

Sistemi informativi, management e controllo

# Mafia and Firm Performance

The Effect of Organized Crime  
and Its Judicial Removal

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Domenico Nicolò

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Domenico Nicolò

**FrancoAngeli**



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Italiadomani  
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*A mia moglie Paola  
e ai miei figli Carmen e Vincenzo*

## INTRODUCTION

The mafia threatens the safety and freedom of citizens and negatively affects public institutions, businesses, the economy, social cohesion, and the well-being of many countries. Its ability to influence public institutions' decisions, extort money from companies, and infiltrate them to launder illicit funds – using also digital technologies, cryptocurrencies, and secret financial networks (shadow banks) – distorts market dynamics, affects prices, and hinders free competition among businesses. This leads to higher costs and inefficiencies for public institutions and companies.

Businesses infiltrated by organized crime gain unfair advantages through tax evasion, exploitative labor practices, and intimidation, forcing law-abiding competitors to either exit the market or engage in unethical practices such as profit manipulation and collusion with mafia-infiltrated firms. This negatively affects firms' competitiveness and performance in terms of profitability and technical efficiency, while also discouraging investment and the start of new ventures. These effects span from the microeconomic to the macroeconomic level, harming the social and economic well-being of entire countries, especially regions where organized crime is deeply rooted and widespread, leaving them hindered and unable to develop to catch up with more advanced nations. These adverse effects impact many countries worldwide due to the growing internationalization of criminal groups' activities. Mafia is no longer just a regional issue affecting Italy and a few other countries, but it has become a multinational phenomenon.

To address these severe adverse effects, Italy has enacted specific legislative measures, such as the anti-mafia code and anti-money laundering laws. Additionally, agencies have been established, including the National Anti-Mafia Directorate (DNA), the Anti-Mafia Investigation Directorate

(DIA), the Financial Intelligence Unit (UIF), and the National Agency for the Administration and Destination of Assets Seized and Confiscated from Organized Crime (ANBSC).

Organized crime is a multidisciplinary topic that involves multiple aspects, resulting in a growing body of literature across various fields, including sociology, anthropology, history, criminology, criminal law, and economics.

This book reviews the literature on organized crime, especially (but not only) regarding its effect on enterprise performance. It also deals with other relevant topics concerning organized crime, such as mafia infiltration into businesses and its impact on the economy and society. It presents results from ongoing studies conducted within the national relevance research project, PRIN PNRR 2022, titled “The effect of organized crime on firm technical efficiency and R&D investments”. This interdisciplinary research project involves scholars from economics, business economics, management, quantitative sciences, and law across three research units: the University of Messina (the lead research unit), the University Mediterranea of Reggio Calabria, and the University for Foreigners Dante Alighieri of Reggio Calabria. It examines the effects of organized crime on firms’ performance, technical efficiency, and their propensity to innovate and invest in research and development (R&D) in Italy. It employs a comprehensive approach by developing a composite crime indicator that combines various metrics related to organized crime. Specifically, the research unit at the University of Messina estimated this composite indicator using the INVIND dataset from the Bank of Italy, which captures companies’ perception of criminal risk in Italy. This estimation employed the Data Envelopment Analysis (DEA) methodology, along with the Robust Multidirectional Benefit-of-the-Doubt (RMBoD) technique, which combined various crime-related variables derived from the perception data collected during the INVIND survey.

The research examined the relationship between the perceived presence of organized crime, measured by composite crime indicators, company characteristics, and company performance. Using firm-level data mainly derived from financial statements, the research team is conducting several Stochastic Frontier Analyses (SFA) to evaluate how organized crime impacts firms’ performance, considering that firm-specific characteristics vary, including sector, size, age, propensity to export, legal form, location, ownership (family or non-family), management style, life stage, and growth (high-growth startups), alongside the influence of organized crime. This composite indicator helps assess organized crime’s impact on firms’ tech-

nical efficiency and other performance aspects, like operating profitability (ROA – Return on Assets), profitability on sales (ROS – Return on Sales), and investment in R&D. The initial findings from this ongoing project reveal significant broader economic impacts of organized crime, offering valuable insights to develop strategies that strengthen firms' resilience and support the state's efforts to prevent and combat the mafia.

This book is structured as follows.

The first chapter presents a systematic literature review (SLR) and a traditional literature review to identify research gaps related to the impact of organized crime on firm performance, providing a solid analytical foundation for future empirical studies. Although organized crime has a significant influence on business activity, the economy, and society, few studies have evaluated its effect on business performance. To bridge this gap, chapters four, five, and six examine how organized crime affects firm performance, particularly in terms of technical efficiency and profitability.

The second chapter addresses conceptual issues, including the definition of organized crime and the methodological challenges in measuring its presence and perception, the permeability of territories to mafia infiltration, and the key indicators used for these purposes. It also provides the composite indicator (CI) of mafia presence developed by the team at the University of Messina, the leader of our PRIN PNRR research project. This indicator assesses the mafia at the municipal level. Such a highly detailed geographical assessment is necessary because of the significant variation in mafia activity and presence across regional and even provincial levels. It is essential for developing targeted prevention strategies, law enforcement actions, and strategically deploying specialized anti-mafia police and judicial units. Besides these practical reasons, assessing the organized crime presence at the municipal level also has theoretical importance because it is essential to develop a more detailed and accurate understanding of how this phenomenon impacts communities, institutions, and businesses in each specific context.

Chapter three explores how the mafia infiltrates legitimate businesses and the economy to launder illegal money and generate profits. It describes the traits of companies infiltrated by organized crime and the features of their financial statements. Money laundering is examined in relation to organized crime, although this practice is not exclusive to the mafia. When performed by other entities, it assumes specific characteristics, which, however, are not discussed, as they fall outside the scope of this book. This chapter also describes the anti-money laundering framework of the Bank of Italy's UIF (Unità di Informazione Finanziaria), which addresses

this issue by monitoring suspicious transactions and reporting them to the National Anti-Mafia Directorate (“Direzione Nazionale Antimafia” – DNA) and the Anti-Mafia Investigation Directorate (“Direzione Investigativa Antimafia” – DIA). It also explores how digital advances in crime occur, showing how globalization and technological progress, especially in the ICT industry, have allowed mafia groups to diversify into new activities and expand internationally. These new strategies and activities of organized crime respond to advanced tools for detecting money laundering and illicit financial transactions, as well as to the need to launder large amounts of illegal money, not just to increase profits. Finally, the third chapter examines the social and economic impacts of organized crime.

Chapter four examines how organized crime creates negative externalities that affect the performance of legitimate businesses. It presents empirical research from Italy, conducted as part of the PRIN PNRR project, including analyses of the Bank of Italy’s INVIND survey and other studies on the civil engineering sector, where mafia infiltration is prominent, as well as high-growth Italian startups known as gazelle firms. These findings demonstrate how organized crime harms profitability and technical efficiency of these firms.

Chapter five examines the institutional response to mafia infiltration in businesses, focusing on judicial administration (JA) and the management of seized companies. Removing the influence of organized crime through JA undermines the performance and stability of firms. These adverse effects are so severe that, in Italy, over 60% of these companies have been liquidated or failed shortly after beginning this process. In the JA, planning and management control tools are crucial for assessing the likelihood of continuity and overseeing the transition of businesses from mafia control to legality. Various scenarios are outlined to assist court administrators in evaluating the prospects for continuing seized companies. This chapter also emphasizes the essential contribution of strategic planning and management control systems in supporting judicial administrators with these functions.

Chapter six concludes this book by examining the positive outcomes of anti-mafia enforcement, including improved performance of legitimate businesses after judicial intervention. The chapter discusses how these actions influence the performance of seized firms. It includes two studies: the first compares the impact of judicial administration on family businesses versus non-family businesses, and the second analyzes the effects on the performance of competitors of seized companies, based on observations in

the years following the initiation of judicial administration for companies seized due to involvement in organized crime.

A limitation of this book is the absence of a unique, comprehensive theoretical framework. This is because it aims to analyze different topics within the same research project, while also examining the impact of organized crime on companies' technical efficiency and performance.

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# 1.

## LITERATURE REVIEW: THE EFFECT OF CRIME AND THE MAFIA ON FIRM PERFORMANCE

### 1.1. A systematic literature review on the effect of crime on firm performance

Organized crime has a significant impact on society, the economy, and businesses. The scientific literature offers insights into various aspects of this issue from multiple perspectives, including economics, history, sociology, criminology, and law. However, few studies have explored its effect on firm performance.

This gap in the literature is highlighted by a systematic literature review (SLR), which also provides a robust scientific basis for this book. In this section, we describe the process used to conduct an SLR.

Kraus et al. state that an SLR “... is a review of an existing body of literature that follows a transparent and reproducible methodology in searching, assessing its quality and synthesizing it, with a high level of objectivity”<sup>1</sup>.

To conduct an SLR, they recommend following the process described in the stages outlined below<sup>2</sup>:

1. Planning the review
  - Identify the need
  - Develop a protocol
2. Identifying criteria and evaluating studies
3. Extracting and synthesizing data
4. Disseminating the review findings

<sup>1</sup> S. KRAUS, M. BREIER and S. DASÍ-RODRÍGUEZ, *The art of crafting a systematic literature review in entrepreneurship research*, in *International Entrepreneurship and Management Journal*, Vol. 16, No. 3, 2020: 1-20.

<sup>2</sup> Ibidem.



### 1.1.1. *Planning the review: identify the need and develop a research protocol*

In planning the review, we have preliminarily identified the need<sup>3</sup> to define the *state of art* of scientific knowledge about this study. Recognizing the need for a deeper knowledge of a specific topic is the initial step in any investigation to understand the current state of the art in that field. This process involves identifying what is known and what remains unknown, uncovering research gaps, and generating insights to guide further investigations and future research directions<sup>4</sup>.

In the second step, we developed a research protocol<sup>5</sup> aligned with our research questions.

To define current scientific knowledge and identify research gaps, we analyzed an SLR<sup>6</sup> regarding the relationship between organized crime and entrepreneurship before conducting our review on how organized crime affects business performance. This SLR examined 46 theoretical and empirical studies within the Business Management and Administration (BMA) literature, categorizing the articles into four key themes:

1. Organized crime as an enterprise.
2. The effects of organized crime on enterprises.
3. Strategies employed by companies to mitigate the influence of organized crime.
4. Government interventions.

<sup>3</sup> A. ARMITAGE and D. KEEBLE-ALLEN, *Undertaking a structured literature review or structuring a literature review: tales from the field*, in Proceedings of the 7th European Conference on Research Methodology for Business and Management Studies: ECRM2008, Regent's College, London, 2008 (pp. 35); R. B. BRINER and D. DENYER, *Systematic review and evidence synthesis as a practice and scholarship tool*, in D. M. ROUSSEAU (Ed.), *Handbook of evidence-based management: Companies, classrooms and research*, Oxford University Press, New York, 2012, p. 17; H. FRANK and I. HATAK, *Doing a research literature review*, in A. FAYOLLE and M. WRIGHT (Eds.), *How to get published in the best entrepreneurship journals: A guide to steer your academic career*, Edward Elgar Publishing, Cheltenham, 2014, pp. 94-117.

<sup>4</sup> R. W. PALMATIER, M. B. HOUSTON and J. HULLAND, *Review articles: Purpose, process, and structure*, in Journal of the Academy of Marketing Science, 46, 2018: 1-5; R. J. TORRACO, *Writing integrative literature reviews: guidelines and examples*, in Human Resource Development Review, Vol. 4, No. 3, 2005: 356-367; D. TRANFIELD, D. DENYER and P. SMART, *Towards a methodology for developing evidence-informed management knowledge by means of systematic review*, in British Journal of Management, 14, 2003: 207-222.

<sup>5</sup> Mentioned D. TRANFIELD, D. DENYER and P. SMART, *Towards a methodology for developing evidence-informed management knowledge by means of systematic review*.

<sup>6</sup> S. CINCIMINO, S. GNOFFO, F. LA ROSA and S. PATERNOSTRO, *Entrepreneurship and organised crime: a systematic review and research agenda based on three decades of scholarship*, in Journal of Small Business and Enterprise Development, 2024.

Since our study examines how organized crime impacts business performance, we analyzed 12 of the 46 articles that best align with our topic, all belonging to the second theme: “the effects of organized crime on enterprises”, which is broader than ours.

These 12 articles, mainly focused on Italy, examine various themes. However, only a few address the impact of organized crime on business performance<sup>7</sup>. These studies explore the removal of mafia influence through judicial administration (JA) and analyze outcomes such as job loss and the decline in firm performance from before the seizure to after the JA phase<sup>8</sup>. They also examine the infiltration of organized crime into the legal economy and businesses for money laundering, a topic relevant to this book<sup>9</sup>. Other studies examine other issues, including the influence of organized crime on corporate social responsibility<sup>10</sup>, business ethics<sup>11</sup>, and social performance<sup>12</sup>.

This SLR<sup>13</sup> highlights that the topic of organized crime in relation to businesses has been analyzed by these 46 articles from a wide range of

<sup>7</sup> D. RAVENDA, J. M. ARGILÉS-BOSCH and M. M. VALENCIA-SILVA, *Labor tax avoidance and its determinants: The case of mafia firms in Italy*, in *Journal of Business Ethics*, 132, 2015: 41-62. <https://doi.org/10.1007/s10551-014-2304-7>; D. RAVENDA, M. M. VALENCIA-SILVA, J. M. ARGILES-BOSCH and J. GARCIA-BLONDON, *Accrual management as an indication of money laundering through legally registered Mafia firms in Italy*, in *Accounting, Auditing and Accountability Journal*, 31(1): 286-317. <https://doi.org/10.1108/aaaj-12-2015-2329>; D. RAVENDA, M. M. VALENCIA-SILVA, J. M. ARGILES-BOSCH and J. GARCÍA-BLONDÓN, *Money laundering through the strategic management of accounting transactions*, in *Critical Perspectives on Accounting*, 60: 65-85. <https://doi.org/10.1016/j.cpa.2018.08.003>.

<sup>8</sup> F. M. CALAMUNCI, *What happens in criminal firms after godfather management removal? Judicial administration and firms' performance*, in *Small Business Economics*, 58(1), 2022: 565-591.

<sup>9</sup> C. PACINI, W. HOPWOOD, G. YOUNG and J. CRAIN, *The role of shell entities in fraud and other financial crimes*, in *Managerial Auditing Journal*, Vol. 34, No. 3, 2018: 247-267, <https://doi.org/10.1108/maj-01-2018-1768>.

<sup>10</sup> V. G. MAURER, *Corporate social responsibility and the 'divided corporate self': the case of chiquita in Colombia*, in *Journal of Business Ethics*, Vol. 88, No. Suppl. 4, 2009: 595-603. <https://doi.org/10.1007/s10551-009-0313-8>.

<sup>11</sup> L. FUXMAN, *Ethical dilemmas of doing business in post-soviet Ukraine*, in *Journal of Business Ethics*, Vol. 16, No. 2, 1997: 1273-1282. <https://doi.org/10.1023/a:1005750101044>; B. A. K. RIDER, *The financial world at risk: the dangers of organized crime, money laundering and corruption*, in *Managerial Auditing Journal*, Vol. 8, No. 7, 1993. <https://doi.org/10.1108/02686909310046835>.

<sup>12</sup> M. B. E. CLARKSON, *A stakeholder framework for analyzing and evaluating corporate social performance*, in *The Academy of Management Review*, Vol. 20, No. 1, 1995: 92-117. <https://doi.org/10.5465/amr.1995.9503271994>; D. J. WOOD, *Corporate social performance revisited*, in *The Academy of Management Review*, Vol. 16, No. 4, 1991: 691-718. <https://doi.org/10.2307/258977>.

<sup>13</sup> Mentioned S. CINCIMINO, S. GNOFFO, F. LA ROSA and S. PATERNOSTRO, *Entrepreneurship and organised crime: a systematic review and research agenda based on three decades of scholarship*.

perspectives, as the journals where the research was published cover a wide range of scientific fields, including management, entrepreneurship, business ethics, and corporate social responsibility.

Other interesting points from this review are:

- The literature is fragmented. Keywords are numerous, each with a low average frequency. Only six keywords were used more than three times. The most frequent ones were organized crime, CSR, entrepreneurship, mafia, and money laundering.
- The regional focus of the papers aligns with the global reach of criminal organizations: while many studies focus on Italy, others highlight the international spread of organized crime, particularly in Central and South America, the United States, the United Kingdom, Hong Kong, and Ukraine.
- Most scientific contributions rely on the case study method (14 articles), followed by conceptual articles (13) and studies using quantitative methods (10). The remaining articles applied mixed methods (three), other research methods (three), surveys or questionnaires (two), or content analysis (one). The authors of this literature review emphasize the high relevance of case studies, as the cases used to study the effects of organized crime on businesses share similar characteristics and are therefore able to capture and explore the general and contextual factors.

Our study contributes to the limited literature on the impact of organized crime on business performance.

We employed a two-step approach, moving from specific to general. First, we concentrated on detailed analyses of how “organized crime” affects “corporate performance”: the focus of this book.

Therefore, we have posed the following research question:

*RQ: What is the current state of the literature regarding the relationship between “Organized Crime” and “firms’ performance”?*

An SLR must follow rules at each stage, specifically a defined formal protocol<sup>14</sup> concerning activities to be conducted at each stage. Our protocol defines the parameters for searching articles in online databases<sup>15</sup>, as shown below.

<sup>14</sup> M. MASSARO, J. DUMAY and J. GUTHRIE, *On the shoulders of giants: undertaking a structured literature review in accounting*, in *Accounting, Auditing and Accountability Journal*, Vol. 29, No. 5, 2016: 767-801. <https://doi.org/10.1108/aaaj-01-2015-1939>.

<sup>15</sup> L. PITTAWAY, R. HOLT and J. BROAD (Eds.), *Synthesising knowledge in entrepreneurship research: The role of systematic literature reviews*, *Handbook of research on small business and entrepreneurship*, Edward Elgar, London, 2014, pp. 83-105.

To search within the article's "title, abstract, and keywords", we used this search string: "Organized crime" AND "firm" OR "company" OR "business" OR "enterprise" AND "performance".

( TITLE-ABS-KEY ( organized crime AND firm AND performance )  
OR TITLE-ABS-KEY (organized crime AND company AND performance )  
OR TITLE-ABS-KEY ( organized crime AND business AND performance )  
OR TITLE-ABS-KEY ( organized crime AND enterprise AND performance ) )

Noticing that the initial analysis produced a relatively small number of contributions for a systematic review, we decided to conduct a traditional review in the final paragraph of this chapter. As scholars have argued, the prerequisite for writing an SLR is the availability of sufficient literature on the subject to justify a synthesis<sup>16</sup>. If the literature is extensive, "a systematic review can help to consolidate the topic by providing a 'status quo' of current research"<sup>17</sup>. If the number of articles is very small, as in our case, the literature review can rarely provide new insights or theories. When the conditions for performing an SLR are lacking, a traditional review may be more appropriate<sup>18</sup>.

From a broader perspective, we also conducted a SLR of selected articles using the keywords "crime" and "business performance" for two reasons: 1) it included articles on "organized crime" and "business" performance; 2) it meets the needs of scholars studying the effects of crime on business performance, as well as those related to organized crime.

Therefore, before presenting the traditional literature review in the final paragraph of this chapter on the specific topic of the relationship between "organized crime" and "firms' performance", we carried out an SLR on the broader theme: "crime" and "firms' performance", which also includes articles relevant to this book's focus: "organized crime and firms' performance".

To search within the article's "title, abstract, and keywords", we used the following second search string: "Crime" AND "firm" OR "company" OR "business" OR "enterprise" AND "performance".

<sup>16</sup> G. P. HODGKINSON and J. K. FORD, *What makes excellent literature reviews excellent? A clarification of some common mistakes and misconceptions*, in *Journal of Organizational Behavior*, 2015: 36(S1), S1-S5; Mentioned D. TRANFIELD, D. DENYER and P. SMART, *Towards a methodology for developing evidence-informed management knowledge by means of systematic review*.

<sup>17</sup> Mentioned S. KRAUS, M. BREIER and S. DASÍ-RODRÍGUEZ, *The art of crafting a systematic literature review in entrepreneurship research*.

<sup>18</sup> Mentioned L. PITTAWAY, R. HOLT and J. BROAD (Eds.), *Synthesising knowledge in entrepreneurship research: The role of systematic literature reviews*.

( TITLE-ABS-KEY ( crime AND firm AND performance ) OR TITLE-ABS-KEY ( crime AND company AND performance ) OR TITLE-ABS-KEY ( crime AND business AND performance ) OR TITLE-ABS-KEY ( crime AND enterprise AND performance ) )

### 1.1.2. *Identifying criteria and evaluating studies*

We searched online databases to find studies. For entrepreneurship, Kraus et al.<sup>19</sup> recommend focusing on the following databases: ABI Inform/ProQuest, EBSCO/Business Source Premier, JSTOR, Mendeley, ScienceDirect, Scopus, SpringerLink, and Web of Science. We queried two online databases, Scopus and ISI Web of Science, which ensure the high scientific quality of peer-reviewed articles.

Scopus was considered the primary source for scientific articles, given the verified quality of research it indexes, which includes only peer-reviewed papers<sup>20</sup>. This digital database is widely used in other literature reviews in the fields of business, management, and entrepreneurship, as well as in the previously analyzed SLR regarding the relationship between organized crime and entrepreneurship.

The scientific papers were selected according to these criteria:

- only articles published in scientific journals<sup>21</sup>;
- written in English<sup>22</sup>;
- belonging to the fields of business, economics, management, and econometrics.

We also used JSTOR and Google Scholar to find and download the full texts of articles<sup>23</sup>. The Google Scholar source was not used for the SLR because it also includes unscientific literature (“grey literature”).

<sup>19</sup> Mentioned S. KRAUS, M. BREIER and S. DASÍ-RODRÍGUEZ, *The art of crafting a systematic literature review in entrepreneurship research*.

<sup>20</sup> M. E. FALAGAS, E. I. PITSOUNI, G. A. MALIETZIS and G. PAPPAS, *Comparison of PubMed, Scopus, web of science, and google scholar: strengths and weaknesses*, in The FASEB Journal Life Sciences Forum, Vol. 22, No. 2, 2008: 338-342.

<sup>21</sup> R. LIGHT and D. PILLEMER, *Summing up: The Science of Reviewing Research*, Harvard University Press, Cambridge, MA, 1984; R. LOMBARDI and G. SECUNDO, *The digital transformation of corporate reporting-a systematic literature review and avenues for future research*, in Meditari Accountancy Research, 29, No. 5, 2021: 1179-1208; T. ZHENG, M. ARDOLINO, A. BACCHETTI and M. PERONA, *The applications of industry 4.0 technologies in manufacturing context: a systematic literature review*, in International Journal of Production Research, Vol. 59, No. 6, 2020.

<sup>22</sup> M. PETTICREW and H. ROBERTS, *Systematic Reviews in the Social Sciences: A Practical Guide*, Blackwell Publishing, Malden, MA, 2008.

<sup>23</sup> N. R. HADDAWAY, A. M. COLLINS, D. COUGHLIN and S. KIRK, *The role of Google Scholar in evidence reviews and its applicability to grey literature searching*, in PloS one, 10(9), 2015: e0138237.

### 1.1.3. *Extracting and synthesizing data*

Regarding the relationship between “organized crime” and “business performance,” we queried the two online databases using the first search string (“Organized crime” AND “firm” OR “company” OR “business” OR “enterprise” AND “performance”).

Based on these criteria, we found 7 papers in Scopus and 9 in ISI Web of Science.

We then extracted and combined search results from the two databases, removed duplicates and irrelevant entries related to our research focus, resulting in 10 papers about this relationship. Replacing “mafia” with “organized crime” does not increase the number of papers (Tab. 1).

*Tab. 1 - Number of papers indexed in Scopus and Web of Science on “Organized crime and firm performance”*

Number of papers indexed in Web of Science	7
Number of papers indexed in Scopus	9
Total number of papers	16
Number of duplicated papers removed	(3)
	13
Number of papers removed because not relevant to the topic	(3)
Final corpus of papers selected	10

Given the small number of papers, as we have already mentioned, it is neither possible nor meaningful to conduct an SLR. However, we have performed a traditional review of this relationship in the concluding section of this chapter.

Still, we thought it would be helpful to conduct an SLR, expanding the scope to include the relationship between “crime and firm performance” because it helps identify research gaps related to our question about the connection between “organized crime and firm performance,” and gather valuable insights from this broader theme for our more specific topic.

Keeping the protocol unchanged, we only modified the search string this way: “Crime” AND “firm” OR “company” OR “business” OR “enterprise” AND “performance”.

The two online databases consulted returned 61 papers in Scopus and 38 in ISI Web of Science, respectively.

After eliminating 11 duplicate papers, we reviewed the remaining ones and removed 12 because they did not align with the topic of crime and firms’ performance (Tab. 2).

Tab. 2 - Number of papers on “Crime and firm performance” indexed in Scopus and Web of Science

Number of papers indexed in Web of Science	38
Number of papers indexed in Scopus	61
Total number of papers	99
Number of duplicated papers removed	(11)
	88
Number of papers removed because not relevant to the topic	(12)
Final corpus of papers selected	76

1.1.4. Disseminating the review findings

In stage 4, we analyze the SLR results related to crime and firm performance. A dual analysis was conducted on the final sample, including both descriptive analysis and clustering. The descriptive analysis aims to highlight the main features of the articles, such as their quantity, trends over time, and distribution across journals. The cluster analysis uncovers interesting relationships based on the topics covered by the papers.

The analysis of results from Scopus and Web of Science (WoS) offers valuable insights into the year, country, and journal. We present the analyses for each database separately below.

The distribution by country of papers on the topic “Crime and firm performance” varies between Scopus (Tab. 3) and WoS (Tab. 4). In Scopus, the countries with the most papers are the USA (25 papers), China (12), and the UK (9), along with Hong Kong and Italy (5). In WoS, the countries with the most papers are the USA (13), Italy (8), and China and the UK (5).

*Tab. 3 - Number of papers on “Crime and firm performance” indexed in Scopus, by country*

USA	25
China	12
UK	9
Hong Kong	5
Italy	5
Australia	3
Canada	3
South Korea	3
Spain	3
Colombia	2

*Source:* Our elaboration from Scopus

*Tab. 4 - Number of papers on “Crime and firm performance” indexed in Web of Science, by country*

USA	13
Italy	8
China	5
UK	5
Canada	2
Germany	2
South Africa	2
Spain	2
Ukraine	2
Australia	1

*Source:* Our elaboration from Web of Science

The distribution of publications on the topic by year varies between Scopus and WoS (Tab. 5 and Tab. 6). In Scopus, the earliest article was published in 2002, with only a few publications in the following years, never exceeding four per year. A peak occurs in 2022 with 9 papers and in 2023 with 10 papers. In WoS, the first article appeared in 2014, with peak publishing years between 2022 and 2024.



*Tab. 5 - Number of papers on “Crime and firm performance” indexed in Scopus, by year*

<i>Year</i>	<i>N. of papers</i>
2002	1
2003	2
2004-2007	0
2008	1
2009	0
2010	3
2011	1
2012	3
2013-2014	0
2015	3
2016	3
2017	4
2018	4
2019	3
2020	4
2021	4
2022	9
2023	10
2024	4
2025	2

*Source:* Our elaboration from Scopus

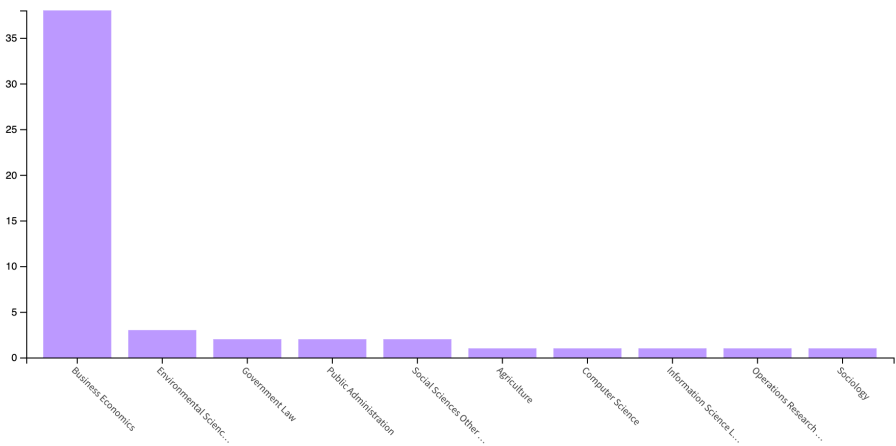
*Tab. 6 - Number of papers on “Crime and firm performance” indexed in Web of Science, by year*

<i>Year</i>	<i>N. of papers</i>
2014	1
2015	1
2016	0
2017	1
2018	2
2019	0
2020	1
2021	3
2022	7
2023	7
2024	6
2025	1

*Source:* Our elaboration from Web of Science

The papers published on the relationship between “Crime and firm performance” in the two databases by subject show a broader focus in WoS, with 37% of articles falling under Business Economics. The others are underrepresented, each accounting for less than 5% of the total papers indexed (Fig. 1). In Scopus, the most represented subject area is Business Economics and Management. This area accounts for about one-third of publications, although other fields are also significant. Specifically, the top three subject areas are, respectively: Business, Management and Accounting (33.1%), Decision Sciences (14.2%), Economics, Econometrics, and Finance (13.5%), and Engineering (10.1%) (Fig. 2).

