Organized Crime and Foreign Direct Investment: The Italian Case

VITTORIO DANIELE

UGO MARANI

Organized Crime and Foreign Direct Investment: The Italian Case

Abstract

This paper examines the impact of organized crime on the regional distribution of foreign direct investment (FDI) inflows into Italy. The incidence of crime has been calculated considering the number of complaints for different crimes. The analysis shows how the correlation between organized crime is both negative and significant. This relationship appears strong even when a financial investment incentives indicator is included into the regressions. Furthermore, such a correlation between crime and FDI seems to be valid only for certain crimes, traditionally related to the presence of organized crime of the *Mafia* type. Although our analysis shows that organized crime is, in itself, a disincentive for investment, it also suggests that certain levels of crime can be perceived by foreign investors as a signal of an unfavorable business climate.

JEL Code: F23, R30, R38.

Keywords: FDI determinants, Italy, crime, regional attractiveness.

Vittorio Daniele
Department Dopes
University Magna Graecia of Catanzaro
Campus "S. Venuta" – Germaneto
88100 Catanzaro
Italy
v.daniele@unicz.it

Ugo Marani
Faculty of Economics
University Federico II of Naples
Monte S. Angelo
80125 Napoli
Italy
marani@unina.it

1. Introduction

The geographical distribution of foreign direct investment (FDI) inflows into Italy shows some striking regional differences. The eight less developed regions of the South — the so-called *Mezzogiorno* area — receive, in fact, a very modest share of FDI. For instance, in the period 2005-2007, these regions received less than one per cent of total inflows; in Campania, the Southern region with the best performance, FDI amounted to only 0.2 per cent of all those inflows into Italy.

The low degree of attractiveness of the Southern regions is also illustrated by the "geography" of multinational firms located in Italy. In 2006, the firms with foreign participation in these regions amounted to less than 5 per cent of the Italian total. For the sake of comparison, in Lombardy alone there were ten times as many firms with foreign capital as in the entire area of the Mezzogiorno.

Despite this performance, in Southern Italy there are several factors which, at least potentially, could attract foreign investors. First of all, this area represents a major share of the domestic market: its population is of almost 21 million people, that is 35 per cent of the national total. Secondly, in the *Mezzogiorno* there is a considerable skilled workforce, and the labor cost is lower than the Italian average. Furthermore, in many Southern regions there are extensive uncongested industrial areas able to offer business location benefits (IPI, 2005). Finally, firms that invest in the South — especially in the less developed regions — may benefit from a series of financial incentives provided by European and national programs.

However, against such potential benefits, Southern Italy has several comparative disadvantages that negatively affect its attractiveness (Basile, 2001). One of these disadvantages is the historically rooted presence of several criminal organizations of the Mafia type: *Camorra*, *Cosa nostra*, *'Ndrangheta*, *Sacra Corona Unita*[1]. The incidence of these 'Mafia' is particularly high in certain regions: notably Calabria, Campania, Sicily and, to a lesser extent, Apulia. From an economic point of view, crime may be considered an additional risk (or cost) for business activities (Krkoska and Robeck, 2006). Crime, especially if of the Mafia type, tends to damage business in various ways: racketeering; retailing market limitations; forcing firms to take on suppliers of raw materials or being pressurized to employ

---

[1] The term Mafia comprises different criminal organisation: camorra is the name of Campania based organised crime, *Cosa nostra* those of Sicilian, *'Ndrangheta* those of Calabria and *Sacra Corona Unita* of the Apulia.

workers; creating local monopolies and distortions to the markets (Gambetta, 1996; Centorrino *et al.* 1993; Arlacchi, 2007). All in all, the presence of crime can be considered as one aspect of a somewhat unfavorable business climate: consequently, it represents a disincentive for foreign and national investments.

Besides having been pointed out many times by scholars, economic operators and politicians, the deterrent effect of crime on foreign investment has been amply confirmed in surveys conducted among national and foreign investors (Marini and Turato, 2002; GPF-ISPO, 2005). In Italy, the detrimental effects of crime and regional economic development have been examined by sociologists and economists (Peri, 2004; La Spina, 2008; Centorrino and Ofria, 2008; Daniele, 2009). Quite surprisingly, yet, little attention has been paid to estimating the effects on foreign investment. By using data for different kinds of crime, this study analyses the geography of organized crime in Italy and estimates its impact on the distribution of FDI inflows at the provincial level. The results show how the correlation between organized crime and FDI inflows into the Italian provinces is both negative and significant. This correlation results as being robust even when an indicator for financial incentives for investments is included in the regressions.

In general, the conclusions reached in this study suggest that the quality of the "local business environment" influences the location of foreign companies and also diminishes the effectiveness of financial incentives for investments. Although our analysis shows that organized crime is, in itself, a disincentive for investment, it suggests that certain levels of crime can be perceived by foreign investors as a signal of an unfavorable socio-institutional system.

The remainder of the paper is as follows. Section 2 illustrates the regional distributions of FDI inflows in Italy and its determinants. Section 3 offers a brief review of the economic effects of crime. Section 4 describes the data and the results of the empirical analysis. Finally, section 5 contains some conclusive remarks.

2. The location of FDI in Italy

2.1. Regional distribution

In all countries, the locations of multinational firms show regional asymmetries. In Spain, for example, Madrid and Cataluña are the main destinations of FDI; in France, Greece and in the United Kingdom it is also

possible to find clear regional differences[2]. In Italy the degree of spatial concentration of FDI is very high. As shown by Table 1, that reports the share of FDI inflows in the twenty Italian regions, Lombardy has received the largest amount (69%), followed by Piedmont (13%) and Lazio (7%). The shares of the other regions are far less. Overall, the Centre-North area received almost all the FDI inflows in the country; consequently, the share of the Southern regions is residual, amounting to less than 1 per cent of the national total. Equally high regional differences are encountered if we consider the ratio of FDI to GDP. In the period 2000-2006, net FDI inflows on average represented about 1.6 per cent of GDP in the Northwest, 0.6 in the central regions and just 0.1 per cent in those of the South.

Table 1. FDI inflows in the Italian regions in percentage of Italy, 2005 and 2006

Regions	2005	2006	Regions	2005	2006
Abruzzo	0.1	0.1	Piedmont	15.5	11.4
Apulia	0.1	0.2	Molise	0.1	0.0
Basilicata	0.2	0.2	Sardinia	0.0	0.1
Calabria	0.0	0.0	Sicily	0.0	0.0
Campania	0.3	0.2	Tuscany	3.6	1.9
Emilia Romagna	2.5	3.7	Trentino A. A.	0.2	0.5
Friuli	0.1	0.1	Umbria	1.0	0.8
Lazio	6.2	7.8	Valle d'Aosta	0.0	0.0
Liguria	0.5	0.7	Veneto	4.3	4.2
Lombardy	69.7	68.2	Centre-North	99.2	99.3
Marche	0.1	0.0	Mezzogiorno	0.8	0.7

Data refer to FDI gross flows IDE and do not include trade credits and transactions in the banking sector. Source: Italian Exchange Office (UIC).

At the provincial level, the degree of concentration of FDI is even greater. Table 2 reports the first and last ten provinces in the ranking on the basis of FDI inflows in the period 2004-2006. Notably, the province of Milan alone absorbs over 66 per cent of total flows, while the top three are provinces with large urban areas. Moreover, the data show that nine of the last ten places are held by provinces in the Mezzogiorno area.

