, see, among others: Fiorentini and Peltzman, *The Economics of Organized Crime*; with particular reference to the Italian case: Becchi, *Criminalità organizzata*; Marselli and Vannini, *Economia della criminalità*; Centorrino and Signorino, *Macroeconomia della mafia*; and Zamagni,  *Mercati illegali e mafie*. For a review of the literature on the effects of crime on economic development in Italy, see, for example, Daniele, “Organized Crime and Regional Development”.

<sup>4</sup>See, for example, Mauro, “Corruption and the Composition of Government Expenditure”; for the case of Italy, Del Monte and Papagni, “Public Expenditure, Corruption and Economic Growth”.

<sup>5</sup>Mete, *Fuori dal comune*.

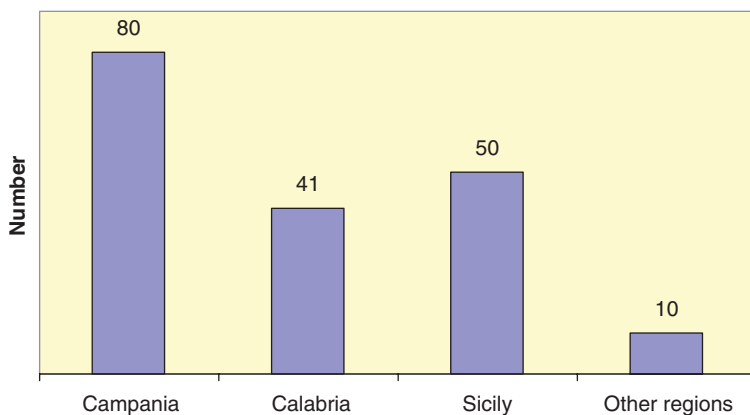


FIG. 1. Municipal administrations dissolved for mafia infiltration in Italy, 1991–2008  
 Source: Mete, *Fuori dal comune*, 73.

important to point out that official statistics have some limitations: first, the incidence of crime does not necessarily coincide with the presence of mafia clans; second, in some cases, official data tends to under-report the actual extent of the *mafioso* phenomenon. Nevertheless, this data offers a useful illustration and quantification of regional differences in the incidence of crime.

One kind of criminal offence typical of mafia-type organisations is extortion. Numerous judicial enquiries and an ample literature have shown that all clans impose the payment of the *pizzo*.<sup>6</sup> While on the one hand it ensures a regular flow of income to the mafia gangs, on the other, it also guarantees monopolistic and close control of the territories in which the clans exert their power. In its most common form, again typical of the mafia, the extortion racket is a sort of tax imposed by the gangs for providing “protection services”, but business activities also suffer other kinds of conditioning from mafia organisations, such as the imposition of a labour force and the forced supply of goods and raw materials.<sup>7</sup>

According to official data, in the 2004–07 period, a little over 22,900 extortions were reported in Italy, of which 53 percent were in the regions of southern Italy (*Mezzogiorno*).<sup>8</sup> The data includes all kinds of extortion, not only those attributable to mafia-type organised crime. However, if one looks at the number of extortions per 10,000 inhabitants, it is evident that the incidence in the *Mezzogiorno* is almost double that in the rest of the country, with peaks in Calabria, Campania, Apulia and, to a slightly lesser degree in Sicily (Fig. 2).

<sup>6</sup>In Southern Italy, *pizzo* is slang for extortion. For the Sicilian *Cosa nostra*, see Catanzaro, *Il delitto come impresa*, Gambetta, *La mafia siciliana*, and La Spina, *I costi dell'illegalità*; for the Calabrian *'ndrangheta*, see Arlacchi, *La mafia imprenditrice*, Ciconte, *Storia della 'ndrangheta*; for the Neapolitan *camorra*, see Monzini, *Gruppi criminali*.

<sup>7</sup>Censis, *Il condizionamento delle mafie*.

<sup>8</sup>Data from the Italian National Institute of Statistics (ISTAT) and, for 2007, from the Ministry of the Interior, Department of Public Security; see, Censis, *Il condizionamento delle mafie*.