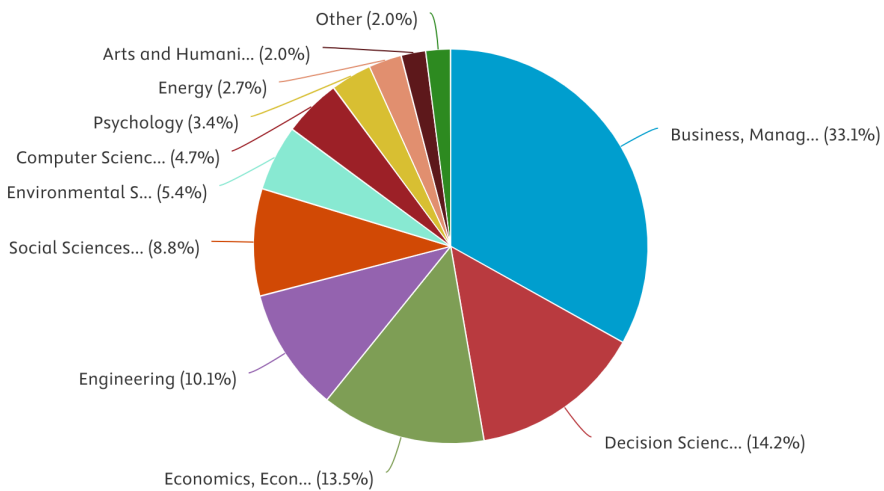
Fig. 1 - Number of papers on “Crime and firm performance” indexed in Web of Science, by subject area



Source: Web of Science

Fig. 2 - Percentage of papers on “Crime and firm performance” indexed in Scopus, by subject area

Documents by subject area



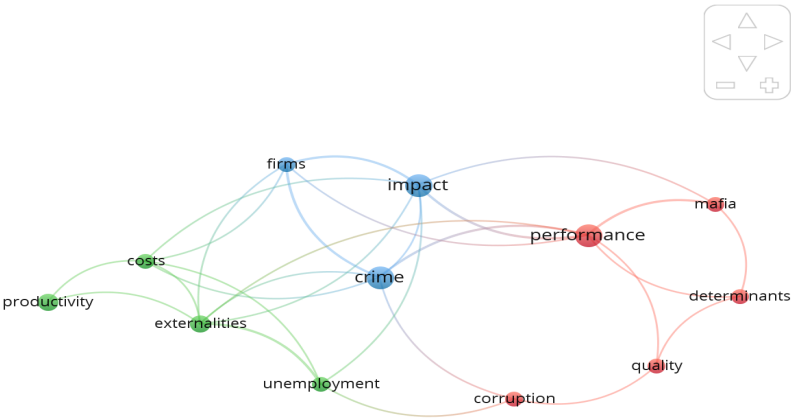
Source: Scopus

Data analysis was conducted using VOSviewer software<sup>24</sup>. Like other descriptive bibliometric studies<sup>25</sup>, we examined the co-occurrence of keywords and document citations. Therefore, we performed a cluster analysis to identify the main topics and the connections between them.

We developed co-occurrence analysis by selecting keywords as meaningful descriptions of article content and as criteria for including articles with a minimum of five keyword occurrences for Scopus and the entire Scholar and WOS, and three for WOS. This approach allowed us to identify networks of 12 keywords for both Scopus and WOS, and 8 keywords for the combined list of all selected papers from both datasets. Using this technique, we obtained dual visualizations: network and overlay. Finally, we clustered the results using VOSviewer. The main findings from the SLR are graphically reported (Fig. 3 and Fig. 4).

Analyzing the final graph (Fig. 5), which includes all 76 selected papers from both databases, reveals three distinct clusters of keyword co-occurrences. The keywords *crime*, *corruption*, and *productivity* form the first cluster. In it, represented by red lines, we observe the strongest connection among the keywords across all groups: the link between *crime* and

Fig. 3 - Network map of keyword co-occurrences from papers on “Crime and firm performance” indexed in Web of Science



<sup>24</sup> N. J. VAN ECK and L. WALTMAN, L., *Citation-based clustering of publications using CitNetExplorer and VOSviewer*, in *Scientometrics*, 111, 2017: 1053-1070.  
<sup>25</sup> G. SECUNDO, V. NDOU, P. DEL VECCHIO and DE PASCALE, G., *Sustainable development, intellectual capital and technology policies: a structured literature review and future research agenda*, in *Technological Forecasting and Social Change*, Vol. 153, 2020: 119917.

Fig. 4 - Network map of keyword co-occurrences from papers on “Crime and firm performance” indexed in Scopus

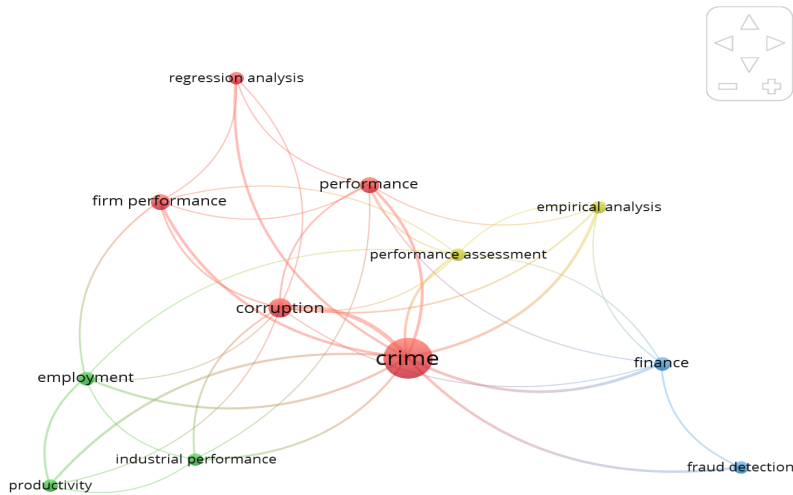
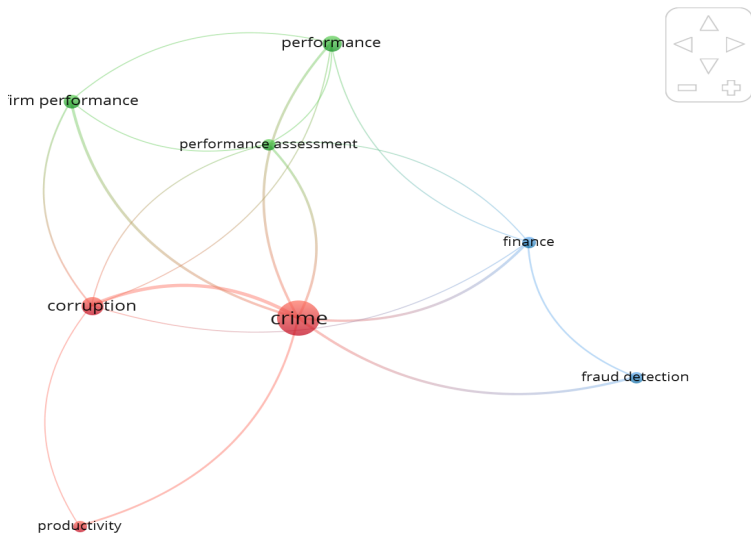


Fig. 5 - Network map of keyword co-occurrences from papers on “Crime and firm performance” indexed in Scopus and Web of Science



*corruption*, with an intensity of 10. The second cluster, marked by green lines, that includes *crime*, *performance assessment*, *firm performance*, and *productivity*. The strongest connection in this group, with an intensity value of 5, exists between crime and firm performance. Finally, in the third cluster, represented by blue lines, the connections among the keywords crime, fraud detection, and finance reach an intensity of 5.

## 1.2. A traditional literature review on the effect of organized crime on firm performance

Regarding the relationship between “organized crime” and “firm performance”, we identified the following 10 relevant articles selected by querying Scopus and WoS.

Tab. 7 - The papers on “Organized crime and firm performance” indexed in Scopus and Web of Science

1. Bianchi, P. A., Marra, A., Masciandaro, D., & Pecchiari, N. (2022). *Organized crime and firms' financial statements: evidence from criminal investigations in Italy*, in *The Accounting Review*, 97(3): 77-106.
2. Buckley, P. J., Enderwick, P., Hsieh, L., & Shenkar, O. (2024). *International business theory and the criminal multinational enterprise*, in *Journal of World Business*, 59(5): 101553.
3. Calamunci, F. M. (2022). *What happens in criminal firms after godfather management removal? Judicial administration and firms' performance*, in *Small Business Economics*, 58(1): 565-591.
4. Calamunci, F., & Drago, F. (2020). *The economic impact of organized crime infiltration in the legal economy: Evidence from the judicial administration of organized crime firms*, in *Italian Economic Journal*, 6(2): 275-297.
5. Chircop, J., Fabrizi, M., Malaspina, P., & Parbonetti, A. (2023). *Anti-Mafia Police Actions, Criminal Firms, and Peer Firm Tax Avoidance*, in *Journal of Accounting Research*, 61(1): 243-277.
6. Dileo, I., & Di Giorno, S. (2023). *The Impact of Extra Liquidity on Firm-Level Employment. An Analysis from an Italian Case Study*, in *L'industria*, 44(4): 677-700.
7. Forgione, A. F., & Migliardo, C. (2023). *Mafia risk perception: Evaluating the effect of organized crime on firm technical efficiency and investment proclivity*, in *Socio-Economic Planning Sciences*: 101619.
8. Forgione, A. F., & Migliardo, C. (2025). *The Mafia's Economic Grip: Firm Efficiency and a Composite Indicator of Organized Crime*, in *Journal of Regional Science*.
9. Ganau, R., & Rodríguez-Pose, A. (2017). *Industrial clusters, organized crime, and productivity growth in Italian SMEs*, in *Journal of Regional Science*, 58(2): 363-385.
10. Mehlum, H., Moene, K., & Torvik, R. (2003). *Predator or prey? Parasitic enterprises in economic development*, in *European Economic Review*, 47(2): 275-294.

Due to their scientific relevance, these papers play a relevant role in the framework of the topics examined in this book.

In Chapter 2, when examining the indicators of mafia presence or perception, we also refer to Forgione and Migliardo's<sup>26</sup> Mafia Index, a composite indicator (CI) used to assess organized crime in various Italian municipalities. This CI overcomes the limitations of individual indicators by combining 12 indicators that encompass multiple aspects of criminal activity. It provides a detailed estimate of organized crime presence, since it was calculated at the municipal level, and measures entrepreneurs' perception of organized crime, thereby minimizing the underreporting bias caused by victims' fear of retaliation.

In Chapter 3, which discusses the infiltration of organized crime into the economy and businesses, we refer to two of those papers selected because they are indexed in Scopus and Web of Science.

Bianchi et al.<sup>27</sup> examine the characteristics of mafia enterprises as reflected in their financial statements. It emphasizes that companies infiltrated by organized crime tend to carry higher levels of debt and financial risk compared to other firms, making them more vulnerable. These infiltrated companies are also more likely to engage in tax evasion and manipulate profits and losses, mainly to reduce their tax burden. Their profitability is lower than that of legitimate firms because they face higher operating costs, often due to the use of false or inflated invoices to divert funds from the business.

Buckley et al.<sup>28</sup> have investigated the internationalization of companies infiltrated by organized crime. They compared criminal multinational enterprises (CMNEs) with their legitimate competitors, examining the growing international presence of criminal enterprises, explaining their rise, and highlighting the similarities and differences with legitimate multinational companies. This study was included alongside others in section 3.7, which focuses on the internationalization of companies infiltrated by organized crime.

In Chapter 4, which examines the effect of the mafia on firm performance, we referred to five of the ten selected papers.

<sup>26</sup> A. F. FORGIONE and C. MIGLIARDO, *The Mafia's Economic Grip: Firm Efficiency and a Composite Indicator of Organized Crime*, in *Journal of Regional Science*, 2025.

<sup>27</sup> P. A. BIANCHI, A. MARRA, D. MASCIANDARO and N. PECCHIARI, *Organized crime and firms' financial statements: Evidence from criminal investigations in Italy*, in *The Accounting Review*, 97(3), 2022: 77-106.

<sup>28</sup> P. J. BUCKLEY, P. ENDERWICK, L. HSIEH and O. SHENKAR, *International business theory and the criminal multinational enterprise*, in *Journal of World Business*, 59(5), 2024: 101553.

We refer to Mehlum et al.<sup>29</sup>, who demonstrate that when the state fails to provide sufficient protection for property rights, predatory practices such as extortion by criminal organizations emerge, reducing business profitability and investment. Economies can become trapped in a vicious cycle of poverty and predation. In the same chapter, while discussing high-growth startups (gazelle enterprises), we also refer to this paper to explain the positive contributions that new firms and startups make to society. Countries with a low number of new entrepreneurs are particularly vulnerable to predation and never manage to free themselves. On the other hand, when the number of new entrepreneurs is high, poor societies can escape the poverty trap. This theory highlights the valuable role played by entrepreneurship in escaping poverty and underdevelopment, which in many economies is both a cause and an effect of the predatory behaviors exercised by organized crime on productive activities.

Ganau and Rodriguez-Pose<sup>30</sup>, using a large sample of Italian small- and medium-sized manufacturing firms from 2010 to 2013, demonstrated a negative impact of organized crime on firms' performance in terms of total factor productivity growth, which is greater for smaller firms than for larger ones.

The negative effects of criminal enterprises on their legitimate peers have been demonstrated by Chirchop et al.<sup>31</sup> To survive unfair competition from mafia firms, their competitors often increase tax evasion. This has also been demonstrated indirectly through a difference-in-difference approach, which shows how, after anti-mafia actions targeting mafia firms, legitimate companies decrease their tax evasion practices. Furthermore, anti-mafia police actions that dismantle these criminal organizations improve business performance, boost investments, and lower raw material costs for legal firms.

Research conducted by Dileo and Di Giorno<sup>32</sup> has demonstrated that organized crime has a significant negative impact on regional development and the performance and employment of legitimate businesses. Criminal

<sup>29</sup> H. MEHLUM, K. MOENE and R. TORVIK, *Predator or prey? Parasitic enterprises in economic development*, in *European Economic Review*, 47(2), 2003: 275-294.

<sup>30</sup> R. GANAU and A. RODRÍGUEZ-POSE, *Industrial clusters, organized crime, and productivity growth in Italian SMEs*, in *Journal of Regional Science*, 58(2), 2017: 363-385.

<sup>31</sup> J. CHIRCOP, M. FABRIZI, P. MALASPINA and A. PARBONETTI, *Anti-Mafia Police Actions, Criminal Firms, and Peer Firm Tax Avoidance*, in *Journal of Accounting Research*, 61(1), 2023: 243-277

<sup>32</sup> I. DILEO and S. DI GIORNO, *The Impact of Extra Liquidity on Firm-Level Employment. An Analysis from an Italian Case Study*, in *L'industria*, 44(4), 2023: 677-700.

enterprises have access to relevant liquidity, which they use to dominate the market. This advantage is especially evident during difficult times. Comparing two sectors with different infiltration rates in Bologna province, the study demonstrates a relation between high infiltration and increased liquidity. This high liquidity creates jobs and prevents bankruptcies, job cuts, and relocations.

Forgione and Migliardo<sup>33</sup> investigated how organized crime negatively impacts the performance of Italian companies in the civil engineering sector, which is highly vulnerable to mafia infiltration, extortion rackets, and unfair competition from organized crime. Companies operating in areas with a strong mafia presence in this sector experience a negative impact on their technical efficiency in labor utilization, leading to higher production costs. The study also demonstrates that as the quality of institutions, in terms of effectiveness and the rule of law, improves, the adverse effects of organized crime decrease.

Two papers by Calamunci<sup>34</sup> and Calamunci and Drago<sup>35</sup> are a key part of the theoretical framework in the final two chapters of this book (Chapters 5 and 6), which focus on Judicial Administration (JA) and its impact on the performance of criminal firms and their legitimate competitors.

The first article highlights how removing the leader from the firm due to the initiation of the JA leads to negative effects on profitability and debt levels. It explains this outcome by the difficulty the judicial administrator faces in establishing a new business model that can operate efficiently while complying with market rules and legality. The article also discusses the impact on the performance of firms in JA after the removal of the mafia-linked leader.

Analyzing over 180,000 firms, the second study shows that initiating judicial administration – by removing organized crime – benefits their competitors in the same province and industry, which experience positive effects such as increased turnover and investment during the first four years after a criminal-linked firm enters JA. This indirectly highlights the negative impact that organized crime ties have on legitimate businesses.

<sup>33</sup> A. F. FORGIONE and C. MIGLIARDO, *Mafia risk perception: Evaluating the effect of organized crime on firm technical efficiency and investment proclivity*, in *Socio-Economic Planning Sciences*, 2023, art. no. 101619

<sup>34</sup> Mentioned F. M. CALAMUNCI, *What happens in criminal firms after godfather management removal? Judicial administration and firms' performance*.

<sup>35</sup> F. M. CALAMUNCI F. and DRAGO F., *The economic impact of organized crime infiltration in the legal economy: Evidence from the judicial administration of organized crime firms*, in *Italian Economic Journal*, 6(2), 2020: 275-297.



Seven of the ten articles reviewed explicitly address the impact of organized crime on business performance, including those involved in JA.

Three other papers, while examining the impact of organized crime on business performance, cover various topics such as detailed (municipal) measurement of mafia presence using a composite indicator, the internationalization of infiltrated firms, and the significance of influxes of new entrepreneurs in helping developing areas escape the poverty trap caused by organized crime's predatory behavior.

Eight of the ten papers focuses on Italy.

All the papers employ quantitative methodologies.

## 2.

# ASSESSING ORGANIZED CRIME PRESENCE. A NECESSARY STEP TO EVALUATE ITS EFFECTS ON FIRM PERFORMANCE

### 2.1. Introduction

In this chapter, we examine some key preliminary theoretical issues related to defining the mafia, its typical activities, and indicators used to assess the presence of organized crime. In detail, we highlight:

- The importance of accurately assessing the presence of organized crime in different areas lies in evaluating its impact on the performance of companies in each region, as well as in defining targeted measures to combat and prevent the mafia by law enforcement agencies and the judiciary.
- The characteristics, advantages, and limitations of these indicators of the presence of the mafia in different contexts.
- The contribution provided by the composite indicator for estimating organized crime by Forgione and Migliardo, resulting from the mentioned PRIN PNRR 2022 research project.

Accurately assessing the presence of organized crime in different regions is essential for mapping its geographical distribution and, in this way, facilitating the allocation of police forces and prosecutors based on the specific needs of each region.

Since criminal organizations are not evenly distributed across regions and engage in various illegal activities at different levels, assessing the mafia's presence or perception in each area is vital for analyzing its impact on businesses, institutions, and communities. Regarding the purpose of this study, measuring the mafia's presence in each geographic region is the primary step in evaluating its effect on the performance of businesses across various territories.

However, measuring the presence of the mafia poses methodological challenges, as it is a social phenomenon that is hidden and has unclear boundaries. It is also multidimensional; therefore, it can be observed from various perspectives. The mafia is also dynamic because it can change over time. For all these reasons, this phenomenon cannot be measured objectively due to hidden illegal activities, victims' reluctance to report crimes, and the difficulties in identifying and punishing many reported crimes.

After reviewing key indicators of mafia presence, based on both objective and subjective variables, as well as direct and indirect indices, we will discuss the characteristics of the composite indicator (CI) estimated by Forgione and Migliardo<sup>1</sup>, which overcomes the limitations of the other indices.

## **2.2. Preliminary issues: Definition, typical activities, and other factors relevant to assessing the presence of mafia**

To evaluate the mafia's presence across various regions and estimate its impact, we need to conceptually define organized crime and its typical activities. The most detailed definition of "organized criminal group" was established during a United Nations convention in Palermo, Italy:

A structured group of three or more persons, existing for a period of time and acting in concert with the aim of committing one or more serious crimes or offences established in accordance with this Convention, to obtain, directly or indirectly, financial or other material benefits<sup>2</sup>.

Article 416-bis of the Italian Criminal Code defines a mafia-type organization as one formed by three or more people who use intimidation, social bonds, and conditions of subjugation and omertà derived from them to commit crimes. Their goal is to directly or indirectly gain control or influence over economic activities, concessions, authorizations, contracts, and public services, or to secure unjust profits or benefits for themselves or others. This definition also covers actions aimed at preventing or obstruct-

<sup>1</sup> This indicator was estimated by Forgione and Migliardo in the context of the mentioned PRIN PNRR research project. Mentioned A. F. FORGIONE and C. MIGLIARDO, *The Mafia's Economic Grip: Firm Efficiency and a Composite Indicator of Organized Crime*.

<sup>2</sup> UNITED NATIONS, *United Nations Convention Against Transnational Organized Crime and the Protocols Thereto*, Italy, 2004.

ing the free exercise of voting or collecting votes for themselves or others during elections.

Scholars have proposed various definitions of organized crime to encompass the different aspects of this multidimensional and evolving phenomenon<sup>3</sup>, including the numerous activities and the structures used by criminal groups<sup>4</sup>.

Organized crime involves criminal activities carried out by groups seeking material gain through extreme violence and the corruption of public officials, including law enforcement and judicial officers. Europol states that nearly 60 percent of criminal organizations are involved in corruption<sup>5</sup>.

Mafia-related activities include extortion, racketeering, gambling, prostitution, drug and human trafficking, money laundering, murder, political influence, protecting infiltrated or colluding firms from new market entrants, and awarding public contracts to firms controlled by criminal groups<sup>6</sup>.

Given the variety of activities carried out by these criminal groups, their clandestine nature, and the various organizational structures they employ, organized crime is a complex, multifaceted, and interdisciplinary phenomenon. Therefore, no single aspect can fully represent its presence, and various factors need to be considered. Scholars have created composite

<sup>3</sup> U. SANTINO, *Mafia and Mafia-type organizations in Italy*, in *Organized crime: World perspectives*, edited by Jay S. Albanese, Dilip K. Das, and Arvind Verma, Prentice Hall, Upper Saddle River, NJ, 2003, pp. 82-100; U. SANTINO, *Dalla mafia alle mafie: Scienze sociali e crimine organizzato*, Rubbettino, Soveria Mannelli, 2006.

<sup>4</sup> E. R. KLEEMANS, *Organized crime and places*, in *The Oxford handbook of environmental criminology*, Oxford University Press, 2018, pp. 868-882; S. D. PORTEOUS, *Organized crime impact study: Highlights*, Solicitor General Canada, 1998; K. VON LAMPE, *The ties that bind: A taxonomy of associational criminal structures*, in *Illegal entrepreneurship, organized crime and social control: Essays in Honor of Professor Dick Hobbs*, Cham: Springer International Publishing, pp. 19-35.

<sup>5</sup> EUROPOL, SOCTA 2021, European Union, Serious and Organised Crime Threat Assessment. *A Corrupting Influence: The Infiltration and Undermining of Europe's Economy and Society by Organised Crime*, 2021, p. 21.

<sup>6</sup> D. ACEMOGLU, G. DE FEO and G. DE LUCA, *Social conflict, mafia, and state capacity*, in American Economic Association 2017, Annual Meeting, 2017; A. ALESINA, S. PICCOLO and P. PINOTTI, *Organized crime, violence, and politics*, in *The Review of Economic Studies*, 86(2), 2019: 457-499; J. ARSOVSKA, *Organized crime*, in J. ALBANESE (Ed.), *Encyclopedia of Criminology and Criminal Justice*, Wiley-Blackell, New York, NY, 2014; C. ASTARITA, C. CAPUANO and F. PURIFICATO, *The macroeconomic impact of organised crime: A post-Keynesian analysis*, in *Economic Modelling*, 2018, Vol. 68: 514-528; O. BANDIERA, *Land reform, the market for protection, and the origins of the sicilian mafia: Theory and evidence*, in *Journal of Law, Economics and Organization*, Vol. 19, 2003: 218-244; D. GAMBETTA, *The Sicilian Mafia. The Business of Private Protection*, Cambridge Mass.: Harvard University Press, 1993; K. A. KONRAD and S. SKAPERDAS, *The Market for Protection and the Origin of the State*, in *Economic Theory*, 50, 2012: 417-443.

indicators to measure multiple illegal activities and characteristics of these organizations in each geographic area, thereby evaluating their presence and influence.

Organized crime engages in illegal activities that are often concealed, infrequently reported, and remain unnoticed, with many reported cases unpunished. This creates challenges in measuring the extent of these criminal organizations. Consequently, victimization surveys frequently underestimate the presence of criminal organizations in each area. Victims often hesitate to report crimes such as threats, extortion, or intimidation because they fear retaliation from criminal groups and potential legal consequences. On the contrary, they share their opinions on the issue by mentioning illegal activities they've heard about that affected other entrepreneurs.

Estimating the presence of organized crime in each area based on the perceptions of potential and current victims not only helps avoid errors when evaluating this phenomenon but also is valuable because perception has real effects on the behavior and choices of individuals, businesses, and institutions. For example, consider how perceived organized crime influences people's decisions about new business locations, investment strategies, the development of new facilities or stores, and the choices made by public agencies regarding spending, contracts, and procurement. For these reasons, perception indicators of organized crime are becoming more common and complement the ones used to measure the presence of these groups in the area. Additionally, estimating the presence of organized crime based on operators' perceptions helps us avoid distortions that can result from relying solely on objective indicators, such as the number of crimes committed. These indicators might cause inaccuracies because some crimes could be unreported by victims or wrongly attributed to mafia groups, even if ordinary criminals committed them (referred to as micro-criminality), and vice versa.

Organized crime is not uniformly distributed across regions, nor within provinces. Therefore, assessing the mafia at the regional or even provincial level is too broad, as it encompasses areas that are diverse in terms of mafia presence. Then, it is suitable to analyze this phenomenon at the municipal level. In this chapter, we explore several indicators, including a composite indicator (CI) of mafia presence at the municipal level<sup>7</sup>.

Crime is an evolving phenomenon. Over time, its intensity in each region changes, as do the types of criminal activities and the methods used

<sup>7</sup> Mentioned A. F. FORGIONE and C. MIGLIARDO, *The Mafia's Economic Grip: Firm Efficiency and a Composite Indicator of Organized Crime*.

to commit them. Therefore, this assessment must consider data spanning several years.

All aspects discussed should be evaluated when estimating the presence of organized crime in the context.

The following paragraphs review several key indicators used to evaluate the mafia's presence and perception.

## 2.3. Indicators of organized crime

As criminal organizations evolve, estimating the presence of the mafia in a territory requires analyzing data over multiple years. However, some studies are limited by their reliance on annual data to assess this phenomenon. This refers to indicators developed by Eurispes (Mafia Penetration Index)<sup>8</sup>, Centorrino and Ofria<sup>9</sup>, Lavezzi<sup>10</sup>, and Mennella<sup>11</sup>. In contrast, the indices calculated by Daniele and Marani<sup>12</sup> and Censis<sup>13</sup> do not have this limitation because they consider data from three or four years.

### *The Organized Crime Indicator (OCI) by ISTAT*

The Organized Crime Indicator (OCI) by ISTAT<sup>14</sup> is calculated at the regional level. It shows the change in organized crime activity in each Italian region compared to the 1995 level, using a scale of 100 (where the measure for organized crime in 1995 is set at 100). While it helps understand how this phenomenon has developed over time in each region of our country, it does not enable comparisons between regions. Additionally, it is a rough indicator because it is calculated at the regional level and therefore

<sup>8</sup> EURISPES, *16° Rapporto Italia*, 2004; EURISPES, *17° Rapporto Italia*, 2005; EURISPES, *19° Rapporto Italia*, 2007; EURISPES, *20° Rapporto Italia*, 2008; EURISPES, *22° Rapporto Italia*, 2010.

<sup>9</sup> M. CENTORRINO and F. OFRIA, *Criminalità organizzata e produttività del lavoro nel Mezzogiorno: un'applicazione del modello "Kaldor-Verdoorn"*, in *Rivista economica del Mezzogiorno*, 22.1, 2008: 163-188.

<sup>10</sup> A. M. LAVEZZI, *Economic structure and vulnerability to organised crime: Evidence from Sicily*, in *Global Crime*, 9(3), 2008: 198-220.

<sup>11</sup> A. MENNELLA, *Reti sociali, criminalità organizzata e mercati locali del lavoro*, University of Sassari, 2009.