Table 2. Top and bottom provinces ranked for FDI inflows in the years 2004-06, in % of Italy

Rank	Provinces	FDI	Rank	Provinces	FDI

---

[2] For the French case, cfr. Mayer (2004); for Spain, Hermosilla and Ortega (2003); for Britain, Devereux *et al.* (2007); for Greece, Kokkinou and Psycharis (2004).

1	Milan	66.46	94	Foggia	0.001
2	Turin	9.25	95	Ragusa	0.001
3	Rome	6.33	96	Reggio Cal.	0.001
4	Florence	3.06	97	Gorizia	0.001
5	Verona	2.86	98	Agrigento	0.001
6	Bologna	2.63	99	Catanzaro	0.001
7	Cuneo	2.03	100	Caltanissetta	0.001
8	Terni	0.99	101	Enna	0.000
9	Alessandria	0.75	102	Vibo Valentia	0.000
10	Vicenza	0.56	103	Oristano	0.000

Source: Calculations on Italian Exchange Office data.

The presence of foreign firms in the Italian regions may be examined more in depth through data on the number of firms with foreign participation located in Italy (Tab. 3). Overall, among the over 7,100 firms with foreign participation operating in Italy in 2006, only 318 had their headquarters in Southern regions, creating only 3 per cent of the total number of jobs generated by foreign enterprises located in Italy. The case of Lombardy is striking: the region hosts half of the all Italian firms with foreign capital, and generates over 45 per cent of employment and sales of all such firms. As observed for FDI inflows, Lombardy is followed by Piedmont, Lazio and Emilia.

Table 3. Number, employees and sales of foreign-participated Italian firms

Years	Firms		Employees		Sales	
	Centre-North	South	Centre-North	South	Centre-North	South
2001	6,359	329	850,698	62,136	315,290	18,611
2004	6,739	347	867,294	60,071	346,353	18,031
2006	6,776	318	811,144	46,895	378,597	15,481

For the region where the firm is headquartered; data refer to January 1st in each of the years considered. *Source:* Elaborations of the Reprint data base, ICE - Milan Polytechnic.

Finally, Fig. 1 reports the number of greenfield investments in the two Italian macro-regions and in other European countries. Firstly, it easy to see how the attractiveness of Italy is relatively low in comparison with other European countries with analogous levels of development (Committeri, 2004). Secondly, figures show how the number of investment projects located in the South of Italy is very low, less than 10 per cent of the total. In addition, these investments concern, almost entirely, small-scale projects in low-skill sectors, such as tourism or retail trade.

Figure 1. Number of greenfield investments (2000-2007)
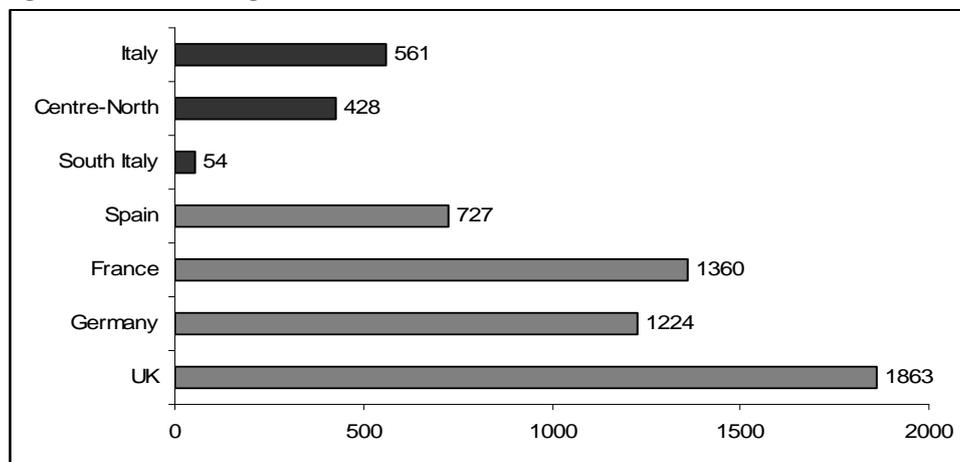
Note: Number of greenfield investments in the period 2000-2007. Source: OCO Monitor

In synthesis, these data confirm how the geography of foreign investment in Italy is characterized by profound regional differences and how the South is, overall, completely marginal with respect to the dynamics of the passive internationalization of Italian firms.

2. 2. Determinants of FDI inflows

The location choices of multinational firms are influenced by several factors. At the national level, empirical studies show how a large share of FDI involves countries with large market dimensions and geographical proximity; other factors, such as common borders and a common language, tend also to influence the investment flows (Barba Navaretti and Venables, 2004). Studies referring to the European Union show how the location of foreign firms is guided mainly by the firms' specific characteristics and, to a lesser extent, by observable national or regional factors. Broadly speaking, the determinants of FDI location can be classified in four groups: expected market demand, factor costs, the presence of agglomeration economies, and public policies capable of influencing the firms' activities (Devereux and Griffith, 2003; Crozet et al., 2004; Pelegrin and Bolancé, 2008).

At the sub-national level, the location decisions of foreign investors are influenced by several factors and regional-specific factors (Artige and Nicolini, 2005; Alegría, 2006; Devereux et al., 2007; Basile et al., 2009). For example, a study on the location factors conducted by the European Commission (2006), on a sample of approximately 100,000 foreign companies, showed how, in the European Union context, FDI tend to locate in regions with:

- a large presence of previous foreign investors;
- good infrastructure and accessibility;
- a highly educated workforce and a high level of R&D expenditure;
- the presence of agglomeration economies, determined by a large presence of competitors, clients and suppliers within the firm's industry.

Studies on Italy suggest how the relative level of development, the labor costs, the efficiency of the bureaucratic system and the quality of human capital significantly influence the regional location choices of foreign firms. The low competitiveness of the South is, in large part, explained by these variables, even if some factors (such as red tape) are common throughout Italy (Barba-Navaretti et al. 2009).

Foreign investments can represent a propulsive factor for regional development. They contribute towards raising employment and income levels, to transfer technologies and generate spill-over that produces positive effects on sector productivity (Konings, 2004; Devereux et al., 2007). For these reasons, many countries — including Italy — offer incentives or subsidies to foreign companies that invest in their less developed areas.

Empirical studies offer mixed evidence on the effects of financial incentives in attracting FDI. For example, a study of the Irish case shows that regional policies, despite promoting foreign business location in disadvantaged areas of the country, have acted almost "selectively" on firms with a low technological content (Barrios *et al.* 2003). In Italy, as in France, Spain, or the UK, research shows that financial incentives for investments (e.g. grants or easy-term loans), tax relief or EU structural policies do not have a significant effect in attracting foreign investment in underdeveloped regions (Mayer, 2004; Devereux *et al.* 2007). On the contrary, a study conducted by Basile et al. (2009), using data for 5,509 foreign subsidiaries established in 50 European regions, found that Structural and Cohesion funds allocated by the EU to laggard regions have contributed to attracting multinationals.