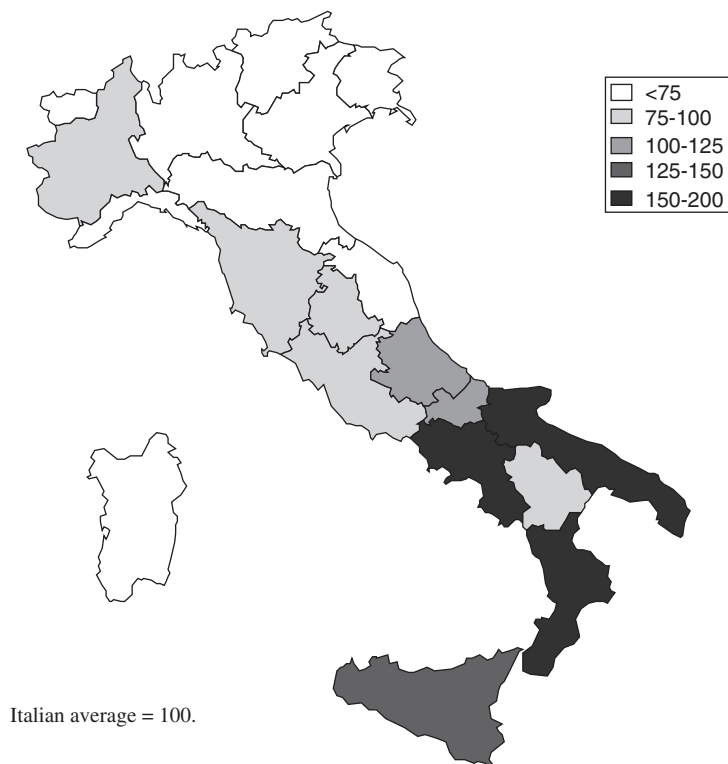


FIG. 2. Regional distribution of extortion per 10,000 inhabitants, 2004–07 Italian average = 100.

Source: Calculations from Istat data.

Given the clans' tight control of their territory, the fear of reprisal and, often, the economic sustainability of the extortion payments requested, the victims may fail to report the offence. In the areas particularly hard hit by the racket, the extortionist and his victim are tied into a sort of "forced marriage" that makes it difficult to identify the crime. This is why official statistics based on complaints notably underestimate the real extent of the extortion phenomenon. It can be hypothesised, however, that other criminal offences may also indicate extortion: for example, damage to commercial activities.<sup>9</sup> The intimidating acts committed by criminals to induce reluctant businessmen to pay the *pizzo* may cause little damage and therefore remain unreported, but in other cases, the intimidation may be far more serious and lead to attacks or arson. Data relative to arson attacks in the Italian regions shows that these are more numerous in the South, with Calabria, Apulia and Sicily hardest hit.<sup>10</sup>

<sup>9</sup>These aspects are examined, among others, by La Spina and Lo Forte, *I costi dell'illegalità*.

<sup>10</sup>Istat data; see Censis, *Il condizionamento delle mafie*, 24–5.

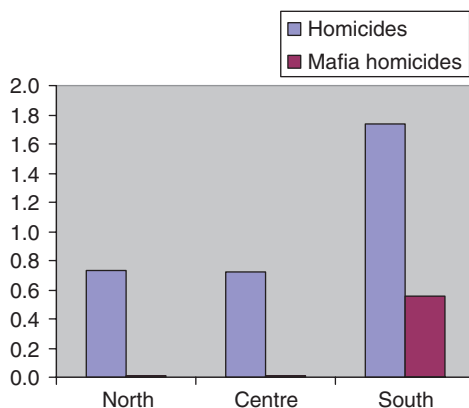


FIG. 3. Homicide rates in the three Italian macro-regions per 100,000 inhabitants, 2004–06  
 Source: Calculations on Istat data.

Clear regional differences can also be observed, however, for crimes that are not under-reported, such as homicides. Fig. 3, which illustrates the incidence of homicides (and those attributed to the mafia) per 100,000 inhabitants in the three Italian macro-regions, shows that both are considerably higher in the South than in the rest of the country.

The spread of extortion as practised by the mafia is also frequently underestimated in the inquiries carried out by research institutes by means of questionnaires. This occurs for a variety of reasons, the most important being the low percentage of responses from those selected or interviewed. For example, in 2007, the Italian Business Confederation (*Confcommercio*) conducted an enquiry distributing 60,000 questionnaires to companies in the various Italian regions, but only had a response rate of 6.3 percent (3,750 questionnaires).<sup>11</sup> The rate of response also showed significant regional differences: it was, in fact, higher in the centre-north than in the south, with a 9.5 percent response in Trentino, Veneto and Friuli, 9 percent in Lombardy and Emilia-Romagna, 3.3 percent in Calabria and little more than 2 percent in Sicily and Campania. According to the results of the enquiry, 15 percent of the Sicilian respondents and 12 percent of Calabrian respondents declared that they had received threats with the final objective of extortion. Such results are, therefore, far lower than the data provided by other research or judicial enquiries.