<sup>12</sup> V. DANIELE and U. MARANI, *Organized crime, the quality of local institutions and FDI in Italy: A panel data analysis*, in *European Journal of Political Economy*, 27(1), 2011: 132-142.

<sup>13</sup> CENSIS, *Il condizionamento delle mafie sull'economia, sulla società e sulle istituzioni del Mezzogiorno*, Censis, Roma, settembre 2009.

<sup>14</sup> ISTAT, *Indicatori di contesto chiave e variabili di rottura*, September 2010.

overlooks the diversity within regions concerning the presence of organized crime. Furthermore, the bias also comes from including variables that measure crimes not exclusively related to organized crime. This shows they also record data on criminal acts such as assaults, arson, and serious robberies, which can be committed by individuals not connected to mafia clans.

However, some studies assess organized crime more accurately by measuring it at the provincial level<sup>15</sup>. Even more detailed indicators include those estimating the extent of criminal organizations in Italy at the municipal level.

### *The Mafia Presence Index (MPI) by Transcrime*

The Mafia Presence Index (MPI) by Transcrime<sup>16</sup> combines various aspects of organized crime activity at the municipal scale and distinguishes between Italian mafia-type organized crime groups such as the Cosa Nostra (Sicily), Camorra (Campania), 'Ndrangheta (Calabria), and Sacra Corona Unita (Apulia). It also provides a highly accurate estimate of mafia presence because it is a composite indicator that combines several key indicators: reports of mafia association, mafia-related murders and attempted murders, municipalities or public authorities dissolved due to organized crime infiltration, confiscated assets, and active groups reported by the National Anti-Mafia Directorate ("Direzione Nazionale Antimafia" – DNA) and the Anti-Mafia Investigation Directorate ("Direzione Investigativa Antimafia" – DIA). A statistically significant link with organized crime in the region has been identified for all these variables.

Some research is limited in estimating organized crime, mainly focusing on a single aspect, such as homicides, mafia-related murders, mafia criminal organizations, or city councils dissolved due to mafia infiltration. This approach fails to capture the full scope of this multidimensional phenomenon<sup>17</sup>.

<sup>15</sup> F. CALDERONI and S. CANEPPELE (Eds.), *La geografia criminale degli appalti. Le infiltrazioni della criminalità organizzata negli appalti pubblici nel Sud Italia: Le infiltrazioni della criminalità organizzata negli appalti pubblici nel Sud Italia*, FrancoAngeli, Milano, 2009; Mentioned CENSIS, *Il condizionamento delle mafie sull'economia, sulla società e sulle istituzioni del Mezzogiorno*; Mentioned V. DANIELE and U. MARANI, *Organized crime, the quality of local institutions and FDI in Italy: A panel data analysis*; mentioned EURISPES, *16° Rapporto Italia*; EURISPES, *17° Rapporto Italia*; EURISPES, *19° Rapporto Italia*; EURISPES, *20° Rapporto Italia*; EURISPES, *22° Rapporto Italia*; mentioned A. MENNELLA, *Reti sociali, criminalità organizzata e mercati locali del lavoro*.

<sup>16</sup> TRANSCRIME, Progetto PON sicurezza, 2007-2013, *Gli investimenti delle mafie, Rapporto Linea 1*, Ministero dell'Interno, Milano, 2013.

<sup>17</sup> G. BARONE and G. NARCISO, *The effect of mafia on public transfers*, Presented at the Economia informale, evasione fiscale e corruzione, Pavia, 2012; mentioned M.

Other studies estimate the mafia's presence by examining composite indicators that consist of multiple variables, each highlighting a specific aspect of organized crime<sup>18</sup>, such as the Mafia Presence Index proposed by Transcrime. Below, we review several composite indicators in chronological order.

### *The Mafia Index (MI) by Calderoni*

Calderoni<sup>19</sup> introduces a composite indicator (CI) calculated at the provincial level, called the *Mafia Index* (MI), focusing on four key characteristics of the mafia as outlined in Article 416-bis and some definitions proposed by scholars:

- Presence of criminal groups providing illegal goods and services.
- Use of violence, threats, or intimidation.
- Infiltration of the political system.
- Infiltration of the economic system.

To consider the features mentioned above, he has included the following four variables in the Mafia Index:

- Mafia-type associations.
- Mafia murders.
- Municipal councils dissolved due to mafia infiltration.
- Assets confiscated from organized crime.

CENTORRINO and F. OFRIA, *Criminalità organizzata e produttività del lavoro nel Mezzogiorno: un'applicazione del modello "Kaldor-Verdoorn"*; N. D. CONIGLIO, G. CELI and C. SCAGLIUSI, *Organized Crime, Migration and Human Capital Formation: Evidence from the South of Italy* (Working paper No. 0028), Università degli studi di Bari, Bari, 2010; P. PINOTTI, *The economic costs of organised crime: Evidence from Southern Italy*. The Economic Journal, 125(586), 2015: F203-F232; L. M. SOLIVETTI, *Crime patterns between tradition and change: A territorial analysis of the Italian Provinces*, in Social Indicators Research, 128(2), 2016: 531-558.

<sup>18</sup> Mentioned A. MENNELLA, *Reti sociali, criminalità organizzata e mercati locali del lavoro*; A. ASMUNDO, *Indicatori e costi di criminalità mafiosa*, in R. SCIARRONE (Ed.), *Alleanze nell'ombra. Mafie ed economie locali in Sicilia e nel Mezzogiorno*, Donzelli Editore, Rome, 2011, pp. 49-66; C. CAPUANO and F. PURIFICATO, *The Macroeconomic Impact of Organized Crime, a Neo-Kaleckian Perspective*, 2012, July, retrieved from [https://mpira.ub.uni-muenchen.de/40077/1/MPRA\\_paper\\_40077.pdf](https://mpira.ub.uni-muenchen.de/40077/1/MPRA_paper_40077.pdf); M. CAGLAYAN, A. FLAMINI and B. JAHANSHAH, *Organized crime and technology*, DEM working papers series no. 136: University of Pavia, Department of Economics and Management, Pavia, 2017; Mentioned R. GANAU and A. RODRÍGUEZ-POSE, *Industrial clusters, organized crime, and productivity growth in Italian SMEs*.

<sup>19</sup> F. CALDERONI, *Where is the mafia in Italy? Measuring the presence of the mafia across Italian provinces*, in Global Crime, 12(1), 2011: 41-69; F. CALDERONI, *The Mafia Index. A measure of the presence of the mafia across Italian provinces*, in Research Conferences on Organised Crime at the Bundeskriminalamt in Germany 2008-2010, Luchterhand, 2011, pp. 141-162.



Additionally, the author established indicators based on three criteria: data availability over an extended period and content validity.

This index spans a broad period (1983-2010) and includes data from all 103 Italian provinces. It ranges from 0 to 100 and is calculated as the arithmetic mean of the normalized ranks of the provinces for the rates of the four variables mentioned above.

*The Mafia Presence Index (MPI) by Dugato, Calderoni and Campedelli*

Dugato, Calderoni, and Campedelli<sup>20</sup> proposed a composite indicator called the Mafia Presence Index (MPI).

This index measures the mafia’s presence using a set of core and alternative indicators to estimate four fundamental features of the mafia (see Tab. 8).

*Tab. 8 - The mafia indicators (Dugato, Calderoni, and Campedelli, 2020)*

<i>Dimensions</i>	<i>Core indicators</i>	<i>Alternative indicators</i>
Presence and activities	Mafia groups mentioned in the DIA and DNA reports Reported offences for mafia association	Reported: Criminal associations Usury Smuggling of goods Associations for drug trafficking Associations for drug dealing Exploiting of prostitution
Violence		Reported: Kidnapping for ransom Extortion Arson (excluding brush fire) Damage followed by arson Bomb fire attacks
Political infiltration	City councils and Public Administrations dissolved for mafia infiltration	Alternative indicators
Economic infiltration	Assets confiscated from organized crime	Reported money laundering offences

*Source:* M. DUGATO, F. CALDERONI, and G. M. CAMPEDELLI, 2020.

<sup>20</sup> M. DUGATO, F. CALDERONI and G. M. CAMPEDELLI, *Measuring organised crime presence at the municipal level*, in Social Indicators Research, 147(1), 2020: 237-261.

The authors conducted a factor analysis using the principal component extraction method. All key indicators were normalized by indexing them to their maximum values, enabling comparison among variables with different units of measurement. In detail, the municipality with the highest value received a score of 100 for each indicator, with all other values scaled proportionally. “Active Mafia Groups” is the indicator that most significantly influences the final ranking, followed by “Confiscated Assets”.

They found that the mafia presence index is negatively correlated with the most popular quality of life indices calculated by Il Sole 24 Ore and Italia Oggi.

#### *The Mafia Presence Index by Mocetti and Rizzica*

According to the composite indicator developed by Mocetti and Rizzica<sup>21</sup>, the assessment of mafia presence uses a multidimensional approach by domain, capturing various modes of organized crime activity.

Beyond objective indicators – such as mafia-style homicides, mafia association crimes, municipalities disbanded due to mafia influence, and businesses seized from the mafia-subjective indicators are also used to assess the perceived level of organized crime. These include the victimization index, perceptions of suspicious acquisitions, irregular financing, violence, and extortion. Additionally, a set of “warning indicators” reflects the mafia’s “power syndicate,” shown by intentional homicides, arson damages, bombings, and extortion cases, as well as the “enterprise syndicate” of criminal organizations, which covers activities like sex trafficking, drug production and distribution, smuggling, and money laundering.

## **2.4. Subjective and indirect indicators of organized crime**

Subjective indicators based on perceptions of organized crime, along with indicators of so-called “spy crimes”, reveal the power of the syndicate (control of territory) and business syndicate (control of businesses) within mafia groups. These indicators assess the level of organized crime presence, or (more accurately) perception, by interviewing entrepreneurs to gather indirect experiences that have influenced the choices and behavior of their competitors, other companies (suppliers, dealers, enterprise partners), and public officials. This approach helps overcome the limitations

<sup>21</sup> S. MOCETTI and L. RIZZICA, *Organized crime in Italy: An economic analysis*, in Italian Economic Journal, 10(3), 2024: 1339-1360.

caused by fear of retaliation or potential legal consequences when answering questions.

The perception of organized crime involves, on one hand, the intensity and geographical spread of these groups, and on the other hand, the ability of institutions to fight them through prevention and repression carried out by law enforcement and the judiciary. Based on this idea, several indicators of institutional quality have been proposed, including measures such as the rule of law and corruption indices, which demonstrate the effectiveness of the institutions' response to crime.

An indicator of the quality of institutions is the World Governance Indicator (WGI) proposed by Kaufmann et al.<sup>22</sup> (2010). This composite indicator has been used to evaluate institutional quality across 213 countries from 1996 to 2010. It is divided into six dimensions that address key qualitative characteristics of a nation's institutions:

- Voice and accountability.
- Political stability and absence of violence and terrorism.
- Effectiveness of government.
- Quality of regulation.
- Rule of law.
- Control and corruption.

Simple indices assess each aspect of institutional quality across all six areas mentioned earlier.

Two indicators are relevant to this study:

- “rule of law”, which refers to contractual compliance, property rights, police effectiveness, judicial activity, and crime levels,
- and “control and corruption,” which relates to individuals performing public functions to gain illicit benefits at society's expense.

According to the European Court of Justice and the European Court of Human Rights, the rule of law consists of the following six principles: “legality implying a transparent, accountable, democratic and pluralistic process for enacting laws, legal certainty, prohibition of the arbitrary exercise of executive power, effective judicial protection by independent and impartial courts with effective judicial review including respect for fundamental rights, separation of powers, and equality before the law”<sup>23</sup>.

<sup>22</sup> D. KAUFMANN, A. KRAAY and M. MASTRUZZI. *The Worldwide Governance Indicators: Methodology and Analytical Issues*, Policy Research Working Paper Series Number 5430. The World Bank, Washington, DC, 2010.

<sup>23</sup> Source: [https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/upholding-rule-law/rule-law/what-rule-law\\_en](https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/upholding-rule-law/rule-law/what-rule-law_en).

The rule of law is a fundamental principle of the European Union, as outlined in Article 2 of the Treaty on European Union. Ensuring that EU law is applied uniformly across all Member States is essential for establishing a single market that facilitates the free movement of goods, capital, and people in Europe. Additionally, the rule of law underpins the effective implementation of EU laws and policies while promoting principles of equality, equal opportunities, and social justice within the European Union<sup>24</sup>.

According to the WGI framework, Nifo and Vecchione<sup>25</sup> developed a composite Indicator of the Quality of Institutions (IQI) that aggregates indices related to five dimensions at the provincial level:

- “Voice and accountability capture the participation in public elections, the phenomenon of associations, the number of social cooperatives and cultural liveliness measured in terms of books published and purchased in bookshops.
- Government effectiveness instead measures the endowment of social and economic structures in Italian provinces and the administrative capacity of provincial and regional governments in relation to policies concerning health, waste management and the environment.
- Regulatory quality comprises information concerning the degree of openness of the economy, business environment and, hence, the ability of local administrators to promote and protect business activity.
- Rule of law summarizes data on crime against persons or property, on magistrate productivity, trial times, the degree of tax evasion and the shadow economy.
- Corruption summarizes data on (1) crimes committed against the public administration, (2) the number of local administrations overruled by the federal authorities, (3) and the Golden-Picci Index<sup>26</sup>, measuring the corruption level on the basis of the difference between the amounts of physically existing public infrastructure [...] and the amounts of money cumulatively allocated by government to create these public works”.

The “Rule of Law” is a composite indicator widely used in research and practice because it measures the extent to which organized crime affects a

<sup>24</sup> Source: [https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/upholding-rule-law/rule-law/what-rule-law\\_en](https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/upholding-rule-law/rule-law/what-rule-law_en).

<sup>25</sup> A. NIFO and G. VECCHIONE, *Do institutions play a role in skilled migration? The case of Italy*, in *Regional studies*, 48(10), 2014: 1628-1649.

<sup>26</sup> M. A. GOLDEN and L. PICCI, *Proposal for a new measure of corruption, illustrated with Italian data*, in *Economics and Politics*, 17, 2005: 37-75.

community. These effects stem from a power struggle between state institutions enforcing the rule of law and criminal organizations. The negative impacts of crime in any region depend on two factors: first, the extent of criminal presence and its ability to intimidate and generate illegal income, and second, the state's capacity to counteract these organizations' activities by maintaining the rule of law through crime prevention and punishment. Therefore, all other factors being equal, the community, businesses, and public administration are less harmed when the state's response effectively upholds the rule of law, and more harmed when it does not.

The composite indicator "Corruption" is also relevant for this study because corrupt practices are often, but not always, conducted by mafia groups.

## **2.5. The composite mafia index estimated by Forgione and Migliardo as part of the PRIN PNRR project**

In the context of the mentioned PRIN PNRR research project, Forgione and Migliardo<sup>27</sup> developed the Mafia Index, a composite indicator (CI) constructed using the Robust Multi-directional Benefit of the Doubt (RMdirBoD) approach, to quantify the presence of organized crime at the municipal level.

This CI addresses the limitations of single-indicator analyses by aggregating multiple dimensions of criminal activity, thereby increasing reliability and reducing susceptibility to data anomalies and outliers. By synthesizing twelve normalized indicators scaled to population size, the index enables robust cross-regional comparisons, a significant advance over traditional methods, which often fail to capture the complexity of organized crime. It incorporates eight crime categories emblematic of mafia activity: mafia association, mafia-style assault, arson, extortion, mafia-style homicide, attempted mafia-style homicide, money laundering, and extortion. These are supplemented by four institutional measures: the number of active clans, business/property seizures, and the dissolution of municipal councils due to mafia infiltration. This index's strength lies in its ability to combine fragmented data on a single type of crime into a unified framework.

This multidimensional design captures both direct criminal activities and institutional countermeasures, providing a nuanced assessment of the socio-economic impact of organized crime.

<sup>27</sup> Mentioned A. F. FORGIONE and C. MIGLIARDO, *The Mafia's Economic Grip: Firm Efficiency and a Composite Indicator of Organized Crime*.

By standardizing indicators based on municipality population, the CI ensures data comparability across different geographic areas, from densely populated cities to rural regions. The methodology used by the CI aims to minimize distortions from isolated metrics while highlighting spatial patterns of criminal influence.

This indicator reduces the under-reporting bias common in crime statistics, as victims and businesses in high-risk areas often refrain from reporting crimes due to fear of retaliation<sup>28</sup>. The data were sourced through innovative methods, including text mining of news articles related to the mafia from ANSA, Italy's national press agency, to track crime patterns; official reports from the Anti-Mafia Investigation Directorate (DIA) on clan presence; and web scraping of the National Agency for Confiscated Assets (ANBSC) database for seizure records.

A key strength of this CI is that it provides a granular assessment of organized crime distribution at the municipal level. This overcomes the limitation of other similar indicators that measure organized crime only at the provincial level. Estimates at the provincial level tend to be oversimplified because they assume a uniform distribution of criminal organizations across large areas, such as provinces. This reduces the practical usefulness of these estimates for guiding targeted public policies to combat this phenomenon and for tailored law enforcement and judicial actions in areas with higher mafia activity. This CI, in turn, helps support targeted policies, law enforcement, and judicial interventions.

The authors demonstrated the practical usefulness of this CI in assessing the impact of organized crime on the technical efficiency of enterprises through a one-step stochastic frontier analysis. In Chapter 4, paragraph 4.4, we will refer to the application of the CI they performed to assess the impact of organized crime on the technical efficiency of firms in the civil engineering industry.

## **2.6. Indicators of the spread of organized crime and the territory's vulnerability to mafia infiltration**

In this paragraph, we present some key cross-national indices of organized crime presence, along with indicators of how vulnerable (or permeable) territories and the legal economy are to mafia infiltration.

<sup>28</sup> P. PINOTTI, *The Credibility Revolution in the Empirical Analysis of Crime*, in *Italian Economic Journal*, 6, 2020: 401-421.

The Composite Organized Crime Index (COCI) encompasses variables that combine data on perceptions of organized crime, unsolved homicides, large-scale corruption, money laundering, and the shadow economy across more than 100 countries. This data is based on annual surveys of corporate CEOs conducted by the World Economic Forum, investment risk assessments by the Merchant International Group, studies by the World Bank Institute, and official crime report statistics<sup>29</sup>.

The Global Organized Crime Index (GOCI)<sup>30</sup> is a multidimensional index calculated by the Global Initiative Against Transnational Organized Crime (GI-TOC), an independent civil society organization headquartered in Geneva, Switzerland. It comprises a network of over 350 experts, with a Secretariat spread across various countries worldwide. This Index estimates the level of crime and resilience to organized crime for 193 countries, considering three key factors:

- The scope, scale, and impact of fifteen criminal markets are assessed: human trafficking, human smuggling, extortion and protection racketeering; arms trafficking; trade in counterfeit goods; illicit trade in excisable goods; flora crimes; fauna crimes; non-renewable resource crimes; heroin trade; cocaine trade; and cannabis trade.
- The structure and influence of five types of criminal actors: mafia-style groups, criminal networks, state-embedded actors, foreign actors, and private sector actors.
- Countries' resilience to organized crime is measured using the following indicators: political leadership and governance; government transparency and accountability; international cooperation; national policies and laws; judicial system and detention; law enforcement; territorial integrity; anti-money laundering efforts; economic regulatory capacity; victim and witness support; prevention initiatives; and non-state actors.

The Organized Crime Perception Index (OCPI) measures the level of organized crime in each country. This index is based on data from five related proxy indicators that reflect the perceived prevalence of organized crime, including extortion, drugs, arms, and human trafficking, as perceived by potential victim groups and/or independent experts. It ranks

<sup>29</sup> E. BUSCAGLIA and J. VAN DIJK, *Controlling organized crime and corruption in the public sector*, in Forum on Crime and Society, 3(1-2), 2003: 1-34; J. VAN DIJK, *Mafia markers: Assessing organized crime and its impact upon societies*, in Trends in Organized Crime, 10(4), 2007: 39-56; J. VAN DIJK, *The world of crime. Breaking the silence on problems of security, justice and development across the world*, SAGE, Thousand Oaks - London, 2008.

<sup>30</sup> GLOBAL INITIATIVE AGAINST TRANSNATIONAL ORGANIZED CRIME (GI-TOC), *Global Organized Crime Index 2023*. <https://ocindex.net/report/2023/0-3-contents.html>.



countries on a scale from 1 to 7 (1 = no organized crime, 7 = high presence of organized crime). The World Economic Forum collects information by conducting interviews with CEOs of large companies<sup>31</sup>.

A recent study shows that criminal organizations in Italy are concentrated in specific regions of Southern Italy, including Calabria (with a strong presence in Crotone, Reggio Calabria, and Vibo Valentia), Sicily (particularly in the western part of the island), Campania (notably in Caserta and Naples), and Apulia (especially in Foggia)<sup>32</sup>.

These regions hold historical significance as the areas where organized crime originated, developed, and took root. This emergence was primarily driven by the need to protect small landowners from banditry, a result of the State's inability to provide adequate protection<sup>33</sup>. In Sicily, landowners and local politicians recruited mafiosi to suppress peasant revolts against high taxation, a social dynamic that ultimately led to the emergence of the "Fasci Siciliani dei Lavoratori" movement<sup>34</sup>. In Apulia, the origins are more recent, dating back to the birth of the Sacra Corona Unita in the '1970s<sup>35</sup>.

From its origins in these regions, organized crime has expanded its influence by infiltrating businesses across Central and Northern Italy. Organized crime is particularly significant in various provinces in the Center and North, such as Rome, Genoa, and Imperia. This expansion is especially evident in provinces with higher GDP per capita and a greater dependence on public spending, which offers more investment opportunities and channels for rent extraction. The expansion of the 'Ndrangheta in Central and Northern Italy mainly affects the trade sector, which enables money laundering through entities known as "Cartiere" ("paper mills" companies). These companies issue false invoices for non-existent transactions to laun-

<sup>31</sup> Mentioned J. VAN DIJK, *Mafia markers: assessing organized crime and its impact upon societies*, in Trends in organized crime, 10, 2007: 39-56.

<sup>32</sup> Mentioned S. MOCETTI and L. RIZZICA, *Organized crime in Italy: An economic analysis*.

<sup>33</sup> Mentioned O. BANDIERA, *Land reform, the market for protection, and the origins of the sicilian mafia: Theory and evidence*; P. BUONANNO, R. DURANTE, G. PRAROLO and P. VANIN, *Poor institutions, rich mines: Resource curse in the origins of the sicilian mafia*, in The Economic Journal, 125(586), 2015: F175-F202; A. DIMICO, A. ISOPI and O. OLSSON, *Origins of the Sicilian mafia: The market for lemons*, in The Journal of Economic History, 77(4), 2017: 1083-1115; Mentioned D. GAMBETTA, *The Sicilian Mafia. The Business of Private Protection*.

<sup>34</sup> Mentioned D. ACEMOGLU, G. DE FEO and G. D. DE LUCA, *Weak states: Causes and consequences of the Sicilian Mafia*, in The Review of Economic Studies, 87(2), 2020 Mar 1: 537-581.

<sup>35</sup> Mentioned P. PINOTTI, *The economic costs of organised crime: Evidence from Southern Italy*.



der illicit funds<sup>36</sup>. These are the reasons for the global spread of criminal organizations, according to the United Nations report (UNICRI): to launder illegal proceeds, increase profits, and gain social legitimacy<sup>37</sup>.

To identify the determinants of the geographical spread of criminal organizations in the North-Central regions of Italy, Mocetti and Rizzica<sup>38</sup> analyzed the relationship between the mafia intensity index and various exogenous variables. These variables include GDP per capita, the local economy's dependence on public spending, levels of corruption, and a social capital measure indicated by voter participation in referendums. The analysis revealed a strong and statistically significant correlation between the intensity of mafia presence and GDP per capita, suggesting that wealthier areas provide more opportunities for investing illicit money into the legal economy. Additionally, the study found substantial connections between the presence of the mafia, increased dependence on public spending, and elevated corruption levels in public administration. In contrast, social capital, measured by citizen participation in referendums, was not identified as a significant factor.

Organized crime targets small and medium-sized municipalities<sup>39</sup>, with limited infrastructure and reduced foreign investment<sup>40</sup>. By using various indicators to assess this phenomenon, the mentioned study by Transcrime reveals that while the intensity of territorial control through coercion and violence (*power syndicate crimes*) is higher in Southern Italy, the geographical distribution of illegal activities (*enterprise syndicate crimes*)<sup>41</sup> is more uniform across the country.

Transcrime developed a model to evaluate the vulnerability of the legal economy to infiltration of organized crime at the provincial level for twelve economic sectors: the Mo.Vu.S.<sup>42</sup>. It employs two risk macro-factors:

<sup>36</sup> L. MIRENDA, S. MOCETTI and L. RIZZICA, *The economics effects of mafia: firm level evidence*, in American Economic Review, 112: 2748-27; A. PELLEGRINI, P. DE FRANCESCHIS, C. BENTIVOGLI and E. LAURENZA, *A synthetic indicator for identifying shell companies. working papers*, UIF, Bank of Italy, 2020.

<sup>37</sup> UNICRI, *Organized crime and the legal economy. The Italian case*, United Nations Interregional Crime and Justice Research Institute, Torino, 2016.

<sup>38</sup> Mentioned S. MOCETTI and L. RIZZICA, *Organized crime in Italy: An economic analysis*.

<sup>39</sup> M. FABRIZI, P. MALASPINA and A. PARBONETTI, *Caratteristiche e modalità di gestione delle aziende criminali*, in Rivista di Studi e Ricerche sulla criminalità organizzata, 3(1), 2017: 47-66.

<sup>40</sup> Mentioned TRANSCRIME, Progetto PON sicurezza, 2007-2013. *Gli investimenti delle mafie, Rapporto Linea 1*.

<sup>41</sup> A. BLOCK, *East side west side: organizing crime in New York 1930-1950*, University College Cardiff Press, Cardiff, 1980.

<sup>42</sup> Mentioned TRANSCRIME, Progetto PON sicurezza, 2007-2013, *Gli investimenti delle mafie, Rapporto Linea 1*.

- Rt (territorial risk), which depends on the characteristics of the territory that may facilitate the infiltration of organized crime. This risk ranges from 0 to 100.
- Rs (sector risk), which depends on the characteristics of the different sectors in the various provinces. This risk can also take on values from 0 to 100, depending on the probability of infiltration.

The calculation of these two indicators utilizes various variables, as demonstrated by the following tables<sup>43</sup>.

*Tab. 9 - Variables included in the territorial risk indicator*

Territory	Organized crime presence	No. of confiscated assets over the resident population in the province
		No. of mafia murders over the resident population in the province
		No. of charges for art. 416bis over the resident population in the province
		No. of city councils and institutions dissolved for mafia infiltration in the province
	Wealth	Amount of GDP per capita in the province
		No. of cars with more than 2000 cc over the total number of cars in the province
		Amount of taxable income over the total number of taxpayers in the province
	Shadow economy	Amount of tax evasion over the amount of IRAP added value in the province
		Ratio of the amount of tax collected over the amount of tax supposed to be collected (Tax Gap) in the province
		No. of notifications of unusual transactions over the resident population in the province
	Market structure	Expenditure on R&D in the province
		Structural equipment index in the province
		Amount of import + export over the amount of added value in the province

<sup>43</sup> E. U. SAVONA and G. BERLUSCONI (Eds.), *Organized Crime Infiltration of Legitimate Businesses in Europe: A Pilot Project in Five European Countries*. Final Report of Project ARIEL – Assessing the Risk of the Infiltration of Organized Crime in EU MSs Legitimate Economies: a Pilot Project in 5 EU Countries ([www.ariel-project.eu](http://www.ariel-project.eu)). Trento: Transcrime – Università degli Studi di Trento, 2015: 117-118.

Tab. 9 bis - Variables included in the sector risk indicator

Economic sector	Business size	No. of local units with up to 5 employees over the total number of local units in a given economic sector and province
	Crisis	No. of bankruptcies over the total number of active businesses in a given economic sector and province
	Competitiveness	No. of active businesses in a given economic sector and province over the resident population in the province
		Amount of added value in a given economic sector and province over the number of active businesses in the economic sector and province
		No. of notifications of unusual transactions over the resident population in the province
	Previous infiltration	No. of confiscated businesses in a given economic sector and province over the number of active businesses in the economic sector and province

The normalization process assigned a score of 100 to the province with the highest value, while proportionally lower scores were given to the others, ensuring a minimum score of 0 for the province with the lowest value. The indicators were calculated as the average of the normalized variables. The final infiltration risk indices for the territory (Rt) and the sector (Rs) were obtained by aggregating the corresponding normalized indicators using the generalized average method.

Eurispes developed the Index of Territorial Permeability to Organized Crime (IPCO)<sup>44</sup>. This index is calculated at the provincial level by combining 163 elementary indicators into 19 composite indices to evaluate the area’s potential vulnerability to organized crime, rather than its actual presence.