A recent strand of literature has been devoted to the investigation of how FDI is influenced by cross-country differences in the political, institutional and legal systems. There are several reasons for which the quality of institutions may be important for FDI. The first reason is that — according to the studies on long-term growth determinants — efficient institutions improve productivity prospects and, consequently, this attracts investors. The second reason is that a poor institutional environment can bring about additional costs for firms: this can be the case with crime and

corruption (Broadman and Recanatini, 2000; Wei, 2000). A further reason is that – due to high sunk costs – FDI is highly exposed to uncertainty, including that stemming from poor government efficiency, graft, or the weak enforcement of property rights and of the legal system (Bénassy-Quéré et al., 2005).

Studies generally confirm that a "good" institutional environment is an important determinant of FDI inflows. This institutional environment includes, for instance, the ease of creating companies, government effectiveness, the security of property rights, the efficiency of the judicial systems and a lack of corruption (Globerman and Shapiro, 2002; Habib and Zurawicki, 2001). The World Bank (2001) has emphasized how the attraction of investments is greater in areas where the public institutions are perceived as being more credible by the community of investors. This means that they are considered capable, and that they intend to put into practice the policies undertaken, as well as having administrative and judicial approaches consistent and foreseeable, together with acceptable levels of crime and corruption. Some case-studies, such as those for Central American countries (United Nations, 2007) and Russia (Broadman and Recanatini, 2001), further suggest that violence and crime deter foreign investors.

From the international literature it emerges quite clearly, therefore, how the quality of the institutional system and the business climate influence decisions regarding the location of foreign firms. Such an effect could also be relevant at a regional level when, as in the Italian case, notable differences exist in the quality of the local socio-institutional environments.

3. Crime and the economy

3.1 The economic effects of crime

Crime imposes significant costs on society. There are those relative to protection and prevention, those sustained by the victims as a consequence of crime and those for the response to crime. They correspond to monetary payments that fall directly both on private individuals and on 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 (Brand and Price, 2000; Czabanski, 2008).

Not always, however, does the social cost of crime correspond to a monetary disbursement. Since a high incidence of crime is detrimental to

legal economic activities, it implies a loss in employment and investments, affecting economic development negatively (Peri, 2004; Bonaccorsi di Patti, 2009). For instance, by analyzing the relationship between crime and the enterprise sector in a range of countries with different levels of development, Krkoska and Robeck (2006) have indicated how organized crime has a deterrent effect on business, particularly enterprises entry and expansion, while the perception of crime results as a serious obstacle to the willingness of foreign investors to enter a country.

In the Italian case, the effects of organized crime on the economic outcomes have been widely examined from the sociological and historical points of view, but far less from the economic viewpoint. Often, in fact, economists have focused more on the determinants of criminality than on the effects that it produces on the economy (Marselli and Vannini, 2003; Buonanno, 2006).

Some recent studies have, however, shown how organized crime can have relevant effects on both economic growth and on the quality of the local institutional systems. For instance, Centorrino and Ofria (2008) have proved the negative effect of crime on the rate of growth of labors productivity, in particular in the Southern regions. Peri (2004), examining the economic performance of the Italian provinces over the period 1951-1993, found a strong and negative correlation between the incidence of organized crime (measured as a high murder rate) and economic development. Recently, Bonaccorsi di Patti (2009) has analyzed the relationship between the terms of bank loans and crime rates, using a survey of over 300,000 bank-firm relationships. 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.

There are many ways in which crime conditions the legal economy. One of the most evident is the racket of extortion. The activity of extortion is typical of the criminal organizations of the Mafia type. It has two main aims: to ensure a sufficiently steady income, generally directed at financing other illegal activities, and to permit the criminal clans to exercise a widespread control over the territory. In a certain sense extortion — "pizzo" in the slang of the *mafiosi* — is a crime typical of the Italian Mafia, because it is connected with a traditional activity of Mafia families: the selling of *protection* in a certain territory (Catanzaro, 1991). As pointed out by Gambetta (1996), 'providing' protection to legitimate industries has been, for a long time, the *distinctive* activity of the Sicilian Mafia.

Criminal organizations of the Mafia type also practice other forms of control over the local economy. Often, in fact, the clans force legal firms to purchase raw materials from specific suppliers, to hire personnel that are linked to the same organizations or impose limitations to sales markets. The activity of extortion and the control over a part of the legal economy has been well documented in judiciary inquests and the subject of much research (La Spina and Lo Forte, 2007; CPI, 2008)[3]. Numerous inquests testify how organized crime manages to condition the activities even of large companies involved in some programs of public works regarding the Southern regions (Confesercenti, 2007).

In general, crime increases the risks for (and the costs of) investment, and therefore has a depressive effect on the economy. In particular, crime discourages investment by raising the economic risks to companies, deriving from possible attacks, the destruction of property and intimidation. Insurance against such risks implies financial expense, both in the case of acquiescence (the payment of bribes, being obliged to purchase raw materials from firms with criminal connections), and in the case of self-defense (private police and security measures).

A further depressive effect on the economy derives from the operations of the same "entrepreneurs of crime". Through the use of violence or corruption to impose monopolies, the "criminal 'firms" condition the functioning of the markets and local institutions, distorting the allocation of resources and capturing a part of public expenditure, including European funds for regional development (CPI, 2008).The result is that the functional capabilities of local market and institutional systems are compromised negatively affecting the development of the economy (Centorrino and Signorino, 1993; Zamagni, 1993).

The presence of organized crime imposes notable economic (and social) costs in many areas of Southern Italy. One such cost, rarely considered, derives from the fact that the criminal presence tends to discourage both domestic and foreign investment, as some surveys confirm.

One such survey, conducted by Marini and Turato (2002) on a panel of businessmen from the North-East of Italy involved in the process of internationalization, showed how almost all of those interviewed (93%) believed the presence of criminality to be the principal block to investment

---

[3] According to the data contained within the Annual Report of the Parliamentary Commission of Inquest on criminal organisations (2008), in the area of the judicial district of Catanzaro, in Calabria, companies which resist the pressures from organised crime are, practically, non-existent; furthermore, the report carries the denouncements made by the representative of a large Tour Operator, Parmatour, who declared that tourist resort villages in Calabria were systematically subject to extortion.

in the *Mezzogiorno* area. Another survey, conducted in 11 Countries on behalf of the Italian Ministry of the Economy, has indicated how, in the perception of businessmen, the *Mezzogiorno* appears an area lacking conditions of security (Gpf-Ispo, 2005)[4]. The deterrent effect of crime for foreign investors with regard to the South of Italy has been highlighted by economists for years. For example, Sylos Labini (1985), has observed how the presence of organized crime in the South forces companies to transfer elsewhere, discouraging those who intend to invest. Olson (1984) has underlined how, as a result of organized crime, Southern Italy has accumulated, over a period of time, a vast range of extra-governmental institutions that have eroded the economic space, increasing the risks for investment. For this reason — Olson argues — whoever intends to start a new business in such an environment, will confront a series of risks that could be avoided by starting the business in a less "risky" area.

Although wealthy with implications, the problems raised by Paolo Sylos-Labini and Mancur Olson over twenty years ago have received little attention in economic literature. Only recently, in fact, has some research on the determinants of FDI considered the crime rate among the explicative variables included in the regressions, showing how, in Italy, high crime rates tend to be negatively correlated with the regional attractiveness for foreign investors (Basile, 2001; Daniele, 2005).

In respect to these studies our analysis differs both for method and for content. It uses, in fact, panel data for a disaggregated level of territory (103 provinces) and different estimate procedures. Furthermore, it considers different measures of criminality, paying particular attention to that of the Mafia type. As far as we are aware, our research constitutes the first attempt explicitly aimed at estimating the impact of crime on FDI in the case of Italy.