According to the estimates provided by the *Sos Impresa* Association of the Confederation of Commercial Activities (*Confesercenti*), between 160,000 and 180,000 businesspeople in Italy, most of whom live in the southern regions, are

<sup>11</sup>Confcommercio and GfK Eurisko, *La mappa della criminalità*. A similar rate of response was registered in another survey carried out by the Italian Association of Industrialists (*Confindustria*) and the Osservatorio sulla Camorra e l'illegalità in Campania (see C. Marasca, "Dossier impresa e crimine in Campania", *Corriere del Mezzogiorno*, 9 Nov. 2007, 12–13).

**Table 1. Pizzo paid in Palermo and Naples (Euro)**

Economic activity	Palermo	Naples
Market stall	1*	5–10*
Shop	200–500	100–200
Elegant shop or shop in city centre	750–1,000	500–1,000
Supermarket	5,000	3,000
Construction site	10,000	

\*Daily amounts. For others, monthly amounts.

Source: Confesercenti. *SOS Impresa*, various reports.

victims of the extortion racket.<sup>12</sup> The racket involves 70 percent of businesses in Sicily, 50 percent in Calabria, 40 percent in Campania and 30 percent in Apulia, for a total of over 120,000 businesses in the four regions. According to the same association, the phenomenon is particularly widespread in some areas and affects 80 percent of all businesses in Catania and Palermo, 70 percent of businesses in Reggio Calabria and 50 percent of those in the Naples, North Bari and Foggia areas. In total, extortion accounts for gains of 5.5 billion Euros.<sup>13</sup> Although such estimates must be considered very prudently because of the lack of a controllable methodology in collecting and processing the data, recent judicial enquiries have shown that mafia-organised extortion in Palermo and some areas of Sicily is door to door, while in Calabria it strikes not only small but also large companies (like those involved in public works such as the construction of the Salerno-Reggio Calabria highway<sup>14</sup>).

According to recent research conducted in Sicily by the Fondazione Chinnici using a reliable methodology, 58 percent of the businesses in the region pay “protection money” (maximum estimate). The sums requested are highly variable and range from a minimum of €32 a month to a maximum of approximately €27,000, depending on the size of the business; the average sum paid is €881.<sup>15</sup> Table 1 gives an idea of the amounts paid in Naples and Palermo for certain types of commercial and business activities. Extortion in Sicily alone generates an annual cost to the productive system of approximately one billion Euros, corresponding to 1.3 percent of Sicily’s GDP in the year 2006.

<sup>12</sup>Confesercenti, *SOS Impresa*, various reports.

<sup>13</sup>*Ibid.*

<sup>14</sup>According to an analysis carried out by ANAS (the company managing Italy’s roads and motorways), the companies involved in the construction of the 5th macro-section of the Salerno-Reggio Calabria motorway suffered 100 intimidating attacks in 1210 days (R. Galullo, “Sull’autostrada della malavita”, *Il Sole 24 Ore*, 7 February 2009, 12).

<sup>15</sup>La Spina, *I costi dell’illegalità*.

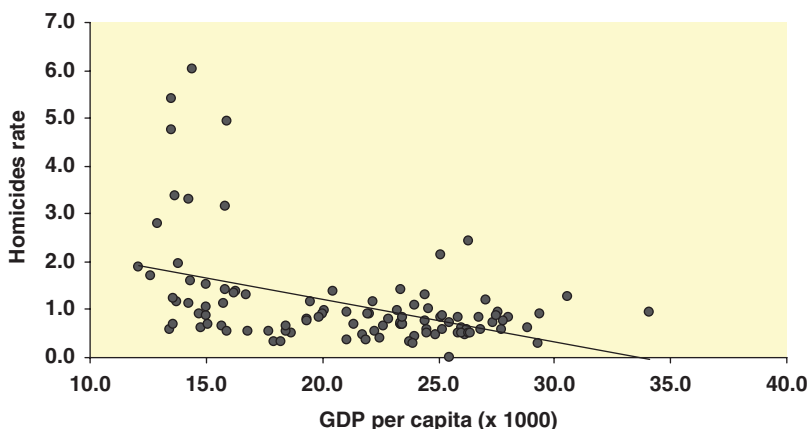


FIG. 4. Homicide rates and per capita GDP in the Italian provinces, 2003–05  
 GDP per capita ( $\times 1000$ ) in Euros.  
 Source: Elaborated from ISTAT data.