This index is limited because it relies on data collected over just one year, which is too short a timeframe to construct an accurate index, especially considering that organized crime activities can change significantly over time, posing challenges for conducting trend analyses. Furthermore, it uses data in absolute values, which hinders meaningful comparisons between different regions, as the varying population sizes of the respective cities influence these.

<sup>44</sup> EURISPES, *Indice di Permeabilità dei territori alla Criminalità Organizzata (IPCO) 2020*. <https://eurispes.eu/ricerca-rapporto/indice-di-permeabilita-dei-territori-alla-criminalita/>.

Mazzitelli<sup>45</sup> proposed a composite indicator calculated by aggregating the following five groups of vulnerability indicators for each province:

1. Vulnerability infrastructural indicators.
2. Organized crime indicators.
3. Economic illegal activity (or organized crime) infiltration indicators.
4. Enterprise vulnerability indicators.
5. Family vulnerability indicators.

Each of these indicators was calculated by considering multiple variables.

Transcrime developed Ris.I.C.O. (Risk of Infiltration by Organized Crime), a model that estimates the risk of infiltration into specific public procurement processes using indicators identified through interviews with national authorities, prefectures, and case studies<sup>46</sup>. This model uses indicators to evaluate the risk of organized crime infiltration in public procurement, categorized into five specific risk profiles: territory, contract, business, business staff, and other risk indicators.

<sup>45</sup> A. MAZZITELLI, *Vulnerabilità del territorio e criminalità organizzata*, Universitas Mercatorum, Roma, 2014.

<sup>46</sup> TRANSCRIME-MINISTERO DELL'INTERNO, *Implementazione analisi criminale - Ris.I.C.O.* Roma, 2008.



### 3.

## THE INFILTRATION OF ORGANIZED CRIME INTO THE ECONOMY AND FIRMS

### 3.1. Introduction

This chapter addresses the infiltration of the mafia into the economy and businesses.

After outlining the revenue generated from various illegal activities and the spread of organized crime worldwide, in Europe, and Italy, we provide data on its social and economic impact on society, the economy, and businesses.

Mafia harms society by originating costs resulting from criminal activities and responses to them, and hindering growth, employment, and value-added productivity among businesses. The adverse institutional and socioeconomic environment created by the mafia also affects legitimate companies, distorting and limiting competition, altering pricing mechanisms, extorting money, violating labor, safety, and environmental regulations, and manipulating public procurement to its advantage.

Besides making profits through formally lawful companies, the mafia infiltrates the economy and businesses to launder illegal money. Although money laundering is not exclusive to organized crime, it is a core activity of the mafia because the large amounts of illicit funds cannot be spent until they are cleaned through the legal economy. Therefore, this chapter dedicates significant space to this illegal practice, the framework for counteracting it in Italy, and the new strategies and activities criminal groups have adopted in the Digital Age to evade investigations and detection of financial transactions intended to launder illicit funds.

The infiltration of organized crime into institutions and society also hinders the economic and socioemotional well-being and happiness of individuals, influencing their voting decisions in elections and causing many young people to emigrate in search of better social and institutional conditions. The mafia also infiltrates institutions, affecting elections through its

corruptive and intimidating power. Although they have a significant societal impact, we will only briefly discuss these crucial aspects of the impact of the mafia infiltration into society and economy because this book focuses primarily on the effects it has on corporate performance. This is a limitation of this chapter.

### 3.2. Mafia revenues

Estimating the revenues and profits generated by organized crime is challenging for several reasons. First, due to the clandestine nature of its illicit activities. Second, it is often hard to distinguish between companies that operate legally and those involved in criminal activities, as over 80% of criminal networks use seemingly legitimate businesses for their illicit operations<sup>1</sup>. Third, criminal businesses often collaborate with legitimate companies<sup>2</sup>. Finally, some businesses engage in illegal activities without any affiliation to organized crime; therefore, it is possible to mistakenly attribute criminal activities not carried out by the mafia to organized crime.

The United Nations Office on Drugs and Crime (UNODC) provides the most comprehensive estimates of transnational criminal revenues for 2009, amounting to \$2.1 trillion, which accounted for around 3.6 percent of GDP. Specifically, organized crime revenues were estimated at \$870 billion globally, accounting for approximately 1.5 percent of the global GDP<sup>3</sup>.

In 2019, the global revenue from transnational crime hit US\$4 trillion, equal to 4.7% of global GDP<sup>4</sup>.

<sup>1</sup> Mentioned EUROPOL, SOCTA 2021, European Union, Serious and Organised Crime Threat Assessment, *A Corrupting Influence: The Infiltration and Undermining of Europe's Economy and Society by Organised Crime*, 21.

<sup>2</sup> L. DI BONO, S. CINCIMINO, M. RICCARDI and G. BERLUSCONI, *Management strategies of infiltrated businesses*, in E. U. SAVONA and G. BERLUSCONI (Eds.), *Organized crime infiltration of legitimate businesses in Europe: A pilot project in five European countries*, Transcrime - Università degli Studi di Trento, Trento, 2015, pp. 102-112; E. FANTÒ, *L'impresa a partecipazione mafiosa. Economia legale ed economia criminale*; SARNO F., *Control strategies of infiltrated businesses*, in E. U. SAVONA and G. BERLUSCONI (Eds.), *Organised crime infiltration of legitimate businesses in Europe: A pilot project in five European countries*, Transcrime - Università degli Studi di Trento, Trento, pp. 90-101.

<sup>3</sup> UNODC (United Nations Office on Drugs and Crime), *Estimating Illicit Financial Flows Resulting from Drug Trafficking and Other Transnational Organized Crimes: Research Report*, Vienna, 2011, p. 127. [www.unodc.org/documents/data-and-analysis/Studies/Illicit\\_financial\\_flows\\_2011\\_web.pdf](http://www.unodc.org/documents/data-and-analysis/Studies/Illicit_financial_flows_2011_web.pdf).

<sup>4</sup> THE MILLENNIUM PROJECT, *Global Challenge*, 12, 2021. <https://www.millennium-project.org/challenge-12/>. Accessed 10 February 2023.

Drug trafficking is the most lucrative criminal activity, valued at approximately \$320 billion each year worldwide<sup>5</sup>. However, organized crime globally also earns huge profits from other crimes:

- Human trafficking includes the sexual or labor exploitation of individuals, including men, women, and children. In 2005, approximately 2.4 million victims were affected by this crime, generating annual profits of around \$32 billion<sup>6</sup>.
- In 2009, migrant trafficking generated about \$6.6 billion from the illegal smuggling of €3 million migrants from Latin America to North America. In the previous year, 55,000 migrants were smuggled from Africa to Europe, earning a profit of \$150 million<sup>7</sup>.
- The illegal firearms trade generates an estimated annual revenue between \$170 million and \$320 million<sup>8</sup>.
- Trafficking in natural resources, such as diamonds, rare metals, and timber<sup>9</sup>.
- The illegal trade of wild animals, fish, plants, counterfeit goods, and medicines<sup>10</sup>.
- Cybercrime spans several areas, but one of the most profitable for criminals is identity theft targeting bank accounts, which generates \$1 billion each year<sup>11</sup>.

A recent study across six private sectors – financial services, technology, consumer goods and trade, construction and real estate, transportation and logistics, and natural resources – found that the scale of organized crime ranged between \$3.6 and \$4.8 trillion for 2015/2016, which is equivalent to 7% of global GDP. This includes money laundering (between \$1.5 and \$2 trillion), counterfeit and contraband (between \$0.5 and \$1 trillion),

<sup>5</sup> UNODC (United Nations Office on Drugs and Crime), *World Drug Report 2011* (United Nations publication, Sales No. E.11.XI.10). Available from [www.unodc.org/wdr](http://www.unodc.org/wdr).

<sup>6</sup> INTERNATIONAL LABOUR OFFICE, *A Global Alliance against Forced Labour: Global Report under the Follow-up to the ILO Declaration on Fundamental Principles and Rights at Work* (Geneva, ILO, 2005). Available from [www.ilo.org/wcmsp5/groups/public/@ed\\_norm/@declaration/documents/publication/wcms\\_081882.pdf](http://www.ilo.org/wcmsp5/groups/public/@ed_norm/@declaration/documents/publication/wcms_081882.pdf).

<sup>7</sup> UNODC (United Nations Office on Drugs and Crime), *The Globalization of Crime: A Transnational Organized Crime Threat Assessment* (United Nations publication, Sales No. E.10.IV.6.2010). Available from [www.unodc.org/documents/data-and-analysis/tocta/TOCTA\\_Report\\_2010\\_low\\_res.pdf](http://www.unodc.org/documents/data-and-analysis/tocta/TOCTA_Report_2010_low_res.pdf).

<sup>8</sup> UNODC (United Nations Office on Drugs and Crime), *2011 Global Study on Homicide: Trends, Contexts, Data* (2011). Available from [www.unodc.org/documents/data-and-analysis/statistics/Homicide/Globa\\_study\\_on\\_homicide\\_2011\\_web.pdf](http://www.unodc.org/documents/data-and-analysis/statistics/Homicide/Globa_study_on_homicide_2011_web.pdf).

<sup>9</sup> Mentioned UNODC (United Nations Office on Drugs and Crime), *The Globalization of Crime: A Transnational Organized Crime Threat Assessment*.

<sup>10</sup> Ibidem.

<sup>11</sup> Ibidem.



fraud and corruption (\$1 trillion), cybercrime (between \$0.5 and \$0.7 trillion), and asset misappropriation (\$0.1 trillion)<sup>12</sup>.

In the European Union Transcrime estimates that organized crime generates at least €110 billion each year, which is equivalent to 0.9% of the EU's GDP for 2010<sup>13</sup>. The European Public Prosecutor's Office (EPPO) annual report for 2023 highlights that 17.5% of active investigations are linked to VAT fraud, which accounts for 59% (€11.5 billion) of the overall fraud estimated. This type of fraud is often used to launder money from illicit activities. Furthermore, there are over 200 investigations connected to funding from NextGenerationEU, which is estimated to exceed €1.8 billion. Overall, the EPPO has requested the seizure of more than €1.53 billion, and a seizure of €1.5 billion has been authorized<sup>14</sup>.

The International Monetary Fund's (IMF) Report on Anti-Money Laundering and Combating the Financing of Terrorism<sup>15</sup> presents data on all criminal activities – not just those committed by organized crime – by considering various sources, as no official estimate is available in our country. It indicates that for 2014, the range was between 1.7% and 12% of Italy's GDP, corresponding to illicit revenues between €27.5 billion and €194.4 billion. These revenues are classified into three categories:

1. Tax and excise evasion account for about 75% of all criminal proceeds. The primary sources are income tax evasion and VAT fraud. Tax evasion is more prevalent in southern Italy, while the highest amounts originate from the north.
2. Drug trafficking and loan sharking together constitute approximately 15% of the total.
3. Additional crimes, including corruption, bribery, fraud, counterfeiting, product piracy, environmental crime, robbery, theft, smuggling, extortion, and illegal gambling, account for around 10% combined.

The above-mentioned IMF report highlights that most crimes in points 2 and 3 are closely linked to mafia-type organized crime structures,

<sup>12</sup> R. CARTWRIGHT and F. C. BONES, *Transnational organized crime and the impact on the private sector: The hidden battalions*, Global Initiative against Transnational Organized Crime, Geneva, 2017.

<sup>13</sup> E. U. SAVONA and M. RICCIARDI (Eds.), *From Illegal Markets to Legitimate Businesses: The Portfolio of Organised Crime in Europe*, Final Report of Project OCP - Organised Crime Portfolio, Transcrime - Università degli Studi di Trento, Trento, 2015.

<sup>14</sup> EUROPEAN PUBLIC PROSECUTOR'S OFFICE, *EPPO Annual Report 2023*, Luxembourg: Publications Office of the European Union, 2024. Available from [https://www.epppo.europa.eu/sites/default/files/2024-03/EPPO\\_Annual\\_Report\\_2023.pdf](https://www.epppo.europa.eu/sites/default/files/2024-03/EPPO_Annual_Report_2023.pdf).

<sup>15</sup> INTERNATIONAL MONETARY FUND. LEGAL DEPT, *Italy: Detailed Assessment Report on Anti-Money Laundering and Combating the Financing of Terrorism*, 2016, pp. 17-18.

such as the Camorra, 'Ndrangheta, Sacra Corona Unita, Cosa Nostra, and Stidda.

Regarding Italy, ISTAT estimates that in 2022, the value added by the unobserved economy, including the shadow economy and illegal activities, reached €201.6 billion, marking a 9.6% increase from the previous year. The proportion of the unobserved economy in GDP remained stable at 10.1%, up from 10.0% in 2021. Illegal activities accounted for 1% of Italy's GDP, considering only drug trafficking, prostitution, and the smuggling of cigarettes and alcohol<sup>16</sup>. While these activities are not exclusively carried out by organized crime, the mafia also engages in other forms of illicit actions, such as extortion, counterfeiting, usury, illegal waste management, and illegal betting, which are not included in this estimate. The activities of criminal organizations exceed 2% of Italy's GDP, amounting to €26 billion, primarily derived from drug trafficking (€7.7 billion), extortion (€4.8 billion), prostitution (€4.7 billion), counterfeiting (€4.5 billion), and usury (€2.2 billion)<sup>17</sup>. Because criminal organizations channel some of the proceeds from illegal activities into the legal economy<sup>18</sup>, we can infer that the overall turnover of organized crime is significantly higher than 2% of Italy's GDP.

### 3.3. The adverse effect of organized crime on society

Criminal organizations pose a significant obstacle to development<sup>19</sup>, corrupting the economy<sup>20</sup>, distorting markets and resource allocation<sup>21</sup>, and imposing relevant costs on society.

<sup>16</sup> ISTAT, *L'Economia non osservata nei conti nazionali*. Anni 2019-2022, Roma, 2024.

<sup>17</sup> Mentioned TRANSCRIME, Progetto PON sicurezza, 2007-2013, *Gli investimenti delle mafie, Rapporto Linea 1*.

<sup>18</sup> G. ARDIZZI, C. PETRAGLIA, M. PIACENZA, F. SCHNEIDER and G. TURATI, *Money laundering as a crime in the financial sector: A new approach to quantitative assessment, with an application to Italy*, in *Journal of Money, Credit and Banking*, 46(8), 2014: 1555-1590; Mentioned L. MIRENDA, S. MOCETTI and L. RIZZICA, *The economics effects of mafia: firm level evidence*.

<sup>19</sup> Mentioned M. CENTORRINO and F. OFRIA, *Criminalità organizzata e produttività del lavoro nel Mezzogiorno: un'applicazione del modello "Kaldor-Verdoorn"*; G. PERI, *Socio-cultural variables and economic success: evidence from Italian provinces 1951-1991*, in *Contributions in Macroeconomics*, 4(1), 2004: 20121025; Mentioned P. PINOTTI, *The economic costs of organised crime: Evidence from Southern Italy*.

<sup>20</sup> P. VERY and D. WILSON, *Forgotten economic actors. How pirates, mafias and other illegitimate firms shape economic systems and competition*, in *Management*, Vol. 15, No. 3, 2012: 245-252.

<sup>21</sup> K. A. KONRAD and S. SKAPERDAS, *Extortion*, in *Economica*, 65, 1998: 461-477; R. SCIARRONE, *Mafie vecchie mafie nuove*, Donzelli, Roma, 2009; CONFESERCENTI, *Le mani della criminalità sulle imprese, XIII Rapporto di Sos imprese*, Aliberti, Roma, 2012.

Estimating the overall social and economic impact of the mafia is challenging because:

- Defining the boundaries of the many criminal activities carried out by mafia-type groups is difficult.
- Data from law enforcement and judicial records capture only a part of crimes<sup>22</sup> because they are hidden<sup>23</sup>, victims are often reluctant to report crimes, and the justice system does not always identify and punish the perpetrators<sup>24</sup>.
- Criminal groups often conduct business through or in partnership with colluded (apparently law-abiding) companies that have been infiltrated by organized crime, which are not always identified by investigative authorities.

Brand and Price<sup>25</sup> categorize the costs of organized crime for society into three types. First, potential crime victims incur costs related to preventing criminal acts, including security measures, insurance, and changes in their behavior driven by fear of crime. The second type of costs resulting from criminal activity includes the direct impact on victims, such as stolen property, repairs to damaged warehouses or storage facilities, bureaucratic expenses of filing complaints, and the emotional, physical, and sometimes life-threatening consequences. Lastly, the community bears the costs of responding to crime, which encompass expenses related to law enforcement, the judiciary, lawyers, the prison system, social services, and other related services.

Using this classification, Detotto and Vannini estimated that the total social cost of crime in Italy in 2006 exceeded € 38 billion, representing approximately 2.6% of Italy's GDP. Specifically, 60.5% of the social costs result from criminal events, 27% are incurred in response to them, and 12.5% arise from crime prevention. Drug-related crimes and counterfeiting account for the highest total costs, each exceeding €7 billion<sup>26</sup>. According to some estimates, the United States has spent \$1 billion on the "War on Drugs" over the past fifty years<sup>27</sup>.

<sup>22</sup> Mentioned S. MOCETTI and L. RIZZICA, *Organized crime in Italy: An economic analysis*.

<sup>23</sup> Mentioned D. GAMBETTA, *The Sicilian Mafia. The Business of Private Protection*.

<sup>24</sup> Mentioned VAN DIJK, *Mafia markers: Assessing organized crime and its impact upon societies*.

<sup>25</sup> A. ASMUNDO, *Indicatori e costi della criminalità mafiosa. Alleanze nell'ombra*; S. BRAND and R. PRICE, *The economic and social costs of crime*, 2000.

<sup>26</sup> C. DETOTTO and M. VANNINI, *Counting the cost of crime in Italy*, in *Global Crime*, 11(4), 2010: 421-435.

<sup>27</sup> B. PEARL and M. PEREZ, *Ending the war on drugs: By the numbers*, Center for American Progress, Washington DC, 2018.

Using a panel of Italian regions from 1983 to 2009, Neanidis et al. demonstrated that organized crime hinders economic growth; however, this effect is mitigated when it is linked to corruption<sup>28</sup>.

A study on the post-war economic development of two southern Italian regions after the 1970s estimated that mafia activity resulted in a loss of approximately 16% in per capita GDP over the following thirty years<sup>29</sup>.

Organized crime also negatively affects employment, value-added, and productivity of regions. Mocetti and Rizzica examined the relationship between organized crime infiltration and development in Central and Northern Italy over the last 50 years. They found that Italian provinces with higher levels of mafia influence experienced a 9% lower employment growth rate compared to those with less mafia presence. This analysis also revealed that regions with high mafia penetration had a value-added growth rate 15% lower than the average for the period. While productivity growth was also reduced in the provinces most affected by organized crime infiltration, this result was not statistically significant<sup>30</sup>.

Other adverse effects of organized crime can be seen indirectly by looking at the positive impact of removing mafia-linked companies on legitimate businesses. A study focused on Northern and Central Italy from 2013 to 2020, analyzing 57 anti-mafia police operations, highlighted that eliminating mafia-connected firms enhances the operating performance of non-criminal competitors by an average of 7.7%, with a greater impact in industries characterized by low competition<sup>31</sup>. Banks raise interest rates on loans due to the heightened perception of risk in areas with high levels of criminal infiltration. This negative response, in terms of higher interest rates, impacts local banks less than other banks (non-local and foreign)<sup>32</sup>.

Peri highlighted the adverse effects of organized crime on employment rates and job opportunities<sup>33</sup>.

<sup>28</sup> K. C. NEANIDIS, M. P. RANA and K. BLACKBURN, *An empirical analysis of organized crime, corruption and economic growth*, in *Annals of Finance*, 13, 2017: 273-298.

<sup>29</sup> Mentioned P. PINOTTI, *The economic costs of organised crime: Evidence from Southern Italy*.

<sup>30</sup> Mentioned S. MOCETTI and L. RIZZICA, *Organized crime in Italy: An economic analysis*.

<sup>31</sup> F. AMBROSINI, M. FABRIZI, E. IPINO and A. PARBONETTI, *When the Godfather Falls: Implications for Industry Peers* (May 01, 2025). Available at SSRN: <https://ssrn.com/abstract=4960619> or <http://dx.doi.org/10.2139/ssrn.4960619>.

<sup>32</sup> B. BUCHETTI, M. FABRIZI, E. IPINO, I. MIQUEL-FLORES and A. PARBONETTI, *Organized crime and banks: assessing the effects of anti-mafia police actions on lending*, June 2025. Available at SSRN: <https://ssrn.com/abstract=5059258> or <http://dx.doi.org/10.2139/ssrn.5059258>.

<sup>33</sup> Mentioned G. PERI, *Socio-cultural variables and economic success: evidence from Italian provinces 1951-1991*.

The adverse institutional and socio-economic environment created by the mafia discourages individuals from investing in education. It compels them to migrate to other countries, thereby depleting social capital<sup>34</sup>, human capital<sup>35</sup>, and workforce quality<sup>36</sup>. This impoverishment of human capital also results in an unfertile ground for businesses and new ventures.

Although corruption is not the exclusive prerogative of the mafia, it is a damaging activity of organized crime, especially in public administration<sup>37</sup>. It negatively impacts the allocation of public funds and the awarding of public contracts<sup>38</sup>, leading to higher procurement and public works costs and inefficient allocation of public spending.

Corruption also causes social costs due to its significant negative impact on trust and relationships among people, which in turn impacts their quality of life and well-being.

So-called eco-mafias, which are dedicated to laundering money through businesses involved in environmental crimes, cause significant social, economic, and ecological costs for communities<sup>39</sup>. In the sectors most vulnerable to these crimes, implementing mandatory environmental reporting<sup>40</sup> and disclosures on compliance with environmental regulations may help in the fight against the so-called eco-mafias.

The World Happiness Report and various studies reveal global disparities in well-being, both within and between countries, based on several key

<sup>34</sup> F. DALLA CHIESA, *L'espansione delle organizzazioni mafiose: il Nord-Ovest come paradigma*, in Percorsi, 2015: 241-265.

<sup>35</sup> M. CAVALIERI, M. FINOCCHIARO CASTRO and C. GUCCIO C., *Organised crime and educational outcomes in Southern Italy: An empirical investigation*, in Socio-Economic Planning Sciences, 89, 2023: 101705.

<sup>36</sup> Mentioned D. ACEMOGLU, G. DE FEO and G. D. DE LUCA, *Weak states: Causes and consequences of the Sicilian Mafia*.

<sup>37</sup> M. DI CATALDO and N. MASTROROCCHIO, *Organised Crime, Captured Politicians and the Allocation of Public Resources*, Trinity Economics Papers, Department of Economics, working paper No. 1018, 2019; A. FENIZIA, *Breaking the ties between the Mafia and the State: Evidence from Italian municipalities*. Available at SSRN 3105798, 2018; Mentioned S. MOCETTI and L. RIZZICA, *Organized crime in Italy: An economic analysis*.

<sup>38</sup> G. ALBANESE and G. MARINELLI, *Organized crime and productivity: Evidence from firm-level data*, in Rivista italiana degli economisti, 18(3), 2013: 367-394; G. BARONE and G. NARCISO, *Organized crime and business subsidies: Where does the money go?*, in Journal of Urban Economics, 86, 2015: 98-110; E. FELLI and G. TRIA, *Produttività e crimine organizzato: Un'analisi delle regioni italiane*, in Sviluppo economico, 4(1), 2000: 79-101. A. LA SPINA and G. LO FORTE, *I costi dell'illegalità*, in Rivista economica del Mezzogiorno, 20(3-4), 2006: 509-570.

<sup>39</sup> R. WALTERS, *Eco mafia and environmental crime*, in Crime, justice and social democracy: International perspectives, Palgrave Macmillan UK, London, 2013, pp. 281-294.

<sup>40</sup> M. CONTRAFATTO, *The institutionalization of social and environmental reporting: An Italian narrative*, in Accounting, Organizations and Society, 39(6), 2014: 414-432.

factors. These factors also include perceptions of corruption, as well as the quality of human relationships (within families, at work, and in the community), and character virtues such as pro-sociality and trust. Other variables, such as income, employment, social support, personal freedom, and government effectiveness, also contribute to this issue<sup>41</sup>.

Some studies highlight positive “in-sign” effects on the economy. Their investments in the legal economy act as an economic stabilizer and social insurance, mitigating the impact of economic downturns. In Italy, for instance, provinces with a high presence of organized crime have been less affected by the 2007 subprime mortgage crisis in terms of establishing new businesses than those with lower levels of criminal infiltration. There are also spillovers in the labor market caused by criminal organizations, which have a significant impact on the employment rate. However, this effect varies significantly based on the size of the local informal labor market<sup>42</sup>.

### 3.4. Common traits of firms infiltrated by organized crime

In Italy, the infiltration of the mafia into the legitimate economy and businesses has increased significantly since the 1980s. It now operates internationally using similar infiltration and territorial control strategies as those employed in our country<sup>43</sup>.

Blending investments in both illegal and legal activities is a characteristic of organized crime<sup>44</sup>, and the differences between legal and illegal enterprises have become increasingly blurred<sup>45</sup>. A study by Transcrime

<sup>41</sup> The importance of these variables appears both in cross-country context and in the analysis of individual responses in J. F. HELLIWELL, R. LAYARD, J. D. SACHS, J.-E. DE NEVE, L. B. AKNIN and S. WANG (Eds.), *World Happiness Report 2025*, University of Oxford: Wellbeing Research Centre, 2025. Available at the website: [worldhappiness.report](https://worldhappiness.report) and in A. E. CLARK, S. FLÈCHE, R. SAYARD, N. POWDTHAVEE and G. WARD, *The Origins of Happiness: The Science of Wellbeing over the Life Course*, Princeton University Press, 2018.

<sup>42</sup> M. LE MOGLIE and G. SORRENTI, *Mafia Inc.: When godfathers become entrepreneurs* (No. 251), Working Paper, 2017.

<sup>43</sup> Mentioned UNODC (United Nations Office on Drugs and Crime), *The globalization of crime. A transnational organized crime threat assessment*.

<sup>44</sup> E. FANTÒ, *L'impresa a partecipazione mafiosa. Economia legale ed economia criminale*, Edizioni Dedalo, Bari, 1999; mentioned U. SANTINO, *Dalla mafia alle mafie: scienze sociali e crimine organizzato*.

<sup>45</sup> R. SMITH, *Understanding entrepreneurial behaviour in organized criminals*, in *Journal of Enterprising Communities: People and Places in the Global Economy*, Vol. 3, No. 3, 2009: 256-268.



highlighted that between 1983 and 2011, 8.7% of the Italian mafia's investments were in companies and shares<sup>46</sup>.

The mafia infiltrates the economy by establishing *ad hoc* criminal enterprises, infiltrating legitimate businesses<sup>47</sup>, and building relationships with colluding enterprises.

Fabrizi et al.<sup>48</sup> classify criminal companies into three types:

- “Di supporto”: small businesses that support the criminal organizations by providing goods, tools, services, and money.
- “Cartiere”: small and medium-sized businesses involved in money laundering.
- “Star”: large companies used to build relationships with political, social, institutional, and business systems.

Analyzing a sample of 355 Italian companies controlled by the mafia in the period before and after seizure and the appointment of a judicial administrator, Ravenda et al. distinguished two types of infiltrated companies: “real firms” and “shell firms”. This distinction is based on the characteristics of their cost structures, which derive from different specific methods of managing transactions resulting from various money laundering activities.

Some accounting practices are used “strategically” by criminal organizations to facilitate money laundering<sup>49</sup> and the corruption<sup>50</sup> of politicians, bureaucrats, and economic actors through financial transactions that appear to be ordinary commercial transactions<sup>51</sup>. We will revisit this distinction in the next paragraph when analyzing the traits of criminal enterprises as shown by their financial statements.

Criminal enterprises typically operate by pressuring suppliers and workers to reduce costs, corrupting the administrative system, evading taxes, and falsifying accounting records<sup>52</sup>.

<sup>46</sup> Mentioned TRANSCRIME, Progetto PON sicurezza, 2007-2013, *Gli investimenti delle mafie, Rapporto Linea 1*.

<sup>47</sup> D. RAVENDA, J. M. ARGILÉS-BOSCH and M. M. VALENCIA-SILVA, *Detection model of legally registered Mafia firms in Italy*, in *European Management Review*, Vol. 12, No. 1, 2015: 23-39.

<sup>48</sup> Mentioned M. FABRIZI, P. MALASPINA and A. PARBONETTI, *Caratteristiche e modalità di gestione delle aziende criminali*.

<sup>49</sup> F. COMPIN, *The role of accounting in money laundering and money dirtying*, in *Critical Perspectives on Accounting*, 19(5), 2008: 591-602.

<sup>50</sup> D. NEU, J. EVERETT, A. S. RAHAMAN and D. MARTINEZ, *Accounting and networks of corruption*, in *Accounting, Organizations and Society*, 38(6-7), 2013: 505-524.