3.2. Measuring organized crime

The Italian Penal Code defines organized crime, making a clear distinction between "criminal association" (art. 416) and "Mafia type

---

[4] The issue of security and its importance for internal and external investments in the *Mezzogiorno* has long been part of the political and economic debate in Italy. Recently, a series of events has made this issue one of the most urgent for development in southern Italy. The Federation of Anti-racket and Anti-usury Associations (FAI) has proposed the establishment of a "security tutor" for foreign firms interested in investing in the *Mezzogiorno* (FAI, *Antiracket tutoring, Experimental three-year project*, Naples, 12 December 2007). One of the reasons behind the above project was the declaration made by the President of the Italian Council of Ministers at the Anti-Mafia summit, on November 17th 2006, according to which Organised crime represents a significant deterrent for foreign firms interested in investing in southern Italian regions.

association" (art. 416 bis), defining the latter as follows: "the association is of the Mafia type when its components use intimidation, subjection and, consequentially, silence (*omertà*), to commit crimes in order to directly or indirectly acquire the management or the control of businesses, concessions, authorizations, public contracts and public services, to obtain either unjust profits or advantages for themselves or others...". Despite this clear definition, the measurement of the actual extent of the criminal organizations, in particular the Mafia, is very difficult: crime networks are, in fact, in themselves a complex and elusive phenomenon (Lampe, 2004, Paoli, 2004).

In this study, in order to estimate the incidence of criminal organizations we refer to official data relative to different crimes that are *symptomatic* of the presence of the Mafia. Even if is not always possible to disentangle crimes committed by the Mafia from others committed by *ordinary* criminals, some offences are not typical of organized crime: for example, theft, fraud and sexual violence are not, in general, committed by the Mafia. On the basis of studies of the subject (La Spina and Lo Forte, 2006) we have therefore constructed an index of organized crime based only on certain crimes: extortion, bomb attacks, arson and criminal association.

Extortion represents a crime typical of the Mafia organizations. As judiciary inquests testify, all Mafia families exercise their power over a territory through the racket of extortion. However, official data notably under-report the number of cases of extortion committed, particularly in the Southern regions. Whenever extortion is imposed by the *mafiosi*, only a small fraction of those victimized, in fact, denounce the crime. Estimates and inquiries suggest that the spread of the phenomenon is, in fact, much greater than that indicated by official data. According to some estimates, the 'racket of kick-backs' would affect 70 per cent of Sicilian businessmen, 50 per cent of those in Calabria, 40 per cent of those in Campania, and 30 per cent of those in Apulia, for a total of over 120,000 businessmen in these four regions (Confesercenti, 2007). Even if these estimates should be considered prudently, in some regions the cost of extortion could be notable. In the case of Sicily, extortion has been estimated as representing a cost equal to 1.3 per cent of the regional GDP (Asmundo and Lisciandra, 2008).

Since the number of complaints significantly under-report the effective extent of the extortion racket, our analysis considers other crimes which are symptomatic indicators of the activities of organized crime. These are bomb attacks and arson, which are carried out to threaten and intimidate the economic operators or politicians and which, because of their characteristics, cannot be concealed by the victims, as often happens, however, in the case of extortion. In particular, bomb attacks and arson are

often used to force businessmen reluctant to pay extortion. Finally, we considered the crime of criminal association, as covered by the articles 416 and 416-bis of the Italian Penal Code. This crime is measured by the number of people denounced to the Judicial Authorities.

In summary, the incidence of organized crime is given by the sum of these four crimes (extortion, bomb attacks, arson, criminal association) per 10,000 inhabitants. In the period 2001-2005 these crimes represented approximately one per cent of the cumulate total of crimes denounced in Italy.

Figure 2. Crime rates per 10,000 inhabitants, 2000-05
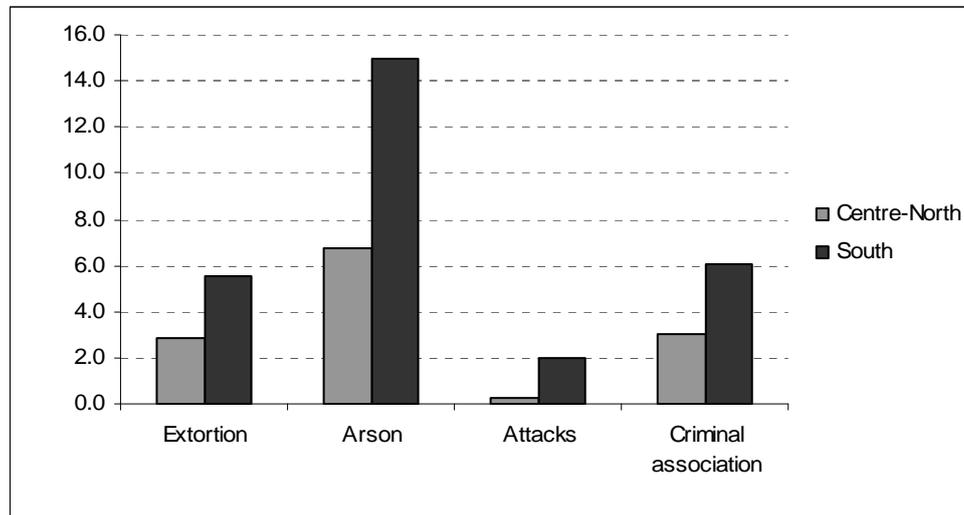
Data are referred to crimes denounced to Judicial Authorities. Cumulative data for the period 2000-2005. Source: Calculations on Istat data.

Fig.2 illustrates the crime rates. It can be seen how in the South the number of these crimes for every 10,000 inhabitants is far higher in respect to the rest of the country. Significant differences also clearly exist in the incidence of crime within the Mezzogiorno area. The crime figures are, in fact, extremely high in Calabria, Campania, Sicily and Apulia, or rather in those regions where the Mafia organizations, *Cosa nostra*, *'Ndrangheta*, *Camorra* and the *Sacra Corona Unita*, are historically rooted (Paoli, 2004).

Figure 3. Organized crime index, 2001-2005. Cumulative values per 10,000 inhabitants (Italy = 100)
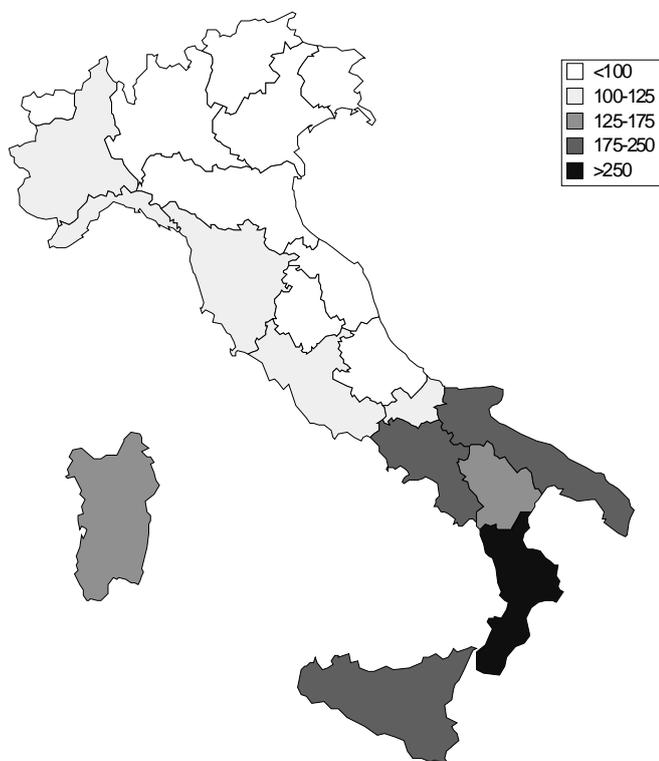
Source: Elaborated from ISTAT data, "Territorial information system on justice".