### Crime and economic development

If the costs of crime can, as seen, be notable, what is the relationship between crime and economic development? Is the presence of organised crime a cause of economic under-development or is it one of its effects? To provide an initial idea of the relationship between crime and level of development, Fig. 4 illustrates the correlation between per capita GDP and the homicide rate in 103 Italian provinces (each point represents a province). A negative relationship is evident: the provinces with lower per capita GDP, the southern ones, tend to have, on average, the highest homicide rates.<sup>16</sup>

It must be underlined, however, that a partial correlation like this, in itself, merely shows a simple statistical link between two variables, and says nothing about a possible causal relationship.<sup>17</sup> Consequently, a more rigorous approach is required to investigate the nexus between crime and development.

The effect of crime on long-term regional economic growth has been analysed by the economist Giovanni Peri.<sup>18</sup> His work aimed to investigate whether the under-development of the Mezzogiorno can really be attributed to social and cultural attitudes, such as the lack of a sense of civic community and citizens' involvement (so-called *social capital*), as hypothesised in Edward Banfield's and Robert

<sup>16</sup>The partial correlation between the variables is, in fact, negative, although not particularly strong for the presence of some *outliers*, such as the Calabrian provinces of Reggio Calabria and Crotona.

<sup>17</sup>Thus, in principle, it is not possible to exclude that the two occurrences are both influenced by a third variable, not included, that generates a misleading or spurious correlation.

<sup>18</sup>Peri, "Socio-Cultural Variables and Economic Success". See, furthermore, Scorcu and Cellini, "Economic Activity and Crime".



Putnam's influential studies,<sup>19</sup> or whether other factors such as organised crime weigh more heavily.

The results of the econometric estimates led Peri to the conclusion that there is little evidence to support the theory that social and cultural variables have influenced industrial and economic development, while the influence of crime, measured as high murder rates, is very strong. According to the study, because of the high crime rate some provinces in Sicily and Calabria might have experienced as much as 1.2 percentage points lower employment growth each year for forty years, because of their very high crime rates.

The recent contribution of the economists Paolo Buonanno, Daniel Montolio and Paolo Vanin fits into the strain of empirical research examining the relationship between social capital and the incidence of crime.<sup>20</sup> Social capital is measured by various indicators: associations, voluntary work, voters in referendums and blood donors per 100,000 inhabitants; the crime rate is calculated on the basis of available data on theft, robbery and auto-theft. The results obtained demonstrate that the levels of civic-mindedness and association (social capital) tend to associate with lower rates of crime against property. Nevertheless, while it presents notable points of interest, this work considers a number of offences (theft, robberies and car theft) that are not typically mafia type crimes. Therefore, it is hardly indicative of the real relationship that exists, in the Italian South, between the immaterial factors of development (one of which is social capital) and crime.

There are many channels through which crime can depress economic growth. One is the reduction of bank credit for legitimate firms. An article recently published by the Bank of Italy analyses the relationship between the terms of bank loans and crime rates, using a survey of over 300,000 bank-firm relationships.<sup>21</sup> The results are striking: where the crime rate is higher, borrowers pay higher interest rates and pledge more collateral than in low-crime areas; furthermore, the access to bank credit is negatively influenced by crime. Since less credit implies lower investment, the economic growth of those Italian regions lagging behind is negatively affected.

Moving on to a quantification of the impact of crime on development and employment, the little research extant in Italy is often lacking from a methodological point of view, or is based on not totally reliable data. One attempt, for example, was made in 2002 by the Banca Nazionale delle Comunicazioni (BNC) Foundation and Censis<sup>22</sup> by means of a research study on "safety and entrepreneurship in the Mezzogiorno".

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<sup>19</sup>The studies of these political scientists have deeply influenced the debate on the role of social and cultural variables in the historical lag of the Italian South. See Banfield, *Le basi morali*; Putnam, *Making Democracy Work*.

<sup>20</sup>Buonanno, Montolio and Vanin, "Does Social Capital Reduce Crime?", 145–70.

<sup>21</sup>Bonaccorsi di Patti, *Weak Institutions and Credit*.