<sup>51</sup> Mentioned RAVENDA D., VALENCIA-SILVA M. M., ARGILES-BOSCH J. M. and GARCÍA-BLANDÓN J., *Money laundering through the strategic management of accounting transactions*.

<sup>52</sup> Mentioned TRANSCRIME, Progetto PON sicurezza, 2007-2013, *Gli investimenti delle mafie, Rapporto Linea 1*.

Organized crime uses intimidation and extortion to infiltrate businesses<sup>53</sup>.

Through threats and violence, organized crime hinders the ability of legitimate companies to compete, benefiting enterprises that are infiltrated and increasing their dominance in the market and profits<sup>54</sup>.

Infiltration into legitimate businesses aims to launder illicit money, gain social consensus and legitimation by creating jobs, and control territory by establishing relationships with law-abiding companies<sup>55</sup> and public institutions<sup>56</sup>, influencing their decisions regarding suppliers.

Champeyrache traced the Italian mafia's social legitimacy back to institutional theory, demonstrating how its deep territorial roots were established by replacing (increasingly unnecessary) violence with artificial scarcity. This scarcity was created by organized crime through the transfer of goods, resources, and wealth to mafiosi, the manipulation of norms and the creation of rules, and control of seemingly legitimate activities. These actions gave them social status and encouraged people to submit to the power of mafiosi and clans. Violence is only necessary in specific circumstances, such as acquiring territorial control or managing illegal markets. In this way, mafiosi integrated into civil society, becoming tolerated and sometimes even viewed as partners by certain entrepreneurs<sup>57</sup>.

Organized crime also invests in companies to earn profits by leveraging substantial financial resources and intimidation to succeed in com-

<sup>53</sup> Mentioned S. MOCETTI and L. RIZZICA, *Organized crime in Italy: An economic analysis*.

<sup>54</sup> Mentioned M. FABRIZI, P. MALASPINA and A. PARBONETTI, *Caratteristiche e modalità di gestione delle aziende criminali*; P. SLUTZKY and S. ZEUME, *Organized crime and firms: Evidence from antimafia enforcement actions*, in *Management Science*, 70(10), 2024: 6569-6596; J. L. ZIMMERMAN and D. FORRESTER, *The forensics of the American mafia*. Available at SSRN 3514247, 2020.

<sup>55</sup> P. ARLACCHI, *La mafia imprenditrice. Dalla Calabria al centro dell'inferno*, Il Saggiatore, Milano, 2010.

<sup>56</sup> Mentioned P. ARLACCHI, *La mafia imprenditrice. Dalla Calabria al centro dell'inferno*; A. BECCHI and G. M. REY, *L'economia criminale*, Laterza, 1994; M. BINI, *Il polimorfismo dell'impresa criminale*, in A. BERTONI (Ed.), *La criminalità come impresa*, Egea, Milano, 1997; Mentioned E. FANTÒ, *L'impresa a partecipazione mafiosa: economia legale ed economia criminale*; N. GRATTERI, *Scuola 'Ndrangheta*, in S. Danna (Ed.), *Prodotto interno mafia. Così la criminalità organizzata è diventata il sistema Italia*, Einaudi, Torino, 2011, pp. 43-71.

<sup>57</sup> CHAMPEYRACHE C., *Artificial scarcity, power, and the Italian Mafia*, in *Journal of Economic Issues* 48, 2014: 625-640.



petition<sup>58</sup> while establishing relationships that strengthen their market power<sup>59</sup>.

Scholars have identified the attributes of industries that facilitate infiltration of criminal groups, as they serve their interests and align with their objectives<sup>60</sup>. To maximize profits and minimize risks, the mafia invests in real estate<sup>61</sup> and construction<sup>62</sup>. To expand their control over territory, they invest in the tourism and public procurement sectors. To easily conceal illicit activities and profits while laundering money, organized crime infiltrates companies in highly deregulated sectors such as retail trade<sup>63</sup>. The mafia infiltrates companies in sectors that rely heavily on unskilled labor to expand their territorial influence, particularly in traditional industries where high managerial skills are not necessary<sup>64</sup>. They also target companies in traditional industries because these sectors are labor-intensive and, therefore, are well-suited for building social consensus by recruiting workers from regions with high unemployment.

Organized crime also focuses on industries with limited competition, including large-scale retail, catering, and construction<sup>65</sup>.

The mafia frequently infiltrates companies in sectors that rely heavily on public sector demand, aiming to profit from public resources such as waste management, healthcare, public services, and transportation<sup>66</sup>.

According to a study by Parbonetti, in Italy, criminal enterprises are mostly found in the construction sector (31.2%) and real estate (10.4%).

<sup>58</sup> M. DE SIMONI, *The financial profile of firms infiltrated by organised crime in Italy*, Quaderni dell'Antiriciclaggio n. 17, Unità di Informazione Finanziaria (marzo), 2022; Mentioned D. GAMBETTA, *The Sicilian Mafia. The Business of Private Protection*; Mentioned K. A. KONRAD. and S. SKAPERDAS, *The Market for Protection and the Origin of the State*; Mentioned S. MOCETTI and L. RIZZICA, *Organized crime in Italy: An economic analysis*.

<sup>59</sup> Mentioned A. M. TARANTOLA, *Dimensione delle attività criminali, costi per l'economia, effetti della crisi economica*.

<sup>60</sup> Mentioned TRANSCRIME, Progetto PON sicurezza, 2007-2013, *Gli investimenti delle mafie, Rapporto Linea 1*.

<sup>61</sup> Ibidem.

<sup>62</sup> M. FABRIZI and A. PARBONETTI, *The Economic Consequences of Criminal Firms*, September 2019, Presented at the 2019 Global Issues in Accounting Conference at Chicago Booth. Available at SSRN <https://ssrn.com/abstract=3444839> or <http://dx.doi.org/10.2139/ssrn.3444839>.

<sup>63</sup> Ibidem.

<sup>64</sup> Mentioned M. FABRIZI, P. MALASPINA and A. PARBONETTI, *Caratteristiche e modalità di gestione delle aziende criminali*; Mentioned TRANSCRIME, Progetto PON sicurezza, 2007-2013, *Gli investimenti delle mafie, Rapporto Linea 1*.

<sup>65</sup> Mentioned TRANSCRIME, Progetto PON sicurezza, 2007-2013, *Gli investimenti delle mafie, Rapporto Linea 1*.

<sup>66</sup> Ibidem.

However, in the industries of Commerce, Accommodation and Food Services, Entertainment, Education, and Financial and Insurance Services, criminal enterprises are present at a percentage similar to non-criminal enterprises. Additionally, criminal enterprises are also very prevalent in the Manufacturing, Logistics and Transportation, Water and Waste Services, and Electricity and Gas sectors<sup>67</sup>.

Public procurement is one of the activities most vulnerable to corruption and exploitation by criminal organizations. The risk of being infiltrated by the mafia increases when companies win public contracts. By exploiting their connections with politicians, the mafia distorts the allocation of public resources to favor the companies they have infiltrated<sup>68</sup> and assists them in securing contracts with public institutions<sup>69</sup>. Mirenda et al. found that these firms experience a 30 percent increase in the average probability of being awarded at least one public works contract<sup>70</sup>.

The mafia also infiltrates political institutions to protect itself from investigations and inspections by tax authorities<sup>71</sup>.

Enterprises face various forms of direct or indirect extortion, which diminishes their technical efficiency. This occurs when they experience pressure to choose suppliers, are forced to subcontract work, hire unproductive or unnecessary labor, or incur security costs<sup>72</sup>.

Using significant financial power, intimidation, and violence, organized crime infiltrates businesses to launder illegal funds and control territories, often manipulating voter behavior and influencing the decisions of public

<sup>67</sup> A. PARBONETTI, *La presenza delle mafie nell'economia: profili e modelli operativi*, Padova University Press, 2021, par. 2.2.

<sup>68</sup> M. DI CATALDO and N. MASTROROCCHIO, *Organized crime, captured politicians, and the allocation of public resources*, in *Journal of Law, Economics, and Organization* 38: 774-839. <https://doi.org/10.1093/jleo/ewab006>.

<sup>69</sup> Ibidem.

<sup>70</sup> Mentioned L. MIRENDA, S. MOCETTI and L. RIZZICA, *The economics effects of mafia: firm level evidence*, 23.

<sup>71</sup> P. BUONANNO, G. PRAROLO and P. VANIN, *Organized crime and electoral outcomes. Evidence from Sicily at the turn of the XXI century*, in *European Journal of Political Economy*, 41, 2016: 61-74; D. GAMBETTA and R. SUGDEN R., *The Sicilian mafia: The business of private protection*, in *Journal of Economic Literature*, 33(2), 1995: 863-864.

<sup>72</sup> Mentioned, C. CHAMPEYRACHE, *Artificial scarcity, power, and the Italian Mafia*; E. DARGENT, A. E. FELDMANN and J. P. LUNA, *Greater state capacity, lesser stateness: Lessons from the Peruvian commodity boom*, in *Politics & Society*, 45, 2017: 3-34; C. CHAMPEYRACHE, *A Commonsian approach to crime: The Mafia and the economic power to withhold*, in *Cambridge Journal of Economics*, 45, 2021: 411-425; C. CHAMPEYRACHE, *Institutional mistrust, instrumental trust, and the privatization of law: The Mafia as a territorial ruler*, in *Journal of Economic Issues* 56, 2022: 945-958; T. ARMSTRONG and J. MEYER, *Illicit business forums in South Africa: A Survey*, in *Journal of Anti-Corruption Law*, 6, 2022: 192-236.

officials on procurements and public works. Mafia-controlled companies typically operate at a loss to facilitate money laundering. These “strategic losses” aim to achieve market dominance, distort competition rules, and undermine price formation mechanisms<sup>73</sup>, systematically excluding law-abiding businesses from the market and restricting entrepreneurial freedom.

Mafia groups also infiltrate the construction industry to exchange electoral support for preferential access to contracts with public administration in the public works sector. De Feo and De Luca demonstrated that during electoral competition, the share of construction workers increased more significantly in municipalities affected by the Mafia compared to other regions in Sicily<sup>74</sup>.

Research by Mirenda et al.<sup>75</sup> analyzed the N’drangheta infiltrations into firms located in central and northern Italy, identifying the characteristics of firms that are more likely to be infiltrated by the mafia. Their survey highlighted that infiltrated firms in central and northern Italy are younger and less efficient than their counterparts, primarily operating in sectors that rely heavily on public sector demand or those facilitating money laundering.

Parbonetti created a detailed database of Italian companies linked to the mafia. By analyzing their common features, he demonstrated that they are typically small businesses with low debt, operating in labor-intensive, low-tech industries<sup>76</sup>.

The mafia often targets companies under financial stress by offering them loans with usurious terms and, in some cases, acquiring the companies’ assets<sup>77</sup>. During the COVID-19 pandemic, for instance, the risk of mafia infiltration into businesses has significantly increased. Parbonetti and Fabrizi<sup>78</sup> analyzed three possible risk scenarios of mafia organizations infiltrating businesses by taking advantage of the crisis triggered by the pandemic: 1) The acquisition of companies following accumulated losses and the need for recapitalization; 2) The bankruptcy of companies following

<sup>73</sup> M. CENTORRINO, A. LA SPINA and C. SIGNORINO, *Il nodo gordiano. Criminalità mafiosa e sviluppo nel Mezzogiorno*, Bari, 1999, cap. X.

<sup>74</sup> G. DE FEO and G. D. DE LUCA, *Mafia in the ballot box*, in *American Economic Journal: Economic Policy*, 9(3), 2017: 134-167.

<sup>75</sup> Mentioned L. MIRENDA, S. MOCETTI and L. RIZZICA, *The economics effects of mafia: firm level evidence*.

<sup>76</sup> Mentioned PARBONETTI A., *La presenza delle mafie nell’economia: profili e modelli operativi*, par. 2.3 and following.

<sup>77</sup> Mentioned M. Le MOGLIE and G. SORRENTI, *Revealing “mafia inc.”? Financial crisis, organized crime, and the birth of new enterprises*.

<sup>78</sup> A. PARBONETTI and M. FABRIZI *Aziende criminali, business e Covid-19: i rischi nascosti della pandemia. Economia e società regionale*, 2, 2020, pp. 66-71.

loans granted at usurious rates; 3) The takeover by mafia of loans granted to companies for economic recovery.

Future research should verify whether new companies and startups are more vulnerable to mafia infiltration compared to enterprises in the subsequent stage of development. Literature has highlighted that crime imposes serious negative externalities on entrepreneurship as it affects individuals' decisions to start new businesses<sup>79</sup> by reducing profit expectations<sup>80</sup> and increasing the costs and risks inherent in starting a new venture<sup>81</sup>. Scholars have also demonstrated that organized crime hinders the growth of new companies, both because of the fear that expansion may attract the attention of organized crime groups and because the mafia's presence negatively impacts the profitability of startups and high-growth startups (the so-called gazelles)<sup>82</sup>.

In the following four chapters, as we examine new methods used by organized crime to launder illicit money, we will cite the UIF Report for 2023, which reveals that the mafia also uses crowdfunding platforms to infiltrate startups and launder illegal funds<sup>83</sup>. However, no research has yet investigated whether new ventures and startups are more vulnerable to infiltration by criminal groups than established businesses. We can suppose that young firms are very susceptible to mafia infiltration because they often lack sufficient funding to survive and overcome the severe challenges of the early stages. They lack a reputation and might take longer than planned to attract customers, gain market share, and achieve sustainability. For this reason, many young firms fail because they run out of cash shortly

<sup>79</sup> N. BARBIERI and U. RIZZO, *The impact of crime on firm entry*, in *Journal of Regional Science*, 2022; S. A. CHURCHILL, M. HAYWARD, R. SMYTH and T. A. TRINH, *Crime, community social capital and entrepreneurship: Evidence from Australian communities*, in *Journal of Business Venturing*, 38(2), 2023: 106291.

<sup>80</sup> W. J. BAUMOL, *Entrepreneurship: Productive, unproductive, and destructive*, in *Journal of Political Economy*, 98(5), 1990: 893-921; G. S. BECKER, *Crime and punishment: An economic approach. The economic dimensions of crime*, Palgrave Macmillan, 1968, pp. 13-6.

<sup>81</sup> D. R. BOWES, *A two-stage model of the simultaneous relationship between retail development and crime*, in *Economic Development Quarterly*, 21(1), 2007: 79-90; D. F. KURATKO, J. S. HORNSBY, D. W. NAFFZIGER and R. M. HODGETTS, *Crime and small business: An exploratory study of cost and prevention issues in US firms*, in *Journal of Small Business Management*, 38(3), 2000: 1-13; J. MATTI and A. ROSS, *Does crime affect entrepreneurship? A discussion of the current literature*, in *Journal of Entrepreneurship and Public Policy*, 5(3), 2016: 254-272.

<sup>82</sup> C. MIGLIARDO and D. NICOLÒ, *Mutual Spatial Proximity, Organized Crime, and the Profitability of High-Growth Startups: The Case of Italian Gazelle Enterprises*, in *Management Control*, 1/2025: 261-282.

<sup>83</sup> BANCA D'ITALIA, UIF (Unità di Informazione Finanziaria per l'Italia), *Rapporto Annuale 2023*, Roma, 2024.

after founding<sup>84</sup>. This risk is amplified by the typical financial constraints and undercapitalization<sup>85</sup> of young firms. However, this hypothesis needs to be verified, and interesting research directions are revealed.

Albanese<sup>86</sup> proposed a predictive qualitative model to estimate the risk of organized crime infiltration into businesses. This model categorizes the risk as either “low” or “high” based on the following characteristics of the companies: Supply, Customers, Regulators, Competitors, Patronage, and Prior record (see Tab. 10).

*Tab. 10 - A qualitative model to estimate the risk of organized crime infiltration into businesses*

<i>Predictors</i>	<i>Low risk</i>	<i>High risk</i>
Supply	Few available small, financially weak businesses	Readily available small, financially weak businesses
Customers	Elastic demand for product	Inelastic demand for product
Regulators	Difficult to enter the market	Easy to enter the market
Competitors	Monopoly/oligopoly-controlled market	Open market with many small firms
Patronage	Entrepreneurs are professional managers	Entrepreneurs are non-professional ill-equipped to deal with business problems
Prior record	No prior record of organized crime involvement in the market	Prior history record of organized crime infiltration in the industry

*Source:* J. S. Albanese, *Predicting the incidence of organized crime: A preliminary model*, in T. S. Bynum (Ed.), *Organized crime in America: Concepts and controversies*, Criminal Justice Press, New York, NY, 1987.

Mafia infiltration in companies is facilitated not only by the specific traits of the companies themselves but also by certain features of the

<sup>84</sup> M. G. BRUNA and D. NICOLÒ D., *Corporate reputation and social sustainability in the early stages of start-ups: A theoretical model to match stakeholders’ expectations through corporate social commitment*, in *Finance Research Letters*, 35, 2020: 101508; NICOLÒ D., *La vulnerabilità delle imprese nella fase di start-up. interpretazione delle cause*, Giappichelli, Torino, 2019.

<sup>85</sup> D. NICOLÒ and B. RICCA, *Under-capitalization and other factors that influence the survival of young Italian companies*, in *International Journal of Advances in Management and Economics*, n. 08, Issue 2, 2019: 37-51.

<sup>86</sup> J. S. ALBANESE, *Predicting the incidence of organized crime: A preliminary model*, in T. S. Bynum (Ed.), *Organized crime in America: Concepts and controversies*, Criminal Justice Press, New York, NY, 1987.

environment in which they operate. Organized crime primarily targets companies located in small and medium-sized municipalities with limited infrastructure, a significant presence of criminal groups, and few foreign investments. Under these conditions, organized crime finds an ideal humus in which to thrive<sup>87</sup>.

### 3.5. Characteristics of financial statements of infiltrated companies

The financial statements of businesses infiltrated by organized crime exhibit common characteristics, as well as performance differences compared to those of legitimate companies.

Ambrosini et al.<sup>88</sup>, analyzing 2,082 Italian mafia-connected companies, highlight that their balance sheets share common traits that can be identified through machine learning models capable of recognizing them. This predictive method helps identify early warning signs of potential criminal infiltration.

A first type of insight deriving from their financial statements concerns some features of companies controlled by the mafia. According to Fabrizi et al., these criminal enterprises are generally larger than non-criminal ones in terms of revenue and total assets, and they possess significant financial resources and higher debt ratios compared to legitimate businesses<sup>89</sup>.

Companies infiltrated by the mafia tend to have higher debt levels and financial leverage<sup>90</sup>, as well as an increased risk of bankruptcy. They often evade taxes and engage in earnings manipulation practices (particularly by manipulating earnings downward)<sup>91</sup>, engaging in fraud and other socially irresponsible practices through financial statements<sup>92</sup>.

<sup>87</sup> Mentioned G. ARDIZZI, C. PETRAGLIA, M. PIACENZA, F. SCHNEIDER and G. TURATI, *Money laundering as a crime in the financial sector: A new approach to quantitative assessment, with an application to Italy*; Mentioned L. MIRENDA, S. MOCETTI and L. RIZZICA, *The economics effects of mafia: firm level evidence*; Mentioned TRANSCRIME, Progetto PON sicurezza, 2007-2013, *Gli investimenti delle mafie, Rapporto Linea 1*.

<sup>88</sup> F. AMBROSINI, M. FABRIZI and A. PARBONETTI, *Accounting for Crime: Detecting Mafia-connected Firms Using Machine Learning*, 2024. Available at SSRN: <https://ssrn.com/abstract=4912709>.

<sup>89</sup> Mentioned M. FABRIZI, P. MALASPINA and A. PARBONETTI, *Caratteristiche e modalità di gestione delle aziende criminali*.

<sup>90</sup> Mentioned M. FABRIZI and A. PARBONETTI, *The Economic Consequences of Criminal Firms*.

<sup>91</sup> Mentioned A. BIANCHI, A. MARRA, D. MASCIANDARO and N. PECCHIARI, *Organized crime and firms' financial statements: Evidence from criminal investigations in Italy*.

<sup>92</sup> P. K. CHANEY, M. FACCIO and D. PARSLEY, *The quality of accounting information in politically connected firms*, in *Journal of Accounting and Economics*, 51(1-2), 2011:

Research shows mixed results regarding the comparison between legitimate and mafia-infiltrated companies in terms of performance<sup>93</sup>. According to Fabrizi et al.<sup>94</sup>, there are no significant differences in profitability between criminal and non-criminal enterprises. Other scholars have demonstrated that companies connected to the mafia have higher profitability compared to their peers<sup>95</sup>. Conversely, Bianchi et al. showed that the profitability of infiltrated firms is lower than that of legitimate businesses, despite their higher revenues and lower labor costs, which is attributed to increased operational costs compared to legitimate companies<sup>96</sup>.

The financial statements and accounting records indicate that companies infiltrated by the mafia often use false or inflated invoices to purchase production inputs, thereby diverting money from the business<sup>97</sup>.

When the purpose is money laundering, after infiltration, there is a notable increase in firm revenues that is not accompanied by a proportional growth in productive inputs and external financing, which is linked to a reduction in equity<sup>98</sup>. The rising turnover is partly fictitious, with revenue increases primarily driven by over-invoicing for money laundering purposes. This discrepancy is not matched by an increase in production scale or employment, underscoring the objective of laundering illicit money<sup>99</sup>. In

58-76; R. M. GARGOURI, R. SHABOU and C. FRANCOEUR, *The relationship between corporate social performance and earnings management*, in Canadian Journal of Administrative Sciences/Revue Canadienne Des Sciences de l'Administration, 27(4), 2010: 320-334; K. L. JONES, G. V. KRISHNAN and K. D. MELENDREZ, *Do models of discretionary accruals detect actual cases of fraudulent and restated earnings? An empirical analysis*, in Contemporary Accounting Research, 25(2), 2008: 499-531; J. L. PEROLS and B. A. LOUGEE, *The relation between earnings management and financial statement fraud*, in Advances in Accounting, 27(1), 2011: 39-53; Mentioned RAVENDA D., ARGILÉS-BOSCH J. M. and VALENCIA-SILVA M. M., *Detection model of legally registered Mafia firms in Italy*.

<sup>93</sup> Mentioned P. ARLACCHI, *La mafia imprenditrice. Dalla Calabria al centro dell'inferno*; Mentioned A. BERTONI (Ed.), *La criminalità come impresa*.

<sup>94</sup> Mentioned M. FABRIZI, P. MALASPINA and A. PARBONETTI, *Caratteristiche e modalità di gestione delle aziende criminali*.

<sup>95</sup> Mentioned P. SLUTZKY and S. ZEUME, *Organized crime and firms: Evidence from antimafia enforcement actions*; Mentioned J. L. ZIMMERMAN and D. FORRESTER, *The forensics of the American mafia*.

<sup>96</sup> Mentioned P. A. BIANCHI, A. MARRA, D. MASCIANDARO and N. PECCHIARI, *Organized crime and firms' financial statements: Evidence from criminal investigations in Italy*.

<sup>97</sup> Ibidem.

<sup>98</sup> Mentioned L. MIRENDA, S. MOCETTI and L. RIZZICA, *The economics effects of mafia: firm level evidence*; mentioned TRANSCRIME, Progetto PON sicurezza, 2007-2013, *Gli investimenti delle mafie, Rapporto Linea 1*.

<sup>99</sup> Mentioned L. MIRENDA, S. MOCETTI and L. RIZZICA, *The economics effects of mafia: firm level evidence*.



other words, revenue growth is associated with a similar rise in intermediate inputs, disproportionately more significant than the growth in labor and capital, which remain statistically unchanged compared to the pre-infiltration period. This evidence reveals the artificially inflated revenues to launder illicit proceeds. Using false sales invoices or over-invoicing, the legitimate origin of illegal funds is simulated through complicit firms, commonly known as “Paper Mills” or “Cartiere”. Income taxes are paid on these simulated sales, and VAT is paid on fictitious sales.

Money laundering also occurs through businesses operating in cash-intensive sectors, characterized by anonymous cash transactions (e.g., restaurants, hotels, retail stores, convenience stores, etc.). This makes it easy to inject illicit money into the banking system as if it were legitimately derived from sales, along with legitimate money<sup>100</sup>.

Another method for laundering money involves using cash obtained from illegal activities to pay unregistered employees<sup>101</sup>, and fictitious loans characterized by the absence of documentation between contracting partners, a lack of collateral guarantees, and interest rates that differ from market rates.

Analyzing a sample of 355 firms controlled by Italian mafias in the phase preceding and following the initiation of judicial administration procedure, Ravenda et al.<sup>102</sup> identified two types of criminal companies based on their accounting practices used for transactions aimed at money laundering: “real firms” and “shell firms”. These practices cause different cost structures. Real firms, which perform genuine commercial activities while also serving as a cover for illicit transactions, exhibit abnormally high costs for raw materials, goods, and personnel, along with unusually low service costs. This results in a net zero effect on reported operating

<sup>100</sup> N. GILMOUR and N. RIDLEY, *Everyday vulnerabilities – Money laundering through cash intensive businesses*, in *Journal of Money Laundering Control*, 18(3), 2015: 293-303; M. RICCARDI, *When criminals invest in businesses: Are we looking in the right direction? An exploratory analysis of companies controlled by mafias*, in *Organized Crime, Corruption and Crime Prevention: Essays in Honor of Ernesto U. Savona* (vol. 9783319018, pp. 197-206), Cham: Springer International Publishing; E. U. SAVONA, *The businesses of Italian Mafias*, in *European Journal on Criminal Policy and Research*, 21(2), 2015: 217-236.

<sup>101</sup> A. KENNEDY, *Dead fish across the trail: illustrations of money laundering methods*, in *Journal of Money Laundering Control*, 8(4), 2005: 305-319; D. RAVENDA, J. M. ARGILES-BOSCH and M. M. VALENCIA-SILVA, *Labor tax avoidance and its determinants: The case of mafia firms in Italy*, in *Journal of Business Ethics*, 132, 2015: 41-62.

<sup>102</sup> Mentioned RAVENDA D., VALENCIA-SILVA M. M., ARGILES-BOSCH J. M. and GARCÍA-BLANDÓN J., *Money laundering through the strategic management of accounting transactions*.



cash flow (CFO) relative to sales. Shell companies, which operate solely as vehicles for money laundering without engaging in significant activities or operations, have unusually low raw material, goods, and personnel costs, paired with abnormally high service costs, resulting in a negative overall impact on the CFO relative to sales.

By comparing the balance sheet data of 224 Italian mafia-infiltrated firms confiscated by judicial authorities with those of lawful firms, it has been shown that, in the years before confiscation, these firms manipulated revenue and expense accruals to conceal money laundering. In the years following the confiscation, after the judicial administrator took over management of these companies, no significant difference was observed in the way provisions were managed compared to lawful companies<sup>103</sup>.

In recent years, Italy's measures to combat money laundering have increased the chances that investigators will detect false invoices. As a result, criminal organizations have been compelled to reduce their use of false invoices<sup>104</sup> and adopt new techniques for laundering money. These measures include amendments to anti-money laundering laws that have lowered the limit on cash transactions<sup>105</sup>, the introduction of electronic invoicing, the obligation to trace payments, and the requirement to report suspicious financial transactions to the supervisory authority (in Italy, the UIF – Financial Information Unit of the Bank of Italy) for operators such as banks, financial institutions, post offices, notaries, tax consultants and accountants. We will examine this subject in the following sections, where we examine the new methods used by organized crime to replace traditional money laundering methods and the framework for combating money laundering in Italy.

In the construction industry<sup>106</sup>, criminal organizations yield profits by leveraging high liquidity, exploiting illegal labor, reducing costs through non-compliance with regulations, and securing public contracts using their considerable coercive and corrupt power<sup>107</sup>. This is evident from their fi-

<sup>103</sup> Mentioned RAVENDA D., VALENCIA-SILVA M. M., ARGILES-BOSCH J. M. and GARCIA-BLONDON J., *Accrual management as an indication of money laundering through legally registered Mafia firms in Italy*.

<sup>104</sup> Mentioned P. A. BIANCHI, A. MARRA, D. MASCIANDARO and N. PECCHIARI, *Organized crime and firms' financial statements: Evidence from criminal investigations in Italy*.

<sup>105</sup> The Third European Union (EU) Anti-Money Laundering Directive (Directive 2005/60/EC) was introduced in Italy by D. Lgs. 231/2007) and subsequently amended.

<sup>106</sup> J. DAVIES, *Criminogenic Dynamics of the Construction Industry: A State-Corporate Crime Perspective*, in *Journal of White Collar and Corporate Crime* 3, 2022: 90-99.

<sup>107</sup> Mentioned F. M. CALAMUNCI, *What happens in criminal firms after godfather management removal? Judicial administration and firms' performance*; M. DI CATALDO

nancial statements, which often exhibit revenue increases that coincide with proportional growth in production inputs and costs, revealing the actual growth of the companies<sup>108</sup>. The characteristics of enterprises in this sector make them highly vulnerable to infiltration by organized crime<sup>109</sup>.