The "geography of crime", resultant from the index of organized crime as previously calculated, is illustrated in Fig. 3. Besides making clear the existence of significant differences between the North and South, the criminal geography seems to reproduce fairly faithfully the "map" of the Mafia families that emerges from judicial enquiries, and from reports compiled by the Institutions that deal with criminal phenomena (CPI, 2008). On the basis of this index, in the following paragraph we shall examine the impact of crime on FDI, seeking to verify whether, as the entrepreneurs interviewed in the surveys and numerous economic analysts and politicians maintain, crime is an effective block to potential foreign investors.

4. The empirical analysis

4.1. Data description

To examine the effect of organized crime on FDI inflows, we use data for 103 Italian provinces for the period 2002-2006, estimating different specifications of the Eq. 1:

$$FDI_{i,t} = \alpha + \beta_1 X_{i,t-1} + \beta_2 Crime_{i,t-1} + w_{it} \quad [1]$$

where i represents province, t time and $w_{i,t} = e_i + u_{i,t}$ is the error term. The dependent variable is the log of FDI inflow in the provinces, $X_{i,t-1}$ is a set of lagged control variables, while *Crime* is a measure of the incidence of crime.

The data on FDI inflow into the Italian provinces is gathered by UIC (the Italian Exchange Office), in order to compile the balance of payments. In conformity with international definitions, the FDI establish a long-term interest between a company headquartered abroad and one headquartered in Italy[5]. Because of the way in which they are collected, the data on FDI present some limitations, the most important of which is the fact that when investment flows transit via one or more intermediaries, the methods of reception (immediate beneficiary) do not permit control over the final geographical destination (Mariotti and Mutinelli, 2009). For this reason, the comparison between data on flows and those relative to the number of multi-national companies should be made with great care. Notwithstanding the limitations, the regional distribution of foreign firms that results from data on FDI, and data based on the number of plants, present many similarities; furthermore, empirical research on FDI determinants, conducted using the two data-sources, generally leads to similar conclusions. The FDI data have the advantage of provincial disaggregation and of a wide temporal coverage, permitting comparison to analogous data furnished by international institutions. Furthermore, these data are used both in empirical analyses on the determinants of FDI (Bronzini, 2004) and in descriptive research to quantify Italy's attractiveness to investors.

---

[5] According to the official definitions, a direct investment enterprise is an incorporated enterprise in which a foreign investor owns 10 per cent or more of the ordinary shares or voting power for an incorporated enterprise, or an unincorporated enterprise in which a foreign investor has equivalent ownership (IMF, OECD, 2000).

The incidence of organized crime is measured by the index described in the previous section, calculated as the sum of extortions, bomb attacks, arson and criminal association per 10,000 inhabitants. Other kinds of crimes have been considered as control variables: the number of crimes against property (with the exception of that included in the "organized crime index"), and thefts and robberies, per 10,000 inhabitants. All data on crime is collected by the Italian National Institute of Statistics (Istat) in the *Informative System on Italian Justice*.

On the basis of studies on FDI determinants, the control variables included in the regression are related both to the dimension and to the economic structure of the provinces. Market size, one of the main determinants of FDI, is proxied by the log of the resident population (*Population*) in each province, and by the share of provincial GDP of that of the region (*Size*). Considering the profound regional development imbalances that characterize Italy, the GDP per capita (in log) is included among the regressors. We also included a measure of the degree of openness of the provincial economy, given by the share of exports on GDP (*Export*), and a proxy of R&D activities, given by the number of patents presented to the European Patent Office (*Patents*). Furthermore, some variables related to the economic and productive structure have also been considered. These were the share of medium and large firms (with more than 50 employees) of the total number of firms (*Big firms*), and the number of firms in non-agricultural sectors per 1,000 people (*Firms*). Since the location of companies also tends to be influenced by an area's accessibility, we considered an index of total infrastructural endowment (*Infrastructure*). We then inserted, among the regressors, a proxy of the financial incentives to companies conceded under the Law no.488/92 (*Incentives*) which, in the period under examination, was the principal instrument of incentives for investment in Italy. This variable was considered in order to evaluate whether financial incentives and subsidies, conceded particularly to companies investing in Southern Italy, also influenced the location of foreign companies in areas where disincentives related to the social and institutional context exist. Table 1 in the appendix describes the data and their sources.

4.2. Estimation results

To choose the most appropriate estimator, we first tested for the presence of heteroskedasticity, running a basic specification of Eq. 1 with GDP per capita, population and crime index as control variables. The standard assumption of homoskedasticity disturbances can, in fact, be too restrictive when, as in this case, the cross-sectional units present different

sizes and, consequently, different variations (Baltagi, 2008). Table 4 reports the results of the diagnostic for panel data — *F* statistic, Breusch-Pagan's test and Hausman's test — that suggest that the fixed effect model is not adequate for the nature of the data. Based on this, in our analysis we used a group-wise weighted least square (WLS) estimator for panel data, a specific case of Feasible GLS estimators. The FGLS estimator is consistent under the basic random effects assumptions, consequently it is generally used when dealing with simple forms of auto-correlation or group-wise heteroskedasticity (Wooldridge, 2002: 257-264) and appears appropriate to our data.

Table 4. Diagnostic for the basic model

Test	Results
White	$LM = 40.48$ - p-value = $P (chi^2 (9) > 40.48) = 0.000$
Wald *	chi^2 103 8049.87 -p-value = 0
Joint significance *F*	$F (102.4) = 4.40$ - p-value 0.000
Breusch-Pagan**	$LM = 160.7$; p-value = prob. $(chi^2 (1) > 160.7) = 0.000$
Hausman test***	$H = 5.34$ p-value = prob. $(chi^2 (3) > 5.34) = 0.14$

FDI is regressed on GDP per capita, population and organized crime index. *Based on FGLS residuals; ** a low p-value counts against the null hypothesis that the pooled OLS model is adequate, in favor of the fixed effect alternative; ***a low p-value counts against the null hypothesis that the random effects model is consistent, in favor of the fixed effects model.

Table 5 reports the results of estimations. The model has a high explicative power. The results confirm how the provincial distribution of FDI inflows is primarily influenced by the level of development and by the dimension of the local market, as measured by resident population. Nevertheless, the number of firms, the proxy of R&D activities (*patents*) and the share of large firms result among the determinants of FDI. In all specifications the organized crime index is significant, and negatively correlated with FDI. Furthermore, it is possible to observe how financial incentives to investment do not seem to influence the distribution of FDI, probably because such incentives are granted in greater measure to those firms that invest in the less developed areas of the country, and therefore this variable also tends to reflect some regional characteristics. To analyze the effects of crime more in depth, we have considered other specifications that included the incidence of theft and robberies and the rate of crimes against property (*Prop. crime*) as control variables. Tab 6 reports the results of estimations. There is a negative but not significant correlation between these crimes and FDI, while the other explanatory variables maintain their significance and coefficient signs. This is not a surprising result: in fact, research shows that the incidence of crime (excluding *Mafia* type) is

generally higher in those areas with greater economic activity (Cracolici and Uberti, 2009). In our analysis this suggests that not all crimes, only some linked to the presence of a Mafia type organization, tend to discourage potential investors.