<sup>22</sup>Fondazione BNC and Censis, *Impresa e criminalità nel Mezzogiorno*.

The survey, carried out using questionnaires distributed among a wide selection of southern-based companies, was aimed at learning entrepreneurs' perceptions regarding security conditions and the frequency of certain criminal offences. The questionnaire contained, in particular, a question aimed at quantifying the damage caused to the company by the presence of crime. On the basis of the replies obtained, using an inferential method, the surveyors proceeded to quantify the total costs of crime on the production system in southern Italy, in terms of both lost production and lost jobs.<sup>23</sup> The following estimates resulted: a loss of wealth equal to approximately 7.5 billion Euros in 2001; a loss of 180,561 jobs, equal to 5.6 percent of the total jobs available in the companies in the areas that participated in the survey. To give an idea of such costs, consider that the lost production corresponded to 2.7 percent of the GDP of southern Italy and 0.6 percent of Italy's GDP in 2001, while the loss of jobs, that is, jobs not generated, as a result of crime represented 2.8 percent of those in the South and 0.8 percent of all jobs nationally in that year. While the conclusions reached by the survey have been widely noted, its basic methodology has also been frequently criticised, in particular the fact that the estimates were deduced from subjective perceptions and, therefore, potentially subject to distortion.<sup>24</sup>

A major effect of crime is the reduction in labour productivity. Economists Ernesto Felli and Giovanni Tria have examined in what way criminal behaviour is sensitive to public spending (transfers) and the business cycle and have estimated the effects of organised crime (mafia) on productivity in the private sector.<sup>25</sup> The principal hypotheses of their work were that, in the presence of public transfers, criminal activity (aimed, among other things, at obtaining ever greater shares of public spending) tends to increase, and that the negative effect of crime on the rate of growth depends mainly on the low levels of productivity which, according to the authors, are "caused by the breakdown of market mechanisms and by the barriers that block new, competitive companies and the flow of foreign investment from entering".<sup>26</sup> To verify their hypotheses, the authors used data relative to the 20 Italian regions for the period 1960–96 and different methods of estimation. The results obtained show that the crime rate (approximated by the rate of homicide) increases with the growth of public transfers and is sensitive to the national business cycle. Furthermore, they show that labour productivity is depressed both by the crime rate and by the extent of non-market economic activities.

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<sup>23</sup>For a description, see Alleva and Arezzo, *Una stima dei danni*.

<sup>24</sup>For a critique of these results see, for example, La Spina, *I costi dell'illegalità*, who noted that survey-based quantifications of the costs of crime are often biased as a result of the methodology used to gather the data and the object of the surveys themselves. For obvious reasons, in fact, the interviewed entrepreneurs are in general reluctant to provide information on offences such as extortion or usury.

<sup>25</sup>Felli and Tria, "Produttività e crimine organizzato".

<sup>26</sup>*Ibid.*, 86.

In a series of articles, economists Mario Centorrino and Ferdinando Ofria examined the relationship between productivity and a series of variables related to the socio-economic environment (among which the presence of crime) in the Italian regions in 1998–99.<sup>27</sup> The authors observed how socio-economic variables (including crime) condition the performance of companies in all sectors; this influence appears to be greater in agriculture and construction in particular than in the industrial sector. In a later article, Centorrino and Ofria analysed the relationship between productivity growth and crime, using an equation in which the crime phenomenon is estimated as the ratio between mafia homicides and population.<sup>28</sup> Results show that the presence of mafia-type crime negatively influences the rate of growth of productivity in the southern regions, notably in construction and non-tradable production. In synthesis, the results obtained through this empirical research offer ample evidence to sustain the thesis that the presence of organised crime influences labour productivity.

### ***Deterrents to foreign investments***

The southern regions receive a very marginal share of foreign direct investment (FDI) inflows to Italy. For example, during the 2007–08 period, these regions received less than 1 percent of the national total.<sup>29</sup> Even the data on multinational enterprises shows that the Mezzogiorno – with its 21 million inhabitants – attracts few foreign investors. Among the over 7,100 firms with foreign participation operating in Italy in 2006, only 318 (4.5 percent of the total) had their headquarters in southern regions, creating only 3 percent of the total number of jobs generated by foreign enterprises located in Italy.<sup>30</sup>