Financial statements of companies infiltrated by the mafia reveal the effects of mafia influence on their performance. Mirenda et al.<sup>110</sup> argued that organized crime infiltration has a nonlinear impact on businesses' performance. Initially, infiltration enhances performance, leading to a significant increase in revenues compared to the pre-infiltration period. However, the strategies adopted by these infiltrated companies focus on short-term profit and asset depletion, resulting in a rapid decline in their financial health. This reveals a narrow view that considers the company mainly as exploitative rather than focusing on its sustainable development.

### **3.6. The Italian framework for combating money laundering of illegal funds**

This paragraph discusses money laundering in connection with organized crime, although this practice is not limited to the mafia. When carried out by other groups or individuals, the practice involves some specific traits, but these are not addressed in this book due to its focus.

A significant portion of the illegal funds available to organized crime is reinvested in further illicit activities. However, since these activities do not offer sufficient investment opportunities, some of the illegal profits are laundered through legitimate investments<sup>111</sup>.

Money laundering involves legitimizing funds gained through illegal activities<sup>112</sup>. Europol emphasizes that it enables criminal networks to le-

and N. MASTROROCCO, *Organized Crime, Captured Politicians, and the Allocation of Public Resources*, in *Journal of Law, Economics, and Organization*, 38, 2022: 774-839.

<sup>108</sup> Mentioned L. MIRENDA, S. MOCETTI and L. RIZZICA, *The economics effects of mafia: firm level evidence*, 4.

<sup>109</sup> Mentioned M. Le MOGLIE and G. SORRENTI, *Revealing "mafia inc."? Financial crisis, organized crime, and the birth of new enterprises*; F. VARESE, *Mafias on the move: how organized crime conquers new territories*, Princeton University Press, 2011.

<sup>110</sup> Mentioned L. MIRENDA, S. MOCETTI and L. RIZZICA, *The economics effects of mafia: firm level evidence*.

<sup>111</sup> CATANZARO, R., *Il delitto come impresa. Storia sociale della mafia*, Liviana, Padova, 1988; M. CENTORRINO and G. SIGNORINO (Eds.), *Macroeconomia della mafia*, La Nuova Italia Scientifica, Roma, 1997.

<sup>112</sup> Mentioned EUROPOL, SOCTA 2021, European Union, *Serious and Organised Crime Threat Assessment. A Corrupting Influence: The Infiltration and Undermining of*

gitimize or conceal their assets from law enforcement, generate profits, and reinvest illicit funds<sup>113</sup>.

The United Nations Vienna 1988 Convention Article 3.1 defines money laundering as: “the conversion or transfer of property, knowing that such property is derived from any offense(s), for the purpose of concealing or disguising the illicit origin of the property or of assisting any person who is involved in such offense(s) to evade the legal consequences of his actions”.

In literature<sup>114</sup>, three stages of illicit money laundering have been identified:

- Placement, whereby illegal proceeds are introduced into the financial system in such a way as to avoid detection by investigative and supervisory authorities.
- Layering, which involves generating numerous financial transactions to make it difficult to trace the owners of the illicit money.
- Integration, which allows illegal proceeds to be converted into seemingly legitimate earnings.

Criminals cannot use money from illegal activities until they launder it into the legitimate economy, because of the risk of detection by law enforcement and investigative authorities. This is due to the tracking of financial transactions.

In Italy, the likelihood of detecting these transactions has been increased by the introduction of electronic invoicing, regulations restricting cash-based payments<sup>115</sup>, and the requirement to report suspicious transactions to the “Unità di Informazione Finanziaria” (UIF) at the Bank of Italy.

*Europe's Economy and Society by Organised Crime*, 26; mentioned E. FANTÒ, *L'impresa a partecipazione mafiosa: economia legale ed economia criminale* (Vol. 5), edizioni Dedalo, 1999; G. FIORENTINI, *Organized crime and illegal markets*, in B. BOUCKAERT and G. DE GEEST (a cura di), *Encyclopedia of Law and Economics*, 1999, pp. 434-459; E. U. SAVONA and M. RICCARDI, *Come proteggere l'economia legale e gli imprenditori: gli strumenti di intervento*, in Conference “Legalità e cultura d'impresa: risorse per il territorio”, organized by Assolombarda, Milano, 2011; mentioned TRANSCRIME, Progetto PON sicurezza, 2007-2013, *Gli investimenti delle mafie*, Rapporto Linea 1.

<sup>113</sup> Mentioned EUROPOL, SOCTA 2021, European Union, Serious and Organised Crime Threat Assessment, *A Corrupting Influence: The Infiltration and Undermining of Europe's Economy and Society by Organised Crime*, 26.

<sup>114</sup> W.C. GILMORE, *Dirty Money: The Evolution of Money Laundering Counter Measures*, Council of Europe Press, Strasbourg, 1999; B. BUCHANAN, *Money laundering – a global obstacle*, in *Research in International Business and Finance*, Vol. 18 No. 1, 2004: 115-27; P. HE, *A typological study on money laundering*, in *Journal of Money Laundering Control*, Vol. 13, No. 1, 2010: 15-32.

<sup>115</sup> The Third European Union (EU) Anti-Money Laundering Directive (Directive 2005/60/EC) was introduced in Italy by D. Lgs. 231/2007) and subsequently amended.

This reporting requirement applies to banks, post offices, financial intermediaries, virtual currency operators, notaries, professionals (especially accountants and tax consultants), gaming service providers, and public administrations, as well as law enforcement agencies such as the National Anti-Mafia Directorate (DNA) and the Anti-Mafia Investigation Directorate (DIA). As a result, this financial intelligence unit, working with investigative and judicial agencies, can effectively detect suspicious financial transactions and initiate investigations to trace illicit sources of funds.

Established at the Bank of Italy in 2007 by Legislative Decree 231/2007, the UIF was created to fight money laundering and terrorist financing. It operates under international rules and protocols that require each state to maintain a Financial Intelligence Unit (FIU) with full operational and managerial autonomy. It collaborates closely with law enforcement agencies and is part of a global network of financial intelligence units, enabling the exchange of crucial information to combat transnational money laundering and terrorism financing.

Below, we briefly describe the framework<sup>116</sup> in Italy that protects society, the economy, and businesses from infiltration by organized crime through money laundering, corruption, extortion, and other illegal activities.

The UIF serves as the recipient of Suspicious Transaction Reports (STRs), which are considered unusual and potentially related to crime, organized crime, or terrorism financing. Legislative Decree no. 90/2017<sup>117</sup> places these reporting obligations on a series of entities. These STRs come to UIF from banks, post offices, financial intermediaries, virtual currency operators, notaries, professionals (especially accountants and tax advisors), gaming service providers, public administrations, gambling companies, and law enforcement agencies like the National Anti-Mafia Directorate (“Direzione Nazionale Antimafia” – DNA) and the Anti-Mafia Investigations Directorate (“Direzione Investigativa Antimafia” – DIA).

In 2018, the UIF issued a document titled “Istruzioni sulle comunicazioni di dati e informazioni concernenti le operazioni sospette da parte degli uffici delle Pubbliche Amministrazioni” guiding public administration offices to identify STRs<sup>118</sup>. To reduce the subjectivity of these transaction risk assessments, this document offers a series of anomaly indicators related to the entity’s identity and how the transaction was conducted. Specific indi-

<sup>116</sup> For a detailed analysis of the anti-money laundering framework in Italy, see mentioned A. PARBONETTI, *La presenza delle mafie nell'economia: profili e modelli operativi*, Chapter 4.

<sup>117</sup> Ibidem par. 4.3.

<sup>118</sup> Ibidem par. 4.3.1.

cators for different sectors have also been included. Although not comprehensive, these indicators assist operators in identifying STRs, along with other symptomatic elements highlighted by the UIF. Public administrations are also required to verify and report any suspicious transactions to UIF as part of implementing the NRRP (National Recovery and Resilience Plan), known in Italy as PNRR (Piano Nazionale di Ripresa e Resilienza).

After reviewing the STRs<sup>119</sup>, the UIF decides whether to forward the information to investigative agencies such as the Italian Finance Police (“Guardia di Finanza”), the Anti-Mafia Investigation Directorate, or judicial authorities when necessary. Investigative bodies notify UIF about their interest level in the reports, enabling this unit to improve the processing of similar cases by distinguishing those that deserve attention from reported transactions that do not.

When investigative agencies find a discrepancy between an individual’s income and their total assets, the consequences outlined in the Anti-Mafia Code are severe. According to Article 24 of the Anti-Mafia Code, individuals involved in mafia-related criminal proceedings will have their assets seized and confiscated if these assets are disproportionate to their reported taxable income<sup>120</sup>. This provision also applies to assets obtained from illegal activities or their reinvestments if the person cannot prove their legal origin<sup>121</sup>. However, it is not allowed to oppose the confiscation order by claiming that the assets have a legitimate origin or that the funds used to acquire them are proceeds or reinvestments from tax evasion<sup>122</sup>.

<sup>119</sup> Ibidem par. 4.3.

<sup>120</sup> Cass., Sez. Un., 29.5.2014, n. 33451, in *Dejure*. For further information, M. DI LELLO FINUOLI, *La torsione della confisca di prevenzione per la soluzione del problema dell’evasione fiscale*, in [www.penalecontemporaneo.it](http://www.penalecontemporaneo.it), 12 marzo 2015, 22; F. MENDITTO, *Le confische nella prevenzione e nel contrasto alla criminalità ‘da profitto’ (mafie, corruzione, evasione fiscale)*, in [www.penalecontemporaneo.it](http://www.penalecontemporaneo.it), 2 febbraio 2015, 10.

<sup>121</sup> Cass., Sez. Un., 26.6.2014, n. 4880, in *Dejure*.

<sup>122</sup> A.M. MAUGERI, *La lotta all’evasione fiscale tra confisca di prevenzione e autoriciclaggio*, in *Diritto Penale Contemporaneo*, 4/2015: 191; F. MENDITTO, *Sulla rilevanza dei redditi non dichiarati al fisco ai fini del sequestro e della confisca di cui all’art. 12-sexies del d.l. n. 306/92*, in [www.penalecontemporaneo.it](http://www.penalecontemporaneo.it), 15 dicembre 2011; T. TRINCHERA, *La sentenza delle Sezioni Unite sulla rilevanza dei redditi non dichiarati al Fisco ai fini della confisca di prevenzione*, in [www.penalecontemporaneo.it](http://www.penalecontemporaneo.it), 23 settembre 2014; A. QUATTROCCHI, *La sproporzione dei beni nella confisca di prevenzione tra evasione fiscale e pericolosità sociale*, in *Giurisprudenza italiana*, 2015: 711.

### 3.7. Money laundering and mafia infiltration in businesses: Evidence from Italy

This paragraph describes the mafia's infiltration into the Italian legal economy and legitimate businesses, utilizing information from the UIF's Annual Report for 2023<sup>123</sup>, the Audition of the UIF's Director by the Parliamentary Commission of Inquiry into the Phenomenon of Mafias and Other Criminal Associations, Including Foreign Ones<sup>124</sup>, the investigations conducted by the Italian Finance Police ("Guardia di Finanza")<sup>125</sup>, and the Report for 2023 to the Italian Parliament on the Status of Action to Prevent Money Laundering and Terrorism Financing, prepared by the Financial Security Committee of the Treasury Department of the Ministry of Economy and Finance<sup>126</sup>.

This information relates to key aspects of this phenomenon, including the estimated total amount of money laundering in Italy, Suspicious Transaction Reports (STRs), and the subsequent investigation and enforcement activities. It also addresses the various types of STRs associated with organized crime, tax evasion, misuse of public funds, corruption, and computer fraud. Moreover, it identifies the most affected regions and sectors by the mafia, the crimes behind these STRs, the significant involvement of foreign criminal organizations in these transactions, and the growing use of advanced technologies, including cryptocurrencies, for laundering illegal proceeds.

A recent study estimates that money laundering globally accounts for 2 percent of the world's GDP, totaling \$1.5 trillion<sup>127</sup>. This remarkable figure has remained relatively constant over time, with surveys dating back to 2009 estimating it at around 2.7 percent of GDP, totaling \$1.6 trillion<sup>128</sup>.

<sup>123</sup> Mentioned BANCA D'ITALIA, UIF (Unità di Informazione Finanziaria per l'Italia), *Rapporto Annuale 2023*.

<sup>124</sup> E. SERATA, *Criminalità organizzata ed economia legale*, Audizione del dott. Enzo Serata Direttore dell'Unità di Informazione Finanziaria per l'Italia (UIF) della Commissione parlamentare di inchiesta sul fenomeno delle mafie e sulle altre associazioni criminali, anche straniere, Roma, 2024. <https://uif.bancaditalia.it/pubblicazioni/interventi/documenti/Serata-UIF-31.07.2024.pdf>.

<sup>125</sup> The Guardia di Finanza is the Italian police agency under the Ministry of Economy and Finance that deals economic and financial matters.

<sup>126</sup> MINISTERO DELL'ECONOMIA E DELLE FINANZE (MEF), COMITATO DI SICUREZZA FINANZIARIA, *Relazione al Parlamento sullo stato dell'azione di prevenzione del riciclaggio e del finanziamento del terrorismo per l'anno 2023*, elaborata ai sensi dell'articolo 4, comma 2, del decreto legislativo 21 novembre 2007, n. 231, Roma, 2024. <https://www.camera.it/temiap/2024/11/22/OCD177-7692.pdf>.

<sup>127</sup> Mentioned R. CARTWRIGHT and F. C. BONES, *Transnational organized crime and the impact on the private sector: The hidden battalions*.

<sup>128</sup> Mentioned UNODC (United Nations Office on Drugs and Crime), *Estimating Illicit Financial Flows Resulting from Drug Trafficking and Other Transnational Organized Crimes: Research Report*.

The Italian Finance Police estimates that the total amount of money laundering transactions in Italy is €3.3 billion annually, while self-laundering amounts to €2.3 billion, resulting in a combined total of €5.6 billion. The UIF of the Bank of Italy estimated that the value of money laundering in Italy from 2018 to 2022 was approximately 1.5 to 2.0 percent of the country's GDP. In 2023, the UIF analyzed 151,578 STRs, with a total value of €103.4 billion<sup>129</sup>.

The STRs are very important for later investigative and enforcement activities, as 89.3% were forwarded to investigative bodies. This shows the improved quality of these reports over time, thanks to collaboration between the UIF and those required to submit them, along with the UIF's publication of new anomaly indicators that took effect at the beginning of 2024<sup>130</sup>.

These STRs primarily focus on tax-related crimes, bribery, and misappropriation. In our country, many cases involve the improper receipt and misuse of publicly guaranteed financing, funding from PNRR, and construction bonuses. Analysis of crimes linked to suspicious transactions reveals that funding for corruption in public procurement and supplies to public administration<sup>131</sup> primarily originates from tax evasion and avoidance.

The Report to the Italian Parliament on the Status of Action to Prevent Money Laundering and Financing of Terrorism, prepared by the Financial Security Committee of the Treasury Department of the Ministry of Economy and Finance<sup>132</sup>, highlights that in Italy in 2023, anti-money laundering investigations under Legislative Decree No.231/2007 led to the indictment of 4,069 individuals for crimes under Articles 648-bis (Money Laundering), 648-ter (Use of Money, Goods or Benefits of Illicit Origin) and 648-ter 1 (Self-Money Laundering) of the Criminal Code. Two hundred eighty-seven of these individuals were arrested, with property and assets worth over €867 million seized. This report outlines the various criminal activities that contribute to the financial resources involved in money laundering and self-laundering. These proceeds originate from crimes such as tax fraud, which is linked to false invoicing and illicit payments for non-exis-

<sup>129</sup> Ibidem, 14-17.

<sup>130</sup> Ibidem, 17.

<sup>131</sup> M. SARGIACOMO L. IANNI, A. D'ANDREAMATTEO and S. SERVALLI, *Accounting and the fight against corruption in Italian government procurement: A longitudinal critical analysis (1992-2014)*, in *Critical Perspectives on Accounting*, 28, 2015: 89-96.

<sup>132</sup> Mentioned MINISTERO DELL'ECONOMIA E DELLE FINANZE (MEF), COMITATO DI SICUREZZA FINANZIARIA, *Relazione al Parlamento sullo stato dell'azione di prevenzione del riciclaggio e del finanziamento del terrorismo per l'anno 2023*.



tent credits, often facilitated by tax consultants. Other offenses include embezzlement, serious fraud aimed at obtaining public funds, usury, abusive financial practices, extortion, bankruptcy, corporate crimes, fraudulent asset transfers, receiving stolen goods, counterfeiting, bribery, and smuggling.

Money laundering in our country is not solely due to organized crime interests. More than 18 percent of STRs are closely related to organized crime, as they involve individuals connected to the mafia, according to findings from the information exchange with the National Anti-Mafia Directorate (“Direzione Nazionale Antimafia” – DNA). Additionally, 16 percent of reports are potentially linked to organized crime. There are also reports tied to tax evasion, which account for 19 percent of the total flow of reports, along with those related to the misuse of public funds and corruption. The 2023 Annual Report highlights that reports related to tax crimes often facilitate the laundering of proceeds from various other crimes perpetrated by organized crime groups.

STRs generated by businesses and individuals involved in companies connected to mafia activities or those of interest to judicial authorities, particularly the National Anti-Mafia Directorate, or identified as under investigation for mafia crimes, according to press reports, were categorized as potentially linked to organized crime. Based on this information, the UIF Annual Report for 2020 estimated that over 106,000 businesses were potentially linked to organized crime, representing about 2 percent of the total number of registered companies in the business registry from 2005 to 2020<sup>133</sup>. These businesses were mainly concentrated in Calabria, Campania, and Sicily, although the highest financial transactions also came from companies in central and northern Italy<sup>134</sup>. In 2023, 18 percent of these reports were related to Lombardy, 14.5 percent to Campania, 12.6 percent to Lazio, and 6.3 percent to Sicily. Rome (10.3 percent), Milan (9.8 percent), and Naples (9.7 percent) are the top three provinces in terms of the concentration of suspicious transactions linked to organized crime. STRs are concentrated not only in southern Italian regions but also in northern and central provinces, particularly Rome, Milan, and Brescia.

STRs related to organized crime are mainly concentrated in the retail and wholesale sectors of consumer goods, as well as ICT (Information and Communication Technology), construction, and financial services.

<sup>133</sup> BANCA D'ITALIA, UIF (Unità di Informazione Finanziaria per l'Italia), *Rapporto Annuale 2020*, riquadro: Una mappatura sperimentale delle imprese potenzialmente connesse a contesti di criminalità organizzata, 47-48.

<sup>134</sup> Ibidem, 47-48.



Regarding money laundering, the gaming and betting sector is particularly significant, accounting for 5 percent of the total STRs, with individuals of interest to the National Anti-Mafia Directorate (DNA) involved in 42% of cases. The renewable energy sector is also noteworthy, with numerous transactions involving land purchases for photovoltaic system installations. When discussing the sectoral distribution of suspicious transactions, the report references a recent study indicating that the highest incidence is linked to sectors such as retail distribution, construction, transport and logistics, waste collection and disposal, and electricity and gas supply. Moreover, the interest of mafia syndicates in bidding for state property concessions is confirmed, often through complex contractual dealings and the involvement of *ad hoc* criminal companies.

### **3.8. Strategies of criminal firms in the Digital Era: Internationalization, diversification, specialization, networking, and digital innovation**

Internationalization and diversification, along with the increased use of advanced technologies, are strategies employed by criminal organizations not only to evade law enforcement and judicial investigations but also to increase their chances of laundering growing amounts of illegal money and generating profits, especially since opportunities to invest this money in the local economy are limited.

The globalization of criminal organizations has adopted characteristics similar to those of legitimate multinational companies, with operations distributed globally<sup>135</sup>. They operate on a multinational scale to exploit commercial opportunities wherever they arise. One example is the Mexican drug cartels, which operate as global companies that expand when opportunities arise to broaden their customer base<sup>136</sup>. Like legitimate businesses, criminal enterprises tend to consolidate a national base of operations before expanding abroad, starting with trade, followed by foreign direct investment, the creation of overseas subsidiaries, and the formation of alliances. Other unions, such as Black Axe, based in Nigeria, are “born global,” as they aim to exploit opportunities in multiple countries from the outset<sup>137</sup>.

<sup>135</sup> A. SHORTLAND and F. VARESE, *State-building, informal governance and organized crime: The case of Somali piracy*, in *Political Studies*, 64(4), 2016: 811-831.

<sup>136</sup> POP V., *Mexico cartels set up shop in Europe*, in *The Wall Street Journal*, December 2020. 09: A9.

<sup>137</sup> Mentioned P. J. BUCKLEY, P. ENDERWICK, L. HSIEH and O. SHENKAR, *International business theory and the criminal multinational enterprise*.

The geographic spread of organized criminal groups in central and northern Italy no longer meets their expansion goals, nor does it provide enough opportunities to launder the large amounts of illegal money they generate. These criminal groups are increasingly capturing a larger share of global activities, expanding their operations beyond traditional areas, and infiltrating legitimate markets in regions with no history of mafia presence<sup>138</sup>.

The significant internationalization of Italian organized crime activities is also evident indirectly, as 40% of money laundering cases involved foreign financial counterparts<sup>139</sup>.

The UIF reveals that Italian clans are increasingly partnering with criminal organizations from other nations, each specializing in different areas of illegal activity while utilizing advanced technologies. Investigations conducted by the Guardia di Finanza, also prompted by the STRs, reveal that Italian organized crime collaborates with criminal organizations from other countries, each specializing in one or more areas of illicit activity. Transnational financial transactions related to drug trafficking are often facilitated by Chinese operators, who enable the virtual transfer of funds abroad through a system of informal clearing between “correspondent” entities. These new operational methods of organized crime in the drug trafficking sector will be discussed below. The Nigerian mafia appears to be linked to reports of computer scams, including phishing, business email compromise, CEO fraud, online trading fraud, romance scams, and charity scams. Furthermore, there are reasons to suspect potential collaboration with various foreign criminal organizations involved in migrant trafficking.

The FBI reports that in the United States of America, the Italian Mafia is infiltrated and actively collaborates with other international criminal groups in drug trafficking, money laundering, illegal gambling, political corruption, extortion, kidnapping, fraud, counterfeiting, murder, attacks, arms trafficking, and infiltration of legitimate businesses<sup>140</sup>.

The growing internationalization<sup>141</sup> does not only concern the Italian mafia groups but also other criminal organizations across European coun-

<sup>138</sup> Mentioned L. MIRENDA, S. MOCETTI and L. RIZZICA, *The economics effects of mafia: firm level evidence*.

<sup>139</sup> Mentioned BANCA D'ITALIA, UIF (Unità di Informazione Finanziaria per l'Italia), *Rapporto Annuale 2020*.

<sup>140</sup> <https://www.fbi.gov/investigate/transnational-organized-crime>.

<sup>141</sup> For a comparison between criminal multinational enterprises (CMNEs) and their legitimate competitors, exploring the increasing internationalization of criminal enterprises: Mentioned P. J. BUCKLEY, P. ENDERWICK, L. HSIEH and O. SHENKAR, *International business theory and the criminal multinational enterprise*.

tries. According to Europol's 2017 report, the number of internationally active Organized Crime Groups (OCGs) in the EU rose significantly from at least 3,600 in 2013 to around 5,000 by 2017. This growth can be attributed to two main factors: improved investigative methods that have enhanced detection and the rise of smaller, internet-based criminal networks that operate without the need for a large physical presence or manpower<sup>142</sup>. Europol Report for 2021 shows that almost 70 percent of organized crime networks operate in more than three countries<sup>143</sup>, while 20 percent are active in over seven countries<sup>144</sup>. In Europe, nearly two-thirds (65 percent) of criminal groups comprise members from various nationalities. This multi-ethnic composition is significant due to the role of nationality and ethnicity in facilitating international collaboration among these criminal groups<sup>145</sup>.

The 2017 Europol report shows that 30-40% of international groups adopt flexible networking strategies with other groups. These strategies are implemented on a case-by-case basis, depending on the activities to be carried out, and are temporary, as these collaborations often end once the activity for which they were created has ended. This organized crime networking strategy, however, does not apply to all criminal activities but is specific to cybercrime.

To address the supranational issue of organized crime, the European Union created Europol in 2000. This law enforcement agency assists EU member states by providing a wide range of information services, analytical support, and estimates related to crime and terrorism across Europe. Through its collaborative efforts, Europol enhances the capacities of individual countries to fight and prevent criminal activities that transcend na-

<sup>142</sup> Established as an EU agency in 2009 Europol, or the European Police Office, "offers a unique range of services. Europol is a support centre for law enforcement operations, a hub for information on criminal activities as well as a centre for law enforcement expertise. Analysis is at the core of Europol's activities. To give its partners deeper insights into the crimes they are tackling, Europol produces regular assessments that offer comprehensive, forward-looking analyses of crime and terrorism in the EU". Mentioned, EUROPOL, SOCTA 2017, European Union, Serious and Organised Crime Threat Assessment, *Crime in the age of technology*, 7.

<sup>143</sup> Mentioned EUROPOL, SOCTA 2021, European Union, Serious and Organised Crime Threat Assessment, *A Corrupting Influence: The Infiltration and Undermining of Europe's Economy and Society by Organised Crime*, 19.

<sup>144</sup> Mentioned, Europol, SOCTA 2017, European Union, Serious and Organised Crime Threat Assessment, *Crime in the age of technology*, 15.

<sup>145</sup> Mentioned EUROPOL, SOCTA 2021, European Union, Serious and Organised Crime Threat Assessment, *A Corrupting Influence: The Infiltration and Undermining of Europe's Economy and Society by Organised Crime*, 20.

tional borders, facilitating a more coordinated response to organized crime and helping member states share intelligence and resources effectively.

The UIF Annual Report for 2023<sup>146</sup>, highlights how foreign entities operating within our country are partnering with their Italian counterparts to transfer funds overseas, primarily to Asian countries, occasionally to Eastern European countries. The scheme is the following: a company receives invoices for nonexistent purchase transactions from shell companies, known as “Paper mills” or “Cartiere”. In exchange for the fictitious costs, they make transfers on behalf of these companies. These shell companies transfer part of the supplies to a network of numerous individuals and entities, which collect the sums received via bank transfer, and later return the cash to the criminal organization. The money sent abroad, typically to foreign bank accounts of companies, is subsequently reintroduced into the national territory through so-called “Money mules” or “Spalloni” and returned in cash to the criminal organization after deducting the commissions owed to the foreign organization.

In recent years, criminal organizations have changed their methods for money laundering in response to a series of anti-money laundering measures, particularly those related to electronic invoicing, the traceability of financial transactions, and the reduction of cash transaction limits. These measures have created an external shock that has reduced the use of false invoices for laundering illicit money through companies and diverting funds from them<sup>147</sup>.

Criminal organizations also use a secret banking system to transfer large amounts of illicit money secretly, called “hawala”, an informal banking system of Islamic origin. This method of money transfer relies on the absence of a paper trail and mutual trust between intermediaries in the network. No documents are exchanged between intermediaries; transactions and payment commitments depend solely on honor. To illustrate how this system works, an example is helpful. When a drug trafficker needs to pay a drug cartel, he gives the owed amount to a broker in the shadow banking network. The broker then contacts another broker within the laundering network in the country where the payment is to be made, and this second broker pays the drug cartel. The two brokers agree on the fees for the transaction and the exchange rate if the transfer involves different cur-

<sup>146</sup> Mentioned BANCA D'ITALIA, UIF (Unità di Informazione Finanziaria per l'Italia), *Rapporto Annuale 2023*.

<sup>147</sup> Mentioned P. A. BIANCHI, A. MARRA, D. MASCIANDARO and N. PECCHIARI, *Organized crime and firms' financial statements: Evidence from criminal investigations in Italy*.

rencies. No money is exchanged between the drug traffickers and the drug cartel. The two brokers in the network settle their credit relationships by purchasing a batch of goods for an equivalent amount or by offsetting previous debts and credits.

These groups also diversify by criminal lines of business, not just by geographic area. Approximately 40 percent of the OCGs are active in multiple criminal fields of activity<sup>148</sup>.

The mentioned UIF Annual Report for 2023<sup>149</sup> shows that organized crime is increasingly adopting new money laundering techniques that make it more difficult to trace the illicit origins of funds. In addition to the previously mentioned traditional methods, organized crime increasingly employs innovative and complex techniques, such as:

- Corporate shielding through trust companies, trusts, or patrimonial funds complicates the tracing of illicit funds.
- Foreign organized crime groups manage the distribution of money remittances sent abroad, either through official transfer methods or informal channels known as underground banking.
- Fictitious commercial transactions, such as over-invoicing and under-invoicing, are used to facilitate legitimate money transfers, commonly referred to as trade-based money laundering.
- Investment crowdfunding platforms also contribute.