Table 5. The effect of organized crime and FDI inflows

	[1]	[2]	[3]	[4]	[5]	[6]
const	-72.37**	-62.00**	-61.71**	-61.65**	-62.75**	-61.54**
	(-35.74)	(-22.18)	(-19.67)	(-19.57)	(-19.26)	(-17.88)
Organized crime	-0.039**	-0.046**	-0.046**	-0.047**	-0.047**	-0.042**
	(-2.39)	(-2.71)	(-2.69)	(-2.69)	(-2.75)	(-2.41)
GDP pc	5.831**	4.918**	4.901**	4.902**	5.029**	4.954**
	(29.87)	(19.12)	(18.20)	(18.17)	(17.56)	(15.38)
Population	1.952**	1.757**	1.745**	1.741**	1.757**	1.706**
	(33.97)	(24.55)	(18.94)	(18.81)	(18.86)	(16.67)
Big Firms		0.463*	0.4845*	0.457	0.359	0.552
		(1.95)	(1.95)	(1.32)	(1.01)	(1.52)
Firms		0.0082**	0.0082**	0.0081**	0.0064**	0.0068**
		(3.08)	(3.07)	(3.00)	(2.13)	(2.26)
Patents		0.0029**	0.0029**	0.0029**	0.0030**	0.0031**
		(4.85)	(4.80)	(4.76)	(4.89)	(4.85)
Size			0.0006	0.0008	0.0003	0.0011
			(0.21)	(0.26)	(0.11)	(0.34)
Export				0.052	0.053	-0.102
				(0.11)	(0.11)	(-0.22)
Infrastr.					-0.001	-0.001
					(-1.29)	(-1.09)
Incentives						0.0001
						(0.103)
n	515	515	515	515	515	492
R^2 Adj.	0.86	0.87	0.87	0.87	0.87	0.88
lnL	-728.3	-724.6	-724.3	-724.3	-723.8	-690.5

Method: Group-wise WLS. T-statistics in parentheses; * indicates significance at the 10 percent level; ** indicates significance at the 5 percent level

Table 6. Crimes and FDI inflows

	[1]	[2]	[3]
const	-67.67**	-66.50**	-64.88**
	(-24.37)	(-24.81)	(-22.66)
GDP pc	5.369**	5.189**	5.033**

	(19.77)	(19.29)	(17.68)
Population	1.856**	1.891**	1.856**
	(24.82)	(20.91)	(24.42)
Big Firms	0.4386*	0.5667**	0.7801**
	(1.72)	(2.36)	(2.86)
Firms	0.0089**	0.0088**	0.0115**
	(3.09)	(3.04)	(3.65)
Patents	0.0026**	0.0024**	0.0023**
	(4.50)	(4.02)	(3.73)
Infrastr.	-0.0011	-0.0010	-0.0011
	(-1.06)	(-0.97)	(-0.99)
Theft	-0.0007		
	(-1.57)		
Robberies		-0.0091	
		(-1.23)	
Prop. crime			-0.0002
			(-0.70)
n	515	515	442
R^2 Adj.	0.87	0.87	0.87
lnL	-725.5	-726.8	-622.3

Method: Group-wise WLS. T-statistics in parentheses; * indicates significance at the 10 percent level; ** indicates significance at the 5 percent level

5. Conclusive remarks

Organized crime affects the legal economy in various ways: through extortion, direct or indirect control of business or, simply, increasing the risks and the costs of business. This paper studies the effects of organized crime on foreign investment, focusing on the case of Italy. This case is interesting for diverse reasons. Firstly, in Italy there is a historical presence of organized crime of the Mafia type, rooted particularly in the Southern regions. Secondly, Italy is characterized by profound regional disparities, and the presence of the Mafia is unanimously considered one of the main constraints to economic development in the less developed areas. Finally, the South of Italy receives a very low share of FDI inflows.

Our analysis shows how, *coeteris paribus*, a higher presence of crime, especially of the Mafia type, significantly reduces foreign investment inflows. Such a correlation is significant, even when the regressions include a *proxy* of the financial incentives granted to firms that invest in the less-developed areas. This result suggests that the presence of crime, a strong disincentive related to the socioeconomic environment, tends to reduce the

effectiveness of development policies. Our analysis does not indicate the presence of crime as the main or the sole reason for the low attractiveness of the Southern regions. FDI inflows are, in fact, influenced by different economic and institutional determinants. The presence of the Mafia can be, however, considered a specific "comparative disadvantage" of the less developed regions.

Our results are consistent with some surveys that contain the opinions of potential foreign investors about opportunities for investing in Southern Italy. Said surveys indicate, in fact, how the presence of organized crime is perceived by businessmen as a powerful block to investments in the Mezzogiorno. It is possible to observe how, in some areas, crime is only one aspect – certainly the most evident and dramatic – of a social and institutional context characterized by other forms of illegality that include corruption and, even more widespread, the violation of regulations necessary for the good functioning of the market (La Spina and Lo Forte, 2006).

Our analysis does not exclude that a high incidence of crime, other than discouraging investment, can also be perceived as a signal of a socio-institutional system unfavorable for business activities. This "signal effect" can be particularly important to potential foreign investors, who are generally less informed in respect to national investors. The magnitude of the effect of crime on firms' location decisions is, probably, amplified by investors' perceptions about the business climate quality in regions with a comparatively higher incidence of crime.

Although our analysis refers specifically to Italy, it is related to the international literature that indicates how institutional quality matters for firms' location decisions, and consequently for economic performances (Bénassy-Quéré et al., 2005). This paper is also related to the literature on the social costs of crime, in particular with those works that analyze the effects of crime on the legal economy and the enterprise sectors (Krkoska and Robeck, 2006, Bonaccorsi di Patti, 2009).

Policy implications are consequential. In the case of Italy, better security conditions (and the improvement of local socio-economic contexts) would increase regional attractiveness to FDI and, probably, the effectiveness of those policies aimed at promoting regional development.