FDI can represent an important factor for regional development. Several studies show, in fact, that FDI has a positive net effect in terms of job creation in the host economies; furthermore, the presence of foreign firms generates technological spillovers that increase total productivity and sustain GDP growth.<sup>31</sup> The attractiveness of a region for foreign investors depends on several economic, institutional and social factors. In Italy, for instance, the level of development, the labour costs, the efficiency of the bureaucratic system and the quality of human capital significantly influence the location of foreign investment.<sup>32</sup> The low competitiveness of the Mezzogiorno is, in large part, explained by these variables, even if some factors (such as red tape) are common throughout Italy. In the case of the South, however, the presence of crime can be considered an additional constraint, a sort of specific “competitive disadvantage” that discourages FDI. Conversely, however, the

<sup>27</sup>Centorrino and Ofria, *Il pedaggio dello sviluppo*.

<sup>28</sup>Centorrino and Ofria, “Criminalità organizzata e produttività”.

<sup>29</sup>Italian Exchange Office data.

<sup>30</sup>Italian Institute for Foreign Trade (ICE) – Politecnico di Milano, database reprint.

<sup>31</sup>For a review see, for instance, Copenhagen Economics, *Study on FDI and Regional Development*.

<sup>32</sup>Barba Navaretti et al., *Il Mezzogiorno e gli investimenti diretti esteri*.

southern regions have some factors that, at least potentially, could attract the location of foreign firms: lower labour costs than the national average, an available workforce, endowed industrial areas and financial incentives granted by regional, national and European programmes.

The affirmation that the presence of organised crime influences the capabilities of the regions of the Mezzogiorno to attract investment from outside the area, particularly from abroad, is widely upheld by scholars. Decades ago, the economist Paolo Sylos Labini, underlined how criminal organisations impose “cuts”, forcing activities to move elsewhere, and discouraging businessmen interested in investing in the South.<sup>33</sup> This problem has also been emphasised very clearly by the American economist, Mancur Olson, who states that southern Italy has, over time, accumulated a vast range of “extra-governmental institutions” that have corroded the economy, increasing the risks for business activities.<sup>34</sup> As sociologist Antonio La Spina notes: “Those who have a business in the South already have a tough time but, above all, those who could open a business in the South give up the idea and go elsewhere”.<sup>35</sup>

These statements have been confirmed by diverse surveys, aimed at examining the perceptions of businesspeople regarding the southern regions. A survey carried out by the North-East Foundation some years ago on entrepreneurs from the northeast of Italy interested in the process of internationalisation, showed how almost all those interviewed (92.6 percent) considered the presence of crime as the main obstacle to investing in the Italian South.<sup>36</sup> Another survey, carried out on behalf of the Italian Ministry of the Economy in 11 countries around the world, confirmed that entrepreneurs perceive the Mezzogiorno as lacking the necessary security conditions.<sup>37</sup> In other words, crime negatively affects the image of the South, limiting the attractiveness of the area, even though the crime levels in the various regions, and even more so in the provinces, vary notably. Aside from such surveys, it is an intuitive fact that the presence of crime constitutes a block to potential investors, confirmed both in the declarations of politicians and by the investigations carried out by magistrates.

Some recent studies using data on certain criminal offences have shown how crime negatively influences FDI in Italian regions. One study investigated the determinants of FDI in 103 Italian provinces, including the role of organised crime.<sup>38</sup> The incidence of mafia-type organised crime was measured by an index drawn from the number of cases of extortion, bomb attacks, arson and criminal

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<sup>33</sup>Sylos Labini, *L'evoluzione economica del Mezzogiorno*; Olson, *Einaudi notizie*.

<sup>34</sup>Olson, *Einaudi Notizie*.

<sup>35</sup>La Spina, *I costi dell'illegalità*, 18.

<sup>36</sup>Marini and Turato, *Nord-Est e Mezzogiorno*.

<sup>37</sup>Gpf and Ispo, *L'immagine del Mezzogiorno d'Italia in 11 Paesi del mondo*.

<sup>38</sup>Daniele and Marani, “Criminalità e investimenti esteri”; and Daniele, “Perché le imprese estere non investono al Sud?”.