In the digital era, the mafia uses the most advanced technologies and has widely infiltrated the legal economy and legitimate businesses to hide criminal activities and illicit profits and for money laundering<sup>150</sup>.

Criminals are skilled at using digital technologies because they are digital natives. Almost all criminal activity today incorporates some element online, and some phenomena have moved entirely to digital technology. Online marketplaces on both the surface web and the dark web provide access to illicit goods and services. Digital platforms, social media, and instant messaging services also facilitate encrypted communications for networking and payment solutions<sup>151</sup>. The ability to promptly grasp tech-

<sup>148</sup> Mentioned EUROPOL, SOCTA 2021, European Union, Serious and Organised Crime Threat Assessment, *A Corrupting Influence: The Infiltration and Undermining of Europe's Economy and Society by Organised Crime*, 19.

<sup>149</sup> Mentioned BANCA D'ITALIA, UIF (Unità di Informazione Finanziaria per l'Italia), *Rapporto Annuale 2023*.

<sup>150</sup> Ibidem, 10.

<sup>151</sup> Mentioned EUROPOL, SOCTA 2021, European Union, Serious and Organised Crime Threat Assessment, *A Corrupting Influence: The Infiltration and Undermining of Europe's Economy and Society by Organised Crime*, 15.

nological developments in the financial system and exploit them to one's advantage is demonstrated through digital platforms employed for financial and payment services, as well as access to public facilitation measures<sup>152</sup>.

The technological leap of the mafia is confirmed by the massive use of cryptocurrency purchases to launder the proceeds from collaborations with foreign mafias<sup>153</sup>. Purchasing cryptocurrencies complicates the identification of the beneficial owner and the source of the funds. Consequently, they are also used for illegal activities such as money laundering and buying narcotics or goods of unlawful origin. These innovative tools are also used to launder substantial amounts of illicit money in our country. The mentioned UIF Annual Report for 2023 highlights an international money laundering operation conducted in Naples by an organization that offered clients the opportunity to invest illicit proceeds abroad, including in cryptocurrencies. Between 2018 and 2023, this operation transferred over €2.6 billion, with €1.5 billion linked to Italian clients and involving more than 6,000 customers.

Moreover, organized crime is no longer limited to typical mafia crimes and now includes cybercrime, migrant smuggling, organized property crime, and the trafficking of human beings. Drug trafficking, human trafficking, and migrant smuggling remain the main markets, offering the most significant profits and attracting the largest number of criminal organizations. However, according to the 2017 Europol Report, there are emerging markets, such as online trade in illicit goods and services, that look very promising as they could eclipse traditional markets in terms of profits generated in the future<sup>154</sup>.

<sup>152</sup> A. M. TARANTOLA, *Dimensione delle attività criminali, costi per l'economia, effetti della crisi economica*, Commissione parlamentare di inchiesta sul fenomeno della mafia e sulle altre associazioni criminali, anche straniere, Testimonianza del Vice Direttore Generale della Banca d'Italia, Senato della Repubblica, Camera dei Deputati, 6, 2012.

<sup>153</sup> J. ARELLANO-BOVER, M. DE SIMONI, L. GUISO, R. MACCHIAVELLO, D. J. MARCHETTI and M. PREM, *Mafias and Firms*, 2024, Discussion Paper n. 16893, IZA Institute of Labour Economics (marzo). [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4793899](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4793899).

<sup>154</sup> Ibidem, 14.



#### 4.1. Negative externalities of the mafia on legitimate businesses

Companies infiltrated (or controlled) by the mafia gain an unfair competitive advantage over legitimate businesses by selling at unprofitable prices to launder large amounts of illicit capital, exploiting the protection of organized crime<sup>1</sup>, and engaging in illegal practices such as paying lower wages, tax evasion<sup>2</sup>, and non-compliance with environmental and safety regulations<sup>3</sup>. This distorts market rules and competition, causing a misallocation of resources<sup>4</sup>.

Mehlum et al. demonstrate that predatory practices, such as extortion by criminal organizations, are emerging in developing countries, reducing business profitability and investment. As a result, these economies can become trapped in a vicious cycle of poverty and predation,

<sup>1</sup> P. ARLACCHI, *Mafia, peasants and great estates: Society in traditional Calabria*, CUP Archive, 1983; Mentioned P. ARLACCHI, *La mafia imprenditrice. Dalla Calabria al centro dell'inferno*.

<sup>2</sup> Mentioned G. ALBANESE and G. MARINELLI, *Organized crime and productivity: Evidence from firm-level data*; Mentioned J. CHIRCOP, M. FABRIZI, P. MALASPINA and A. PARBONETTI, *Anti-Mafia Police Actions, Criminal Firms, and Peer Firm Tax Avoidance*.

<sup>3</sup> Mentioned A. LA SPINA and G. LO FORTE, *I costi dell'illegalità*.

<sup>4</sup> Mentioned R. GANAU and A. RODRÍGUEZ-POSE, *Industrial clusters, organized crime, and productivity growth in Italian SMEs*; D. MARINO, F. TIMPANO and J. G. LAFUENTE, *The competition between legal and illegal firms in the market: Theoretical models and empirical evidence*, in *European Research on Management and Business Economics*, 29(3), 2023: 100228; Mentioned L. MIRENDA, S. MOCETTI and L. RIZZICA, *The economics effects of mafia: firm level evidence*; Mentioned E. U. SAVONA and G. BERLUSCONI (Eds.), *Organized Crime Infiltration of Legitimate Businesses in Europe: A Pilot Project in Five European Countries. Final Report of Project ARIEL - Assessing the Risk of the Infiltration of Organized Crime in EU MSs Legitimate Economies: a Pilot Project in 5 EU Countries* ([www.arielproject.eu](http://www.arielproject.eu)).



from which poor society with a high number of new entrepreneurs can emerge<sup>5</sup>.

Legitimate businesses face various negative constraints imposed by organized crime, such as the costs associated with paying large sums to extortion rackets<sup>6</sup>. Entrepreneurs are often forced to apply a markup to recoup the “pizzo” paid<sup>7</sup>, making them less competitive than others who aren’t subject to extortion. Extortion also increases their need for liquidity, which increases debt<sup>8</sup> and financial costs, thereby reducing their income.

La Rosa et al.<sup>9</sup> highlight how paying extortion rackets can lead to a company’s involvement with illegal networks, resulting in legal consequences (when law enforcement discovers these relationships), as well as those deriving from the inherent instability and turbulence of these relationships, which can trigger conflicts<sup>10</sup>. However, paying protection money can also have positive effects, such as obtaining favors from corrupt public officials, resolving disputes without resorting to the legal system, and gaining advantages over legitimate companies in competition<sup>11</sup>. On the other hand, refusing to pay protection money and joining anti-racketeering groups can lead to positive outcomes like better cooperation with other companies in the network and an improved reputation, which acts as a kind of reward from society. Meanwhile, companies that agree to pay the

<sup>5</sup> Mentioned H. MEHLUM, K. MOENE and R. TORVIK, *Predator or prey? Parasitic enterprises in economic development*, in *European Economic Review*, 47(2), 2003: 275-294.

<sup>6</sup> Mentioned R. GANAU and A. RODRÍGUEZ-POSE, *Industrial clusters, organized crime, and productivity growth in Italian SMEs*; K. A. KONRAD and S. SKAPERDAS, *Credible threats in extortion*, in *Journal of Economic Behavior & Organization*, 33(1), 1997: 23-39.

<sup>7</sup> Mentioned CONFESERCENTI, *Le mani della criminalità sulle imprese*.

<sup>8</sup> F. LA ROSA, S. PATERNOSTRO and L. PICCIOTTO, *The effects of the anti-mafia entrepreneurial behavior on firm performance: an empirical study on southern Italian small-medium enterprises*, in DI CAGNO N., INVERNIZZI G., MECHELLI A. and UGOLINI M., (a cura di), *Il ruolo dell’azienda nell’economia. Esiste un modello aziendale orientato alla crescita?*, Il Mulino, Bologna, 2015.

<sup>9</sup> Mentioned F. LA ROSA, S. PATERNOSTRO and L. PICCIOTTO, *The effects of the anti-mafia entrepreneurial behavior on firm performance: an empirical study on southern Italian small-medium enterprises*.

<sup>10</sup> G. DE JONG, P. TU and H. VAN EES, *Which Entrepreneurs Bribe and What Do They Get from It? Exploratory Evidence from Vietnam*, in *Entrepreneurship Theory and Practice*, 36, 2, 2010: 323-345.

<sup>11</sup> Mentioned D. GAMBETTA, *The Sicilian Mafia. The Business of Private Protection*; Falcone, G., *Interventi e proposte (1982-1992)*, Firenze: Sansoni, 1994; V. KUMAR and S. SKAPERDAS, *Organized Crime*, in N. GAROUPA (Eds.), *Criminal Law and Economics*, Cheltenham, UK: Edward Elgar, 2009; Mentioned R. SCIARRONE, *Mafie vecchie mafie nuove*; Mentioned G. DE JONG, P. TU and H. VAN EES, *Which Entrepreneurs Bribe and What Do They Get from It? Exploratory Evidence from Vietnam*.

racket often see their reputation decline<sup>12</sup>. To verify whether anti-mafia entrepreneurial behavior improves the performance of enterprises, researchers compared the results of firms that adopt such behavior by refusing to pay protection money and publicly declaring their decision by joining an anti-mafia association (specifically, Addiopizzo) with neutral firms. The latter were selected using a matched-pair study design, which compared the performance of anti-mafia firms with other firms that were as similar as possible, except for anti-mafia behavior. In the neutral group, those who pay protection money were estimated to be more numerous than those who do not. This comparison demonstrated that, in the short term, the negative impacts on performance from deciding to join an anti-racketeering group outweigh the positive ones. Issues such as retaliation and difficulties in managing colluding or intimidated individuals appear to drive this effect.

La Rosa et al. also investigated the determinants of anti-mafia entrepreneurial behavior by comparing a sample of 116 Southern Italy SMEs that publicly opposed mafia extortion (anti-mafia firms) with a control group selected using a matched-pairs design. This study highlighted how both financial (ROCE and bank debt) and governance variables (concentration of ownership and the number of shareholders) are significant determinants of anti-mafia entrepreneurial behavior, while demographic variables are not significant. Adopting anti-mafia entrepreneurial behavior has a negative relationship with ROCE and a positive relationship with the amount of bank debt. At the same time, it is more likely when ownership is concentrated and shareholders are few<sup>13</sup>.

Legitimate companies also incur other costs from theft or damage to goods, deriving from revenge for refusing to pay<sup>14</sup>, and security expenses<sup>15</sup>.

A further negative influence arises from legal businesses being forced by organized crime to purchase inputs from suppliers colluded with crimi-

<sup>12</sup> J. M. KARPOFF, D. S. LEE and G. S. MARTIN, *The Cost to Firms of Cooking the Books*, in Journal of Financial and Quantitative Analysis, 43, 2009: 581-611; J. M. KARPOFF and J. R. LOTT, *The Reputational Penalty Firms Bear from Committing Criminal Fraud*, in Journal of Law & Economics, 36, 1993: 757-802.

<sup>13</sup> LA ROSA F., PATERNOSTRO S. and PICCIOTTO L., *Exploring the determinants of anti-mafia entrepreneurial behaviour: an empirical study on southern Italian SMEs*, in Entrepreneurship & Regional Development, 30(1-2), 2018: 81-117.

<sup>14</sup> A. VANNUCCI, *Istituzioni, costi di transazione e organizzazioni mafiose*, in Polis, XV, 3, 2001: 363-384.

<sup>15</sup> C. DETOTTO and E. OTRANTO, *Does crime affect economic growth?*, in Kyklos, 63(3), 2010: 330-345.

nal organizations<sup>16</sup>, and to hire people connected to criminal groups, even if they are not necessary or lack the skills and abilities needed. This form of conditioning of legitimate enterprises aims to increase the mafia's power and consensus in the territory.

Businesses' need for liquidity also raises, which increases debt and financial costs.

The theory of community social capital explains how crime increases the cost of doing business for legitimate enterprises by affecting the foundations of social capital in communities, such as trust, community identification, collaboration, and support<sup>17</sup>. Organized crime makes the business environment less safe, increases uncertainty<sup>18</sup> and risks, and reduces trust between economic agents and the propensity of enterprises to network with one another<sup>19</sup>.

By degrading the quality of the institutional and socio-economic environment, affecting government effectiveness, property rights security, judicial system efficiency, and increasing corruption levels, organized crime harms the reputation of the areas where it operates. This reputational damage affects social capital by reducing the attractiveness of foreign investment and foreign companies<sup>20</sup> and creates serious negative externalities for companies, new businesses, and startups<sup>21</sup>. Research has shown that a good reputation of the area in which new firms and startups are located plays a crucial role in reducing their inherent vulner-

<sup>16</sup> Mentioned D. GAMBETTA, *The Sicilian Mafia. The Business of Private Protection*; Mentioned G. ALBANESE and G. MARINELLI, *Organized crime and productivity: Evidence from firm-level data*.

<sup>17</sup> S. W. KWON, C. HEFLIN and M. RUEF, *Community social capital and entrepreneurship*, in *American Sociology Review*, 78(6), 2013: 980-1008.

<sup>18</sup> Mentioned DETOTTO C. and OTRANTO E., *Does crime affect economic growth*; Mentioned R. GANAU and A. RODRÍGUEZ-POSE, *Industrial clusters, organized crime, and productivity growth in Italian SMEs*, Daniele, 2009.

<sup>19</sup> Mentioned R. GANAU and A. RODRÍGUEZ-POSE, *Industrial clusters, organized crime, and productivity growth in Italian SMEs*.

<sup>20</sup> V. DANIELE and U. MARANI, *Organized crime, the quality of local institutions and FDI in Italy: A panel data analysis*, in *European Journal of Political Economy*, 27(1), 2011: 132-142; S. GLOBERMAN and D. SHAPIRO, *Global foreign direct investment flows: the role of governance infrastructure*. *World Development*, 30, 2002: 1899-1919; A. BÉNASSY-QUÉRÉ, M. COUPET and T. MAYER, *Institutional determinants of foreign direct investment*, in *World Economy*, 30, 2007: 764-782.

<sup>21</sup> H. BROADMAN and F. RECANATINI, *Where has all the foreign investment gone in Russia?*, in Policy Research Working Paper n. 2640, World Bank, Washington DC, 2001; UNODC (United Nations Office on Drugs and Crime), *Crime and Development in Central America. Caught in the Crossfire*, New York, 2007; WORLD BANK, *Global Development Finance: Building Coalitions for Effective Development Finance*, World Bank, Washington DC, 2001.

ability<sup>22</sup>. The fear of the mafia undermines trust and hampers new businesses' efforts to build a reputation and obtain the resources they need for survival and growth. Stakeholders, especially financiers, investors, suppliers, and other companies, consider it very risky to give trust and provide resources to a company operating in an area with a poor reputation due to a high level of organized crime presence.

The fear of crime also impacts companies' investment proclivity<sup>23</sup> and their level of innovation<sup>24</sup>. Investment in R&D is also discouraged<sup>25</sup>. Conversely, a strong rule of law, resulting from the effective functioning of judicial institutions and law enforcement, increases the intensity of innovation in patent activities in Italian provinces<sup>26</sup> and European regions<sup>27</sup>. Organized crime also discourages young people (and/or their parents) from investing in human capital and local companies from hiring those who decide to make this investment<sup>28</sup>.

In areas with a high presence of organized crime, the cost of debt is higher due to the increased security and protection costs incurred by banks<sup>29</sup>. The higher credit risk induces banks to reduce their propensity to grant loans not backed by collateral<sup>30</sup>.

<sup>22</sup> Mentioned M. G. BRUNA and D. NICOLÒ, *Corporate reputation and social sustainability in the early stages of start-ups: A theoretical model to match stakeholders' expectations through corporate social commitment*.

<sup>23</sup> Mentioned C. ASTARITA, C. CAPUANO and F. PURIFICATO, *The macroeconomic impact of organised crime: A post-Keynesian analysis*; Mentioned A. F. FORGIONE and C. MIGLIARDO, *Mafia risk perception: Evaluating the effect of organized crime on firm technical efficiency and investment proclivity*; Mentioned R. GANAU and A. RODRÍGUEZ-POSE, *Industrial clusters, organized crime, and productivity growth in Italian SMEs*; mentioned LA SPINA and G. LO FORTE, *I costi dell'illegalità*; Mentioned A. M. TARANTOLA, *Dimensione delle attività criminali, costi per l'economia, effetti della crisi economica*.

<sup>24</sup> G. SARIDAKIS, A. M. MOHAMMED and S. SOOKRAM, *Does crime affect firm innovation? Evidence from Trinidad and Tobago*, in *Economics Bulletin*, 35(2), 2015: 1205-15.

<sup>25</sup> Mentioned A. F. FORGIONE and C. MIGLIARDO, *Mafia risk perception: Evaluating the effect of organized crime on firm technical efficiency and investment proclivity*.

<sup>26</sup> J. PEIRÓ-PALOMINO and F. PERUGINI, *Regional innovation disparities in Italy: The role of governance*, in *Economic Systems*, 46(4), 2022: 101009.

<sup>27</sup> A. RODRÍGUEZ-POSE and M. DI CATALDO, *Quality of government and innovative performance in the regions of Europe*, in *Journal of Economic Geography*, 15, No. 4, 2015: 673-706.

<sup>28</sup> Mentioned M. CAVALIERI, M. FINOCCHIARO CASTRO and C. GUCCIO C., *Organised crime and educational outcomes in Southern Italy: An empirical investigation*.

<sup>29</sup> E. BONACCORSI DI PATTI, *Weak institutions and credit availability: the impact of crime on bank loans*, in Bank of Italy Occasional Paper, (52), 2009; Mentioned A. M. TARANTOLA, *Dimensione delle attività criminali, costi per l'economia, effetti della crisi economica*.

<sup>30</sup> Mentioned G. ALBANESE and G. MARINELLI, *Organized crime and productivity: Evidence from firm-level data*.

Due to these negative externalities, some legitimate companies operating in regions with a significant mafia presence leave the market, and new businesses face a formidable barrier to entry<sup>31</sup>. Consequently, firms controlled by the mafia often achieve monopolistic positions in the market<sup>32</sup>.

The literature highlights that legitimate businesses may, in some cases, engage in tax evasion<sup>33</sup> and profit management practices to survive competition from criminal enterprises<sup>34</sup>. This constitutes another negative effect, albeit indirect, of organized crime on the economy and society, as it triggers the spread of criminal activities to some companies that were previously operating within the law.

Organized crime can sometimes provide specific “advantages” to some companies, such as easier access to financing, quicker bureaucratic processes, and reduced competition. This phenomenon is referred to as “proximity propagandistic criminal welfare”<sup>35</sup>.

## **4.2. Organized crime and firms’ profitability in Italy: An analysis of the Bank of Italy’s INVIND Survey**

In this section, we summarize the findings of an analysis focused on firm-level characteristics relevant to understanding the impact of crime on businesses in Italy.

We conduct this analysis using the Bank of Italy’s “INVIND survey”<sup>36</sup>. This resource offers a comprehensive dataset of approximately 3,000 firms

<sup>31</sup> Mentioned P. SLUTZKY and S. ZEUME, *Organized Crime and Firms: Evidence from Antimafia Enforcement Actions*.

<sup>32</sup> E. CESQUI *L'Italia di fronte alla mafia*, in *Rivista di Studi e Ricerche sulla Criminalità Organizzata*, 3(4), 2017: 5-13; E. U. SAVONA and G. BERLUSCONI (Eds.), *Organized Crime Infiltration of Legitimate Businesses in Europe: A Pilot Project in Five European Countries. Final Report of Project ARIEL, Assessing the Risk of the Infiltration of Organized Crime in EU MSs Legitimate Economies: a Pilot Project in 5 EU Countries* ([www.arielproject.eu](http://www.arielproject.eu)), Transcrime - Università degli Studi di Trento, Trento, 2015.

<sup>33</sup> Mentioned J. CHIRCOP, M. FABRIZI, P. MALASPINA and A. PARBONETTI, *Anti-Mafia Police Actions, Criminal Firms, and Peer Firm Tax Avoidance*.

<sup>34</sup> H. CHO, S. CHOI, W. J. LEE and S. YANG, *Regional crime rates and corporate misreporting*, in *Spanish Journal of Finance and Accounting/Revista Española de Financiación y Contabilidad*, 49(1), 2020: 94-123; P. A. BIANCHI, A. MARRA, D. MASCIANDARO and N. PECCHIARI, *Organized crime and firms’ financial statements: Evidence from criminal investigations in Italy*, in *The Accounting Review*, 97(3), 2022: 77-106.

<sup>35</sup> F. LA ROSA and F. BERNINI, *Venture resilience, criminal approaches and the welfare state: entrepreneurial decisions and opinions one year after the COVID-19 outbreak*, in *Journal of Small Business and Enterprise Development*, 30(1), 2023: 144-166.

<sup>36</sup> I conducted this analysis in collaboration with Migliardo as part of the mentioned research project PRIN PNRR.

from Italy's industrial and service sectors, providing detailed insights into firm-specific attributes, including size, sector, location, ownership type, and internationalization, as well as perceptions of organized crime. The crimes captured in this survey, such as perceived threats, extortion attempts, and coercive practices, reveal the presence of organized crime because they are typically carried out by mafia-type organizations. This dataset includes several proxies that are useful for analyzing how perceived crime affects firms' operations and profitability.

We accessed the dataset through the Bank of Italy Remote Execution System, a secure platform that allows researchers to process data without direct access. This system protects the privacy of respondents to the questionnaire used for data collection.

The analysis revealed significant regional differences. Firms in Southern Italy reported higher perceived risks of organized crime, while the perception of the mafia remains more uniform across other regions.

We have found a strong negative correlation between perceived crime levels and corporate income, particularly in Southern Italy.

The survey also enables the assessment of potential adverse effects on businesses operating in areas with a high presence of crime, including difficulties in accessing formal financial services, unfavorable financing conditions, and increased uncertainty in business transactions.

Further interesting findings emerged regarding how the mafia conditions businesses in various sectors.

The service sector is particularly vulnerable to usury, especially in Southern Italy. Crime mainly infiltrates partnership companies, which are subject to fewer controls because they are not required to publish financial statements and other information about corporate governance and ownership.

Another form of aggression perpetrated by the mafia against companies is the acquisition of companies at non-market prices. It affects all sectors, although it is less common in the real estate and information and communication technology (ICT).

Extortion mainly impacts smaller businesses, especially those with fewer than 50 employees, in Southern Italy.

Cooperatives are less vulnerable to organized crime infiltration than other businesses. Possible reasons include the accountability requirements imposed on these organizations, which make it difficult to conceal financial transactions. Another potential cause is the fragmentation of capital among numerous members, each with one vote in meetings, which prevents organized crime from identifying who controls the company and from exerting intimidating influence over them.



Exporting companies do not show a greater perception of the mafia compared to other companies, but they suffer more from usury.

#### **4.3. The impact of organized crime on the profitability of high-growth startups: The case of Italian Gazelles**

The literature demonstrates that negative externalities in areas with a strong mafia presence hinder entrepreneurial initiatives<sup>37</sup> due to the fear of incurring additional costs and risks<sup>38</sup>. Organized crime also affects decisions to start businesses by reducing profit expectations<sup>39</sup> and increasing the risks of starting a new venture<sup>40</sup>. However, scholars have not investigated the effect of crime and organized crime on the performance of startups.

To fill this gap in the literature, we investigated the negative conditioning exerted by organized crime on the performance of Gazelle enterprises, a typology of high-growth startups<sup>41</sup>. The effect on performance was measured in terms of operating profitability, calculated with the ROA (Return on Assets) ratio, which is widely used as a performance indicator for SMEs<sup>42</sup> and high-growth companies<sup>43</sup>.

We chose to examine the impact of the mafia's presence on the operating profitability of these gazelles, rather than on all new businesses or innovative startups, because gazelles are highly sensitive to the quality

<sup>37</sup> Mentioned N. BARBIERI and U. RIZZO, *The impact of crime on firm entry*; Mentioned S. A. CHURCHILL, M. HAYWARD, R. SMYTH and T. A. TRINH, *Crime, community social capital and entrepreneurship: Evidence from Australian communities*.

<sup>38</sup> Mentioned D. R. BOWES, *A two-stage model of the simultaneous relationship between retail development and crime*; Mentioned D. F. KURATKO, J. S. HORNSBY, D. W. NAFFZIGER and R. M. HODGETTS, *Crime and small business: An exploratory study of cost and prevention issues in US firms*.

<sup>39</sup> Mentioned W. J. BAUMOL, *Entrepreneurship: Productive, unproductive, and destructive*; Mentioned G. S. BECKER, *Crime and punishment: An economic approach. The economic dimensions of crime*.

<sup>40</sup> Mentioned J. MATTI and A. ROSS, *Does crime affect entrepreneurship? A discussion of the current literature*.

<sup>41</sup> This research was carried out in the context of the mentioned PRIN PNRR research project to which this book belongs. Mentioned C. MIGLIARDO and D. NICOLÒ, *Mutual Spatial Proximity, Organized Crime, and the Profitability of High-Growth Startups: The Case of Italian Gazelle Enterprises*.

<sup>42</sup> J. FITZSIMMONS, P. STEFFENS and E. DOUGLAS, *Growth and profitability in small and medium sized Australian firms*, in Proceedings AGSE Entrepreneurship Exchange, Melbourne, 2005.

<sup>43</sup> D. B. AUDRETSCH, *Innovation and industry evolution*, Cambridge, USA: MIT Press, 1995; STEFFENS P., DAVIDSSON P. and FITZSIMMONS J., *Performance configurations over time: implications for growth-and profit-oriented strategies*, in Entrepreneurship theory and practice, 33(1), 2009: 125-148.

of their context. Literature has shown that firms grow at high rates in the early stage by exploiting valuable resources<sup>44</sup> present in their environment, including intangible assets such as knowledge<sup>45</sup>, human capital<sup>46</sup>, and technology spillovers<sup>47</sup>. These intangible assets are also crucial for the resilience of these gazelle startups<sup>48</sup>. They are not uniformly distributed across contexts and are mainly concentrated in regions with high-quality institutions, where crime and corruption are low. Furthermore, elevated levels of education, which fuel the human capital present in the context, are generally associated with lower crime rates, as they enhance opportunities for legal employment<sup>49</sup>. This is because regions with significant investment in research, innovation, and human capital offer legal earning opportunities to firms<sup>50</sup>. In contrast, these intangible resources are often scarce in

<sup>44</sup> D. B. AUDRETSCH and D. DOHSE, *Location: A neglected determinant of firm growth*, in Review of World Economics/Weltwirtschaftliches Archiv.: 79-107; M. FRITSCH, *New business formation and regional development: a survey and assessment of the evidence*, in Foundations and Trends® in Entrepreneurship, 9(3), 2013: 249-364; E. GARNSEY and H. L. SMITH, *Proximity and complexity in the emergence of high technology industry: the Oxbridge comparison*, in Geoforum, 29(4), 1998: 433-450.

<sup>45</sup> G. BARBOZA and A. CAPOCCHI, *Innovative startups in Italy. Managerial challenges of knowledge spillovers effects on employment generation*, in Journal of Knowledge Management, 24(10), 2020: 2573-2596; A. CAVALLO, A. GHEZZI, A. COLOMBELLI and G. L. CASALI, *Agglomeration dynamics of innovative startups in Italy beyond the industrial district era*, in International Entrepreneurship and Management Journal, 16, 2020: 239-262.

<sup>46</sup> G. CATTAFI, A. DEL POZZO and D. NICOLÒ, *People first! Intellectual capital and growth of high-growth social cooperatives (social gazelles) in the startup stage. Evidences from Italy*, in Small Business Piccola Impresa, 1, 2023; G. CATTAFI, G. MARIANI, F. PISTOLESI and D. NICOLÒ, *Cheating in the evaluation. An expedient to estimate the impact of intangibles on the enterprise value of the high-growth startups*, in Management Control, 2023/3.

<sup>47</sup> W. R. KERR and S. D. KOMINERS, *Agglomerative forces and cluster shapes*, in Review of Economics and Statistics, 97(4), 2015: 877-899; Mentioned A. CAVALLO, A. GHEZZI, A. COLOMBELLI and G. L. CASALI, *Agglomeration dynamics of innovative startups in Italy beyond the industrial district era*.

<sup>48</sup> D. NICOLÒ and B. RICCA, *Human Capital Qualification and Resilience of High-growth Start-ups (Gazelles). COVID-19 as a Natural Experiment*, in S. LOPREVITE, S. MARASCA, D. NICOLÒ, M. RUISI and C. TEODORI (Eds.), *Startups and Gazelle Enterprises. Insights into the Success and Challenges of High-Growth Firms*, SIDREA Series in Accounting and Business Administration, Springer Cham, 2025.