Appendix

Table 1. Description of variables and sources

Variables	Description	Sources
FDI	Average FDI inflow in the provinces in the period 2004-06, in log. The data refers to the investment flows and does not include commercial credits and banking sector transactions.	Italian Exchange Office (UIC)
Population	Resident population in each Italian province, in log. Proxy of the size of the local market.	Elaborated from ISTAT Census data.
GDPpc	GDP per capita, in log. Proxy of the level of development.	Elaborated from ISTAT data.
Size	Provincial GDP on the GDP of Italy. Proxy of the size of the local market.	Elaborated from ISTAT data.
Incentives	Variable of proxy of the financial incentives granted to firms, given to the investment projects granted under the Law 488/92. Data refers to the projects for creating new production plants in the industrial sector (excluding "special industry" calls for proposals)	Ministry for Economic Development – Ipi-Print databank
Firms	Number of firms in non-agricultural sectors, per 1,000 inhabitants	Elaborated from ISTAT data.
Export	Total export on GDP	Elaborated from ISTAT data.
Patents	Number of European patents presented to the European Patent Office (EPO)	European Patent Office - Unioncamere
Bigfirm	Share of firms with more than 50 employees out of the total number of firms	Elaborated from ISTAT data.
Infrastructures	Synthetic index of infrastructure endowment (excluding ports) in percentage terms compared nationwide.	G. Tagliacarne Institute
Extortion	The number of crimes of extortion denounced per 10,000 inhabitants.	Elaborated from Istat data, "Territorial Informative System on Justice" (online databank).
Association	The number of crimes of criminal association denounced, including 'mafia' association, per 10,000 inhabitants.	Idem
Attacks	Number of (bomb) attacks, per 10,000 inhabitants.	Idem

Arson	Number of cases of arson, per 10,000 inhabitants.	Idem
Theft	Number of thefts, per 10,000 inhabitants	Idem
Robberies	Number of robberies, per 10,000 inhabitants	
Organized crime	Sum of extortion, attacks arson, association (as above defined) per 10,000 inhabitants.	Idem
Property crime	Total number of crime against property (with the exception of that included in the "organized crime index")	Idem

References

Alegria R. (2006), 'Countries, Regions and Multinational Firms: Location Determinants in the European Union', ERSA conference papers, European Regional Science Association.

Arlacchi P. (2007), *La Mafia Imprenditrice. Dalla Calabria al centro dell'inferno*, Il Saggiatore, Milano.

Artige L., Nicolini R. (2005), 'Evidence on the Determinants of Foreign Direct Investment: The Case of Three European Regions', UFAE and IAE Working Papers, available at http://ideas.repec.org/p/rpp/wpaper/0607.html

Asmundo A., Lisciandra M. (2008), 'Un tentativo di stima del costo delle estorsioni sulle imprese a livello regionale: il caso Sicilia', in: A. La Spina (ed.), *I costi dell'illegalità. Mafia ed estorsioni in Sicilia,,* il Mulino, Bologna.

Baltagi, B. H. (2008), *Econometric Analysis of Panel Data,* John Wiley & S., Chichester UK.

Barba Navaretti G., Venables A. J. (2004), *Multinational Firms in the World Economy,* Princeton University Press, Princeton N. J.

Barba Navaretti G., Basile R., Benfratello L., Castellani, D. (2009), 'Il Mezzogiorno e gli investimenti diretti esteri', Centro Studi Luca d'Agliano, Milano.

Barrios S. Görg H., Strobl E. (2003), 'Multinationals' Location Choice, Agglomeration Economies and Public Incentives', Core, Discussion Paper n. 17, February.

Basile R. (2001), 'The Locational Determinants of Foreign-Owned Manufacturing Plants in Italy: The Role of the South', ISAE, *Documenti di lavoro*, n. 14/01.

Basile R. (2004), 'Acquisition Versus Greenfield Investment: The Location of Foreign Manufacturers in Italy', *Regional Science and Urban Economics*, 1, pp. 3-25.

Basile R., Castellani D., Zanfei A. (2008), 'Location choices of multinational firms in Europe: The role of EU cohesion policy', *Journal of International Economics*, 2, pp. 328-340.

Basile R.,Castellani D., Zanfei A. (2009), 'National Boundaries and the Location of Multinational Firms in Europe', *Papers in Regional Science*, 4, pp. 733-748.

Bonaccorsi di Patti, E. (2009), 'Weak Institutions and Credit Availability: The Impact of Crime on Banks Loans', Q*uestioni di Economia e Finanza,* no. 52 , Banca d'Italia, Roma.

Bénassy-Quéré A., Coupet M., Mayer T. (2005), 'Institutional Determinants of Foreign Direct Investment', CEPII Working Paper, n. 2005-05.

Brand S., Price R. (2000), 'The Economic and Social Costs of Crime', Home Office Research Study 217, London.

Broadman H., Recanatini F. (2000), 'Seeds of Corruption: Do Market Institutions Matter?', *World Bank Policy Research Working Paper*, n. 2368, World Bank.

Broadman H., Recanatini F. (2001), 'Where Has All The Foreign Investment Gone In Russia?', *World Bank Policy Research Working Paper*, n. 2640, World Bank.

Bronzini, R. (2004), 'Distretti industriali, economie di agglomerazione e investimenti esteri in Italia', in: Banca d'Italia, *Economie locali, modelli di agglomerazione e apertura internazionale*, Conference proceedings, Banca d'Italia, Roma.

Buonanno P. (2006), 'The Socioeconomic Determinants of Crime. A Review of the Literature', Dipartimento di Economia, Università di Milano-Bicocca, Working Paper Series, n. 63.

Catanzaro R. (1991), *Il delitto come impresa. Storia sociale della Mafia,* Rizzoli, Milano.

Centorrino M., Ofria F. (2008), 'Criminalità organizzata e produttività del lavoro nel Mezzogiorno: un'applicazione del modello «Kaldor-Verdoorn»', *Rivista Economica del Mezzogiorno,* 1, pp. 163-189.

Centorrino M., Signorino G. (1993), 'Criminalità e modelli di economia locale', in: S. Zamagni (ed.), *Mercati illegali e mafie. L'economia del crimine organizzato,* il Mulino, Bologna.

Committeri M. (2004), 'Investire in Italia? Risultati di una recente indagine empirica', *Temi di discussione del Servizio Studi*, n. 491, Banca d'Italia, Roma.

Confesercenti (2007), *SOS Impresa. 10° Rapporto,* Confersercenti, Roma.

CPI - Commissione parlamentare d'inchiesta sul fenomeno della criminalità mafiosa o similare (2008), 'Relazione annuale sulla 'ndrangheta', Roma.

Cracolici, M. F., Uberti, T. E. (2009), 'Geographical distribution of crime in Italian provinces: a spatial econometric analysis', *Jahrbuch für Regionalwissenschaft*, 29, pp. 1-28.

Crozet M., Mayer T., Mucchielli J. L. (2004), 'How do Firms Agglomerate? A Study for FDI in France', *Regional Science and Urban Economics*, 1, pp. 27-54.

Czabanski J. (2008), *Estimates of Cost of Crime*: History, Methodologies, and Implications, Springer-Verlag, Berlin Heidelberg.

Daniele V. (2005), 'Perché le imprese estere non investono al Sud?', *Rivista Economica del Mezzogiorno*, 4, pp. 795-818.

Daniele V. (2009), 'Organized crime and regional development. A review of the Italian case', *Trends in Organized Crime*, 3-4, pp. 211-234.

Devereux M. P., Griffith R. (2003), 'The Impact of Corporate Taxation on the Location of Capital: A Review', *Economic Analysis and Policy*, 2, pp. 275-292.

Devereux,M., Griffith, R., Simpson, H. (2007), 'Firm location decisions, regional grants and agglomeration externalities', *Journal of Public Economics*, 3-4, pp. 413–435.

European Commission (2006), 'Study on FDI and Regional Development', Final Report, Report by Copenhagen Economics, European Commission, Brussels.

Gambetta D. (1996), *The Sicilian Mafia: The Business of Private Protection*, Harvard University Press.

Globerman S., Shapiro D. (2002), 'Global Foreign Direct Investment Flows: The Role of Governance Infrastructure', *World Development,* 11, pp. 1899-1919.