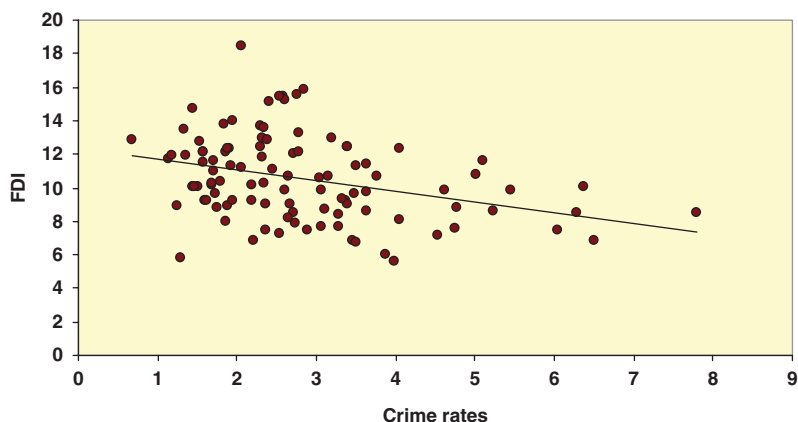


FIG. 5. FDI inflows and organised crime in the Italian provinces  
 Data for FDI inflows are averages for the period 2007–08 in log  
 Source: Calculations on Italian Exchange Office data for FDI and Istat data for the organised crime index.

association per 10,000 inhabitants. Fig. 5 illustrates the negative correlation between this index and FDI inflows in Italian provinces. Since a correlation does not necessarily imply causality between the variables, to estimate the effect of crime on FDI, other variables capable of influencing the location of foreign investment in each province had to be considered. To do this, the analysis was based on a regression model that estimated the effect of crime, taking into account the size of the economy, the level of development, the presence of firms, the number of patents, the relative infrastructural endowment and the financial incentives granted investors.

The results showed that the organised crime index is negative and significantly correlated to FDI inflows, even when the other control variables were included. These results support the thesis that the presence of mafia-type organised crime discourages potential investors. Nor can it be excluded that particularly high crime levels, which tend in themselves to discourage investment, are also perceived as signalling an unfavourable business climate, particularly by potential foreign investors, who generally have less information available. The analysis suggests, furthermore, that in the presence of an unfavourable business environment, policies for attracting investment tend to be ineffective. In fact, figures show that the main policy programme for attracting investments to the Italian South (so-called Location contracts) had scarce appeal, given that in the entire timespan in which this programme was implemented (2003–06), only seven foreign investors took advantage of it to carry out *greenfield* investment.<sup>39</sup>

<sup>39</sup>Barba Navaretti et al., *Il Mezzogiorno e gli investimenti diretti esteri*. Greenfield is an investment in a manufacturing plant, or other related physical structure, in an area where no previous facilities exist. It is used to distinguish the creation of a new firm from other forms of investment, such as merger or acquisition.

In synthesis, the attractiveness of Italy's southern regions for FDI is very low compared with other Italian and European areas. Even if the presence of organised crime is not the only reason for the poor competitiveness of the South, better security and legal conditions would improve its image and thus its attractiveness for foreign investors.

### Conclusive remarks

Economic analysis of criminal behaviour constitutes a relatively large branch of research. For example, economists have modelled economic behaviour and analysed how illegal markets work.<sup>40</sup> Recently they have proposed estimates of the direct and social costs of crime, offering important data for evaluating the effectiveness of policies in response to crime. This article, however, has pointed out that crime inflicts some costs that do not correspond to direct monetary payment. These costs are more like a sort of squandering that the community has to pay for in terms of lost investments, lost jobs and a lower rate of growth.

Research shows that, in Italy's case, the historically rooted presence of criminal organisations in the southern regions has represented a strong constraint on economic development. There are different channels through which organised crime hampers development: extortion, the creation of local monopolies based on the threat of violence and the conditioning of institutions. In addition to local firms, the effects of crime are also detrimental for foreign investment.

Data shows that the southern regions receive less than one percent of FDI inflows to Italy. This disappointing performance is primarily explained by different economic factors, including the geographic distance from large markets, a small local market and bureaucratic inefficiencies. Nevertheless, the presence of organised crime can be considered a further constraint or a sort of competitive disadvantage that contributes to creating a business environment unfavourable to the location of foreign investment. Improving conditions of safety and legality in the less developed area of the South would seem to be a fundamental prerequisite for increasing the region's attractiveness for foreign direct investment and, presumably, the effectiveness of regional development policies.

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<sup>40</sup>See, for example, the fundamental contribution by Becker, *Crime and Punishment*. The functioning of illegal markets – in particular, the drug market – has been widely examined, with particular reference to the United States.

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