GPF-ISPO (2005), 'L'immagine del Mezzogiorno d'Italia in 11 Paesi del mondo', Market research conducted by GPF-ISPO for the Italian Ministry of Economics and Finance, Roma.

Habib M., Zurawicki L. (2001), 'Country-Level Investment and the Effect of Corruption: Some Empirical Evidence', *International Business Review*, 10, pp. 687-700.

Hermosilla A., Ortega N. (2003), 'Factores determinantes de las decisiones de inversion de las multinacionales industriales implantadas en Cataluña', Centre d'Economia Industrial, Document d'Economia Industrial, no. 13.

Konings J. (2004), 'The Employment Effects of Foreign Direct Investment', *EIB Papers*, European Investment Bank, vol. 9, n. 1.

Kokkinou A. Psycharis I. (2004), 'Foreign Direct Investments, Regional Incentives and Regional Attractiveness in Greece', University of Thessaly, Department of Planning and Regional Development, Discussion paper, n.10.

Krkoska L., Robeck K. (2006), 'The impact of crime on the enterprise sector: Transition versus non-transition countries', European Bank for Reconstruction and Development, Working paper, n. 97.

IMF – OECD (2000), *Report on the Survey of Implementation of Implementation of Methodological Standards for Direct Investment*, Washington D.C., March.

IPI – Istituto per la Promozione Industriale (2005), *Aree dei Consorzi Industriali censite dall'IPI nelle regioni dell'Obiettivo 1 e relativa disponibilità di terreni*, IPI – Dipartimento di economia applicata, Rome, 2005 (www.sifli.info).

La Spina A. (2008), ed., *I costi dell'illegalità. Mafia ed estorsioni in Sicilia,* il Mulino, Bologna.

La Spina A., Lo Forte G. (2006), 'I costi dell'illegalità', *Rivista economica del Mezzogiorno*, 3-4, pp. 509-570.

Lampe von, K. (2004), 'Measuring organized crime: A critique of current approach', in: P. C. Van Duyne, M. Jager, K. von Lampe, J. L. Newell (eds), *Threats and Phantoms of Organized Crime*, *Corruption and Terrorism*, Wolf Legal Publisher, Nijmegen.

Mayer T. (2004), 'Where do Foreign Firms Locate in France and why', *EIB Papers*, European Investment Bank, vol. 9, n. 2.

Mariotti S., Mutinelli M. (2005), *Italia multinazionale 2005. Le partecipazioni italiane all'estero ed estere in Italia*, ICE - Istituto Nazionale per il Commercio Estero, Rome.

Marini D., Turato F. (2002), 'Nord-Est e Mezzogiorno: nuove relazioni, vecchi stereotipi', Rapporti Formez-Fondazione Nord-Est, Aprile.

Marselli e Vannini (2003), 'What is the Impact of Unemployment on Crime Rates?', M. Baldassarri e B. Chiarini (ed.), *Studies in Labour Markets and Industrial Relations*, Palgrave Macmillan, Basingstoke.

Olson M. (1984), "Einaudi Notizie", Circolare ai soci della Fondazione Einaudi, Roma.

Paoli, L. (2004), 'Italian Organised Crime: Mafia Associations and Criminal Enterprises', *Global Crime*, 1, pp. 19-31.

Pelegrìn A., Bolancé C. (2008), 'Regional Foreign Direct Investment in Manufacturing. Do Agglomeration Economies Matter?' *Regional Studies*, 4, pp. 505-522.

Peri G. (2004), 'Socio-Cultural Variables and Economic Success: Evidence from Italian Provinces 1951-1991', *Berkeley Electronic Journal, Topics in Macroeconomics*, 1, article 12.

Sylos Labini P. (1985), 'L'evoluzione economica del Mezzogiorno negli ultimi trent'anni*, Temi di Discussione*, n. 46, Banca d'Italia, Roma.

United Nations – Office on Drugs and Crime (2007), *Crime and Development in Central America. Caught in the Crossfire*, New York, May.

UNCTAD (2006), *World Investment Report 2006. FDI from Developing and Transition Economies: Implications for Development*, United Nations, New York.

Uppenberg, K., E. Riess (2004), 'Determinants and Growth Effects of Foreign Direct Investment', *EIB Papers*, European Investment Bank, vol. 9, n. 1.

Wei S. J. (2000), 'Local Corruption and Global Capital Flows', *Brookings Papers on Economic Activity*, 2, pp. 303-354.

Wooldridge, J. M. (2002), *Econometric Analysis of Cross Section and Panel Data*, MIT Press, Cambridge M.

World Bank (2001), *Building Institutions for Markets. World Development Report 2002,* Oxford University Press, Cambridge M.

Zamagni S. (1993), ed., *Mercati illegali e mafie. L'economia del crimine organizzato,* il Mulino, Bologna.

CESifo Working Paper Series

for full list see www.cesifo-group.org/wp
(address: Poschingerstr. 5, 81679 Munich, Germany, office@cesifo.de)

_____

2367 Ximing Wu, Andreas Savvides and Thanasis Stengos, The Global Joint Distribution of Income and Health, August 2008

2368 Alejandro Donado and Klaus Wälde, Trade Unions Go Global!, August 2008

2369 Hans Gersbach and Hans Haller, Exit and Power in General Equilibrium, August 2008

2370 Jan P.A.M. Jacobs and Jan-Egbert Sturm, The Information Content of KOF Indicators on Swiss Current Account Data Revisions, August 2008

2371 Oliver Hülsewig, Johannes Mayr and Timo Wollmershäuser, Forecasting Euro Area Real GDP: Optimal Pooling of Information, August 2008

2372 Tigran Poghosyan and Jakob de Haan, Determinants of Cross-Border Bank Acquisitions in Transition Economies: A Latent Class Analysis, August 2008

2373 David Anthoff and Richard S.J. Tol, On International Equity Weights and National Decision Making on Climate Change, August 2008

2374 Florian Englmaier and Arno Schmöller, Reserve Price Formation in Online Auctions, August 2008

2375 Karl Farmer, Birgit Friedl and Andreas Rainer, Effects of Unilateral Climate Policy on Terms of Trade, Capital Accumulation, and Welfare in a World Economy, August 2008

2376 Monika Bütler, Stefan Staubli and Maria Grazia Zito, The Role of the Annuity's Value on the Decision (Not) to Annuitize: Evidence from a Large Policy Change, August 2008

2377 Inmaculada Martínez-Zarzoso, The Impact of Urbanization on CO_2 Emissions: Evidence from Developing Countries, August 2008

2378 Brian Roberson and Dmitriy Kvasov, The Non-Constant-Sum Colonel Blotto Game, August 2008

2379 Ian Dew-Becker, How Much Sunlight Does it Take to Disinfect a Boardroom? A Short History of Executive Compensation Regulation, August 2008

2380 Cécile Aubert, Oliver Falck and Stephan Heblich, Subsidizing National Champions: An Evolutionary Perspective, August 2008

2381 Sebastian Buhai, Miguel Portela, Coen Teulings and Aico van Vuuren, Returns to Tenure or Seniority?, August 2008

2382 Erkki Koskela and Jan König, Flexible Outsourcing, Profit Sharing and Equilibrium Unemployment, August 2008

2383 Torberg Falch and Justina AV Fischer, Does a Generous Welfare State Crowd out Student Achievement? Panel Data Evidence from International Student Tests, September 2008