<sup>49</sup> L. LOCHNER and E. MORETTI, *The Effect of Education on Crime: Evidence from Prison Inmates, Arrests, and Self-Reports*, in American Economic Review, 94(1), 2004: 155-189. S. MACHIN, O. MARIE and S. VUJIĆ, *The Crime Reducing Effect of Education*, in Economic Journal, 121(552), 2011: 463-484.

<sup>50</sup> D. ACEMOGLU and J. A. ROBINSON, *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*, in Crown Business, 2012; R. FLORIDA, *The Rise of the Creative Class*, Basic Books, 2002. D. C. NORTH, J. J. WALLIS and B. R. WEINGAST, *Violence and Social Orders: A Conceptual Framework for Interpreting Recorded Human History*, Cambridge University Press, 2009; WORLD BANK, *World Development Report 2011: Conflict, Security, and Development*, World Bank Publications, 2011.



contexts with low-quality institutions where the presence of crime and corruption is high. Weak institutions are frequently associated with high crime rates due to ineffective law enforcement, corruption, and a lack of trust in the legal system<sup>51</sup>.

Adverse effects stemming from the presence of organized crime on the operating profitability in terms of ROA (Return on Assets) of these Gazelles, assessed indirectly through the “rule of law” index, a composite metric at the provincial level<sup>52</sup>. By incorporating this index into our econometric model, we assessed how the rule of law influences the performance of Gazelles in areas affected by organized crime<sup>53</sup>.

Although the literature shows that startups underperform in regions with weak legal protections<sup>54</sup>, no studies have examined the relationship between organized crime and high-growth startups. A relevant presence of organized crime negatively impacts companies’ willingness to invest in innovation and R&D<sup>55</sup>.

For this reason, we hypothesized that the performance of Gazelles is negatively affected by the presence of organized crime in their context, given that the growth and results of these startups depend heavily on investments in innovation and R&D. This hypothesis is far from obvious, given that, as we have already said in paragraph 4.1, some studies demonstrate that some law-abiding companies operating in proximity to mafia companies benefit some “advantages” (“proximity propagandistic criminal welfare”) such as easier access to financing, quicker bureaucratic processes, and reduced competition<sup>56</sup>.

<sup>51</sup> P. FAJNZYLBER, D. LEDERMAN and N. LOAYZA, *Inequality and Violent Crime*, in *Journal of Law and Economics*, 45(1), 2002: 1-39; R. LA PORTA, F. LOPEZ-DE-SILANES, A. SHLEIFER and R. VISHNY, *The Quality of Government*, in *Journal of Law, Economics, and Organization*, 15(1), 1999: 222-279.

<sup>52</sup> Mentioned A. NIFO and G. VECCHIONE, *Do institutions play a role in skilled migration? The case of Italy*.

<sup>53</sup> This study is currently still ongoing and is investigating the effects of the presence of the mafia assessed using the composite indicator estimated by the research unit of the University of Messina of the mentioned PRIN PNRR project on other dimensions of performance, such as technical efficiency, profitability on sales (ROS), as well as the operating profitability of assets (ROA).

<sup>54</sup> X. LUO, F. HUANG, X. TANG and J. LI, *Government subsidies and firm performance: Evidence from high-tech start-ups in China*, in *Emerging Markets Review*, 49, 2021: 100756.

<sup>55</sup> Mentioned A. F. FORGIONE and C. MIGLIARDO, *Mafia risk perception: Evaluating the effect of organized crime on firm technical efficiency and investment proclivity*.

<sup>56</sup> Mentioned F. LA ROSA and F. BERNINI, *Venture resilience, criminal approaches and the welfare state: entrepreneurial decisions and opinions one year after the COVID-19 outbreak*.

These enterprises represent a small percentage of new businesses that grow rapidly in the early stages. In Italy, approximately 1%, according to ISTAT. The sample selection was made considering the new Italian companies founded in 2014 that obtained the Gazelle status in 2018 or 2019 (i.e., the five-year cohort from 2014 to 2019).

To allow comparison with the existing literature, the sample was selected using the size and growth thresholds specified in the following definition of a Gazelle firm from the Eurostat-OECD Handbook on Business Demographic Statistics<sup>57</sup> (Eurostat-OECD, 2008), which is increasingly used by scholars<sup>58</sup>:

gazelles are “All enterprises up to 5 years with an average annualized growth of more than 20% per annum, over a three-year period... Growth can be measured by the number of employees or by turnover”. The Eurostat-OECD Manual recommends setting a minimum size threshold of 10 employees at the beginning of the three-year growth period to prevent the growth of small businesses from distorting results. This minimum size threshold effectively excludes marginal firms.

We excluded companies classified under NACE Rev2 in sectors represented by the letters “K” for Financial and Insurance Activities (64-66) and “O” for Public Administration, Defense, and Compulsory Social Security (84), because firms in these sectors use different financial statement schemes than others, including them in the analysis would have distorted the results. Furthermore, cooperatives and consortia were excluded from the sample as they are non-profit organizations, which makes it meaningless to evaluate their performance in terms of profitability.

Based on the above criteria, the dataset included 1,144 gazelles, and 6,864 observations were analyzed from 2014 to 2019.

We analyzed the financial statements of these companies from the Aida Bureau Van Dijk database to assess the impact of organized crime on the operating profitability of Gazelle startups, measured by ROA (Return on Assets). As previously mentioned, the presence of the mafia in each region was assessed indirectly using the composite indicator “rule of law”<sup>59</sup>.

<sup>57</sup> EUROSTAT-OECD, *Manual on Business Demography Statistics*, 2008.

<sup>58</sup> D. B. AUDRETSCH, *Determinants of high-growth entrepreneurship*, Report prepared for the OECD/DBA International Workshop on “High-Growth Firms: local policies and local determinants, 2012; A. COAD, S. O. DAUNFELDT, W. HÖLZL, D. JOHANSSON and P. NIGHTINGALE, *High-growth firms: introduction to the special section*, in *Industrial and Corporate Change*, 23(1), 2014: 91-112; S. O. DAUNFELDT, D. JOHANSSON and D. HALVARSSON, *Using the Eurostat-OECD definition of high-growth firms: a cautionary note*, in *Journal of Entrepreneurship and Public Policy*, 4(1), 2015: 50-56.

<sup>59</sup> As independent variables, the model included several factors influencing profitability, such as size in terms of employee count and total asset investments, the ratio

Additionally, the model considered the industry variable in which gazelles operate due to the sector's influence on company profitability. Finally, the purchasing power of citizens was analyzed through the logarithm of per capita income tax and year dummy variables.

The study underscored how gazelles' operating profitability is positively influenced by mutual proximity and negatively impacted by the perception of crime in their respective contexts. Our study also examined the positive effects of mutual proximity on the performance of these high-growth startups, deriving from knowledge and technology spillovers between companies located in proximity to each other<sup>60</sup>.

In another ongoing study, we demonstrated that organized crime and corruption distort competitive processes and market prices, impacting companies' profitability and the opportunities for new ventures to evolve into high-growth startups differently in each region of Italy. These findings emerge from an empirical analysis using the Gazelle Transformation Index (GTI) as the dependent variable in a WLS panel regression model<sup>61</sup>. This result highlights the importance of transparent institutions and a robust legal framework for fostering entrepreneurship.

These studies are relevant because new firms and startups play a crucial role in growth, especially in developing countries<sup>62</sup>.

of intangibles to total assets, and human capital endowment measured by value-added per total employee cost and total labor costs per employee. Some liquidity indicators were also utilized, such as the liquidity ratio (current assets divided by short-term liabilities) and its square to approximate slack in available financial resources. We also assessed the potential slack of financial resources using the leverage (debt/equity) ratio. Financial leverage and the long-term debt-to-total assets ratio were considered to assess the financial risk rate, which also reflects financial risk.

<sup>60</sup> Mentioned C. MIGLIARDO and D. NICOLÒ, *Mutual Spatial Proximity, Organized Crime, and the Profitability of High-Growth Startups: The Case of Italian Gazelle Enterprises*.

<sup>61</sup> D. MARINO and D. NICOLÒ (working paper), *Innovation, Organized Crime, Corruption, and some firms' characteristics Influencing Startups' Growth: The Gazelle Transformation Index (GTI)*.

<sup>62</sup> Mentioned H. MEHLUM, K. MOENE and R. TORVIK, *Predator or prey? Parasitic enterprises in economic development*, in *European Economic Review*, 47(2), 2003: 275-294.

#### 4.4. The effect of organized crime on firms' technical efficiency in the civil engineering sector in Italy

Literature has shown that organized crime negatively affects productivity<sup>63</sup>, productivity growth<sup>64</sup>, labor productivity<sup>65</sup>, and technical efficiency<sup>66</sup> in legitimate businesses.

Forgione and Migliardo<sup>67</sup> investigated the impact of organized crime on the technical efficiency of Italian civil engineering firms.

This study is valuable for several reasons. First, the Italian Anti-Mafia Investigation Directorate has identified the civil engineering sector as highly vulnerable to mafia infiltration because of its heavy reliance on public procurement and the widespread use of subcontracting. Second, it is among the sectors most vulnerable to racketeering and unfair competition by organized crime<sup>68</sup>. Furthermore, the civil engineering sector plays a vital role in the economy, representing about 9% of EU GDP (around 8% in Italy).

This study is based on a survey of a sample of 2,415 Italian companies operating in the civil engineering sector, extracted from the Aida database of Bureau van Dijk, and analyzed from 2014 to 2019.

By integrating their mafia composite indicator (CI) at the municipal level with Stochastic Frontier Analysis (SFA)<sup>69</sup> and a Primal SFA approach<sup>70</sup>, the latter to assess technical and allocative inefficiencies and detect cases of input misallocation, Forgione and Migliardo highlight how organized crime harms firms' technical efficiency. The well-known Cobb-Douglas function is considered by the authors to compute the maximum achievable

<sup>63</sup> Mentioned G. ALBANESE and G. MARINELLI, *Organized crime and productivity: Evidence from firm-level data*.

<sup>64</sup> Mentioned R. GANAU and A. RODRÍGUEZ-POSE, *Industrial clusters, organized crime, and productivity growth in Italian SMEs*.

<sup>65</sup> Mentioned M. CENTORRINO and F. OFRIA, *Criminalità organizzata e produttività del lavoro nel Mezzogiorno: un'applicazione del modello "Kaldor-Verdoorn"*.

<sup>66</sup> Mentioned A. F. FORGIONE and C. MIGLIARDO, *Mafia risk perception: Evaluating the effect of organized crime on firm technical efficiency and investment proclivity*.

<sup>67</sup> Mentioned C. MIGLIARDO and D. NICOLÒ, *Mutual Spatial Proximity, Organized Crime, and the Profitability of High-Growth Startups: The Case of Italian Gazelle Enterprises*.

<sup>68</sup> E. DARGENT, A. E. FELDMANN and J. P. LUNA, *Greater State Capacity, Lesser Stateness: Lessons From the Peruvian Commodity Boom*, in *Politics & Society*, 45, 2017: 3-34.

<sup>69</sup> W. H. GREENE, *The Econometric Approach to Efficiency Analysis*, in H. O. FRIED, C. A. KNOX LOVELL and S. S. SCHMIDT (Eds.), *The Measurement of Productive Efficiency and Productivity Growth*, Oxford Academic, 2008, pp. 92-250.

<sup>70</sup> S. C. KUMBHAKAR and H. J. WANG, *Estimation of Technical and Allocative Inefficiency: A Primal System Approach*, in *Journal of Econometrics*, 134, 2006: 419-440.

output (denoted as value-added) given a set of specific deployable inputs (number of employees and capital stock).

Secondly, the Primal SFA is introduced to estimate inefficiencies in the allocation process and identify instances of undeployed inputs. It is noteworthy that the authors use value-added as a proxy for firms' output value.

Companies operating in areas with a high presence of mafia tend to be less efficient in their labor use, which raises production costs. Inefficiency comes from hiring workers linked to criminal groups, leading to increased security expenses. This results in lower productivity and skills among workers, causing a decline in the technical efficiency of these companies.

To mitigate these adverse effects on the productive efficiency of firms, the authors recommend adopting, especially in areas with significant criminal infiltration, transparent hiring practices, reliable labor certification, checks on workers' criminal records, and incentives for firms to invest in capital-intensive technologies that are less vulnerable to mafia infiltration.

The mafia's tendency to concentrate within specific geographic areas led to considering potential spatial interdependencies (or spillovers) that affect the technical efficiency of firms due to their proximity to criminal groups. To avoid distortions, a robustness check of the estimates was performed through an additional SFA focusing on neighborhood effects.

Spatial analyses reveal that the negative impact of organized crime on firms' technical efficiency extends beyond municipal borders. Firms located near areas with a relevant mafia presence often suffer problems affecting supply chains, reputation, and distortions of local markets. This "contagion effect" demonstrates that organized crime is not a localized problem but impacts the market on a regional scale. Therefore, coordinated law enforcement initiatives are crucial.

This study also highlights that good-quality institutions can mitigate the negative effects of organized crime, as the empirical analysis includes a further indicator developed by the authors to control for this background factor at the jurisdictional level of the justice of the peace. Therefore, it is crucial to enhance the efficiency of institutions and the rule of law, introduce transparent regulations for public procurement, effective anti-corruption measures, and rigorous institutional supervision of subcontractors and public works. Although this research focuses on a single sector and national context, the policy implications and methodological insights have broader relevance.

The four methods discussed were developed to create a more precise and comprehensive framework for evaluating the impact of organized crime on firms' technical efficiency. This involved assessing the determinants of firms' technical efficiency, along with potential issues like misallocations, endogeneity, and spatial effects.



## 5.

### FROM MAFIA CONTROL TO LEGALITY. PLANNING AND MANAGEMENT CONTROL IN JUDICIAL ADMINISTRATION

#### 5.1. Introduction

This chapter aims to describe the Judicial Administration procedure within the Italian legal system, focusing on specific aspects of the judicial administrator's activities, aiming to manage the transition of seized businesses to legality. These aspects involve assessments that require the use of principles, methodologies, and tools specific to business management, such as planning, management control, and reporting. The latter can help mitigate the risks associated with this process, which is critical for the survival of businesses, as emphasized by the National Agency for the Administration and Destination of Assets Seized and Confiscated from Organized Crime.

This is therefore a theoretical and conceptual chapter that introduces the following Chapter 6, which presents the results of empirical studies conducted by the project's research units and other scholars in the literature on the effects of removing the mafia on the performance of companies under judicial administration, their competitors, and family businesses, in the period after this procedure begins.

The framework thus reflects the logical structure – comprising theory and practice – that underpins the book. It also supports the logical flow of chapters 3, which examines mafia infiltration into the economy and businesses from a theoretical perspective, and 4, which details the results of empirical research on the impact of organized crime on business performance.



## 5.2. Judicial administration in the Italian legal framework

Article 19 of Legislative Decree No. 159/2011 (the so-called Anti-Mafia Code) grants the Public Prosecutor, the Police Chief, and the Director of the Anti-Mafia Investigation Directorate (DIA – Direzione Investigativa Antimafia) the authority to investigate the living conditions, financial resources, assets, and economic activities of the suspected mafia member, their spouse, children, cohabitants, and the natural or legal persons who directly or indirectly control them, over the past five years. After the investigation, they must submit a request to the court, which may order the seizure and confiscation of these assets if deemed to be of illicit origin.

Seizure is a precautionary and provisional measure that targets assets directly or indirectly available to the person for whom the application of a preventive measure is requested, “when their value is disproportionate to the declared income and the economic activity carried out”, or when there is sufficient evidence to believe that the assets “are the result of illegal activities or constitute the reinvestment thereof” (Article 20, Anti-Mafia Code).

During the hearing, the applicant may present their arguments. Afterwards, no later than one year and six months after the assets have been taken into possession by the judicial administrator, the court will issue the confiscation order (the deadline can be extended for up to one year).

Article 24 of the Anti-Mafia Code states that “The court shall order the confiscation of seized assets whose legitimate provenance the person against whom the proceedings are being brought cannot justify, and whose value, including through a proxy, the person is the owner of or has access to for any reason, is disproportionate to their income, as declared for income tax purposes, or to their economic activity, as well as assets resulting from illegal activities or the reinvestment of those activities. In any case, the prosecuted person may not justify the legitimate provenance of the assets by claiming that the money used to purchase them is the proceeds or reinvestment of tax evasion”.

Confiscation is a preventive measure designed to remove from the legitimate economy assets of illegal origin that are directly or indirectly linked to individuals considered socially dangerous.

When a seizure involves companies, the judicial administration procedure (hereinafter referred to as JA) is initiated. In the Italian legal system, JA is a process governed by Legislative Decree No. 159/2011 (the Code of Anti-Mafia Laws and Prevention Measures), as amended and supplemented. The goal of JA is to ensure the continuity and employment of

companies seized from organized crime by restoring the legality of their operations.

When a business operates as a sole proprietorship, the judicial administrator steps in for the entrepreneur who has been dismissed. In a corporate structure, after obtaining authorization from the appointed judge, the court-appointed administrator must call a shareholders' meeting to dismiss the current administrators and may also appoint new ones they trust.

According to Article 36 of the Anti-Mafia Code, the judicial administrator is required to submit a detailed initial report within 30 days of their appointment. In the third paragraph of Article 36, when justified reasons exist, the delegated judge may extend this period, but not beyond 90 days. After this report, they must prepare periodic reports on the administration at intervals determined by the judge, which are also sent to the National Agency for the Administration and Destination of Assets Seized and Confiscated from Organized Crime (ANBSC – Agenzia Nazionale per l'Amministrazione e la Destinazione dei Beni sequestrati e Confiscati alla Criminalità Organizzata).

This report must include:

1. The description, status, and consistency of individual assets or companies.
2. The estimated market value of the assets as assessed by the administrator.
3. Any third-party rights regarding the seized assets.
4. In the case of a company's assets, any documentation found and discrepancies between inventory items and accounting records must be highlighted.
5. The most effective and profitable strategies for managing seized assets.

Whether the seizure concerns shareholdings that do not ensure control or significant influence over the ordinary shareholders' meeting, as specified in Article 2359 of the Civil Code, the Court issues directives to the judicial administrator for managing these shareholdings (paragraph 1-septies, Article 41).

When this proceeding involves companies or controlling shareholdings – those that hold a majority of votes in the ordinary shareholders' meeting – or sufficient votes to exert dominant influence over the shareholders' meeting, Article 41 states that the judicial administrator, following the initial report and within three months of appointment – which may be extended to six months by the delegated judge for justified reasons – must submit a detailed report to the delegated judge and the National Agency for

the Administration and Destination of Assets Seized and Confiscated from Organized Crime (ANBSC). This report includes the following elements:

- a) Additional data supplementing the information provided in the report under Article 36, paragraph 1.
- b) The company's financial statements, along with a detailed and estimated evaluation of its assets.
- c) A detailed analysis of the feasibility of continuing or restarting the business (if it has been suspended) must consider several factors such as the characteristics of the company, the relationship between the removed administrator, their family members, and the company, the nature of the business and its management, the operating environment, the employed and required workforce, the production capacity, the company's target market, and the costs associated with the legalization process. If the judicial administrator recommends continuing or resuming operations, he or she must attach a program to the report that details a description of the methods and timelines for implementing the proposal. This program must, with the authorization of the delegated judge, be accompanied by a report from a qualified professional as required by law<sup>1</sup>, certifying the accuracy of the company's data and the feasibility of the plan while considering the possibility of utilizing the incentives and measures outlined in Article 41-bis.
- d) An estimate of the company's market value, considering the costs related to the legalization process.
- e) A list of activities requiring specific authorizations, concessions, or enabling titles.

The judicial administrator also provides:

- A list of creditors and individuals holding real or personal rights, usufructs, or guarantees concerning the seized assets.
- Details of credits associated with commercial relationships that are essential for the continuation of the business, as well as those related to terminated relationships.

<sup>1</sup> To certify the proposal, the professional must meet the requirements set out in Article 67, third paragraph, letter d), of Royal Decree No. 267 of March 16, 1942, and subsequent amendments. Specifically, the professional must be registered in the register of statutory auditors and possess the qualifications outlined in Article 28, letters a) and b). They must certify the accuracy of the company's data and the feasibility of the plan. The professional is considered independent when they are not connected to the company or to those with an interest in the restructuring operation through personal or professional relationships that could compromise their judgment's independence.

- A list of individuals who are currently or have previously been employed by the company, detailing the nature of their employment relationships and identifying those deemed essential for business continuity.

### **5.3. The judicial administrator's report on the prospects for continuity of the seized companies**

According to Article 41, letter c), the judicial administrator's report must include a detailed analysis of the feasibility of continuing or resuming operations of the seized business if the company's activity has been suspended.

This assessment examines key elements essential for understanding the characteristics of the seized enterprise. These include the attributes of the seized company, the context in which the business operates, the relationship between the removed leader, their family members and firms, the nature of the activities performed, the current workforce, along with any additional labor that may be necessary, production capacity, the market, and the costs associated with the legalization process.

According to the guidelines on the judicial administration of seized and confiscated assets issued by the Italian National Council of Chartered Accountants and Accounting Experts (CNDCEC – Consiglio Nazionale dei Dottori Commercialisti e degli Esperti Contabili), the judicial administrator's report must analyze the following aspects of the seized company:

- The ability of the seized company to continue operations even after the removal of organized crime.
- Typical revenues and costs of the company.
- Organizational structure.
- Administrative compliance.
- Existence of any disputes (civil, fiscal, administrative, etc.).
- Typical financial flows.
- Relationships with financial institutions.
- Potential critical issues.

Examining these aspects will enable the judicial administrator to evaluate the company's ability to continue operations after eliminating mafia influence<sup>2</sup>.

<sup>2</sup> CNDCEC (CONSIGLIO NAZIONALE DEI DOTTORI COMMERCIALISTI E DEGLI ESPERTI CONTABILI), *Linee Guida in materia di amministrazione giudiziaria dei beni sequestrati*

If the judicial administrator determines that the conditions for continuity are met, they must submit a proposal to the delegated judge for the continuation or resumption of the business. This proposal must include a program that describes how and when it will be implemented. A report from a qualified professional who meets legal requirements must verify the reliability of the business data and the feasibility of the program<sup>3</sup>.

Based on the findings presented by the judicial administrator in their report, the judge will decide in chambers, with the participation of the public prosecutor, the parties' legal representatives, the agency, and the judicial administrator. This decision will determine whether to continue or resume the enterprise's operations and the associated implementation program. The decision is formalized through a reasoned decree issued by the court, which approves the program prepared by the judicial administrator. (Article 41, paragraph 1-sexies)<sup>4</sup>.

The judicial administrator's evaluation of the company's prospects for continuing operations under the law involves estimating emerging legalization costs and administrative procedure expenses, as well as lost profits resulting from the removal of support from organized crime, which makes the evaluation challenging.

#### **5.4. From mafia control to legality. The role of planning and management control systems in assessing the continuity of seized firms**

Planning and management control systems help overcome the challenges of removing the mafia and transitioning to a sustainable, law-abiding business. Writing a strategic plan and annual budgets is essential to formally and analytically assessing the company's ability to operate after severing ties with organized crime, through a rational and formal approach rather than relying on intuition or experience. These systems enable judicial administrators to accurately simulate the effects of interventions aimed at reorganizing administrative procedures and activities conducted before

*e confiscati*, 2015, p. 51. [https://www.odcecMESSINA.it/wp-content/uploads/import/linee\\_guida\\_cndcec\\_finalil.pdf](https://www.odcecMESSINA.it/wp-content/uploads/import/linee_guida_cndcec_finalil.pdf).

<sup>3</sup> The professional certifier of the plan must meet the requirements of Article 67, third paragraph, letter d), of Royal Decree No. 267 of March 16, 1942, as amended.

<sup>4</sup> CNDCEC (CONSIGLIO NAZIONALE DEI DOTTORI COMMERCIALISTI E DEGLI ESPERTI CONTABILI), *La riforma del codice antimafia: le problematiche applicative e il ruolo del professionista post-riforma*, Roma, 2018.

the seizure, along with the loss of benefits from financial support and intimidation of competitors due to mafia association. They also provide the information necessary to manage seized businesses, monitor the implementation of the plan and the achievement of intermediate milestones, facilitate quick identification of the need for corrective actions, support decision-making, performance measurement<sup>5</sup>, and write periodic updates on the execution of the plan and the company's performance to present to the delegated judge.

The judicial administrator's plan initiates a transformative process, turning a mafia-controlled entity into a law-abiding business while preserving its economic value and safeguarding jobs. When outlining future scenarios, it is essential to avoid simply projecting past trends linearly into the future. The initiation of judicial administration removes criminal influence and eliminates illicit advantages the company previously had, such as coerced contracts, tax evasion, and market dominance through intimidation. Sales often decline after organized crime is eliminated because customers, no longer under pressure, may decide not to buy from the company. Similarly, public administration contracts or orders may also decline. Because of the company's ties to organized crime, revenue may decrease as clients distance themselves to protect their reputations.

Therefore, the judicial administrator must evaluate competitive dynamics and analyze the industry, considering the loss of monopolistic advantages or protections previously granted through ties to organized crime. This involves reassessing market positioning, supply chains, and partnerships now benefiting from the absence of illicit influences. Other challenges include rising procurement costs and limited access to credit. Suppliers are no longer required to accept unfavorable terms, resulting in increased operational expenses. Banks often restrict lending following court proceedings, which can worsen financial instability, particularly for heavily indebted companies<sup>6</sup>. Thus, the judicial administrator must account for costs the company avoided under mafia control, including fair wages, social security contributions, taxes, and compliance with environmental, urban planning, and workplace safety regulations. Additional costs arise

<sup>5</sup> D. MANCINI and G. PISCITELLI, *Performance measurement systems in business networks: a literature review*, in *International Journal of Business Performance Management*, 19(1), 2018: 87-104.

<sup>6</sup> Mentioned A. BIANCHI, A. MARRA, D. MASCIANDARO and N. PECCHIARI, *Organized crime and firms' financial statements: Evidence from criminal investigations in Italy*; Mentioned M. Fabrizi, P. MALASPINA and A. PARBONETTI, *Caratteristiche e modalità di gestione delle aziende criminali*.

from implementing organizational, management, and control systems to comply with Italian Legislative Decree No. 231/2001, which requires anti-corruption protocols, whistleblower protections, and conflict-of-interest policies. Article 41(paragraph c) describes these expenses as “costs associated with the legalization process of the company.”

Verifying accounting records is crucial because financial statements in mafia firms often misrepresent assets and liabilities within those records. Existing financial documents are frequently unreliable, which complicates making realistic planning assumptions. Companies under preventive measures rarely maintain dependable accounting records, so the administrator must often conduct complex research involving information and data, as well as reconcile company accounting data<sup>7</sup>. Specifically, this verification must include credits, debts, and obligations (including guarantees and sureties), as well as warehouse consistency.

Fear of reputational damage can also lead strategic partners, such as suppliers and distributors, to sever ties with the company in JA. Rebuilding trust with stakeholders – especially suppliers, clients, and financiers – is challenging, but it is essential for restoring operational stability. Obtaining legality certifications (e.g., legality ratings) to regain stakeholder trust is beneficial. Planning is also helpful in managing reputational risk<sup>8</sup> and building a reputation in these seized firms, which are hindered by their connections with criminal networks.

For companies facing financial constraints, the plan should consider using debt restructuring agreements under Article 57 of Legislative Decree 14/2019, which allow negotiations with creditors representing at least 60% of claims for reduced payment terms. These agreements facilitate recovery while ensuring compliance.

Judicial administrators should use legal support tools outlined in Articles 41-bis, 41 ter, and 41 quater of the Anti-Mafia Code, which provide financial support, employment safeguards, and mentorship from qualified entrepreneurs in the same or related sectors. This includes provincial business tables and a free mentorship program in Italian prefectures. The 2023 Annual Report of the National Agency for the Administration and Destination of Assets Seized and Confiscated from Organized Crime (ANBSC

<sup>7</sup> CNDCEC (Consiglio Nazionale dei Dottori Commercialisti e degli Esperti Contabili) – SIDREA (Società italiana dei Docenti di Ragioneria e di Economia Aziendale), *Linee guida per la valutazione delle aziende sequestrate e confiscate*, 2020, 10.

<sup>8</sup> D. LAVORATO, R. LAMBOGLIA and D. MANCINI, *La relazione tra rischio reputazionale e controllo-guida: possibili linee di ricerca*, in *Management Control* (2021/suppl. 2).



– Agenzia Nazionale per l'Amministrazione e la Destinazione dei Beni Sequestrati e Confiscati alla Criminalità Organizzata) highlights the under-utilization of these support mechanisms<sup>9</sup>.

During the implementation of the plan, deviations from the objectives may occur, regarding demand, selling prices, standard production and distribution costs, collection times for receivables, bank credit lines, and other variables. Therefore, continuous monitoring of key variables that significantly influence the achievement of plans and programs must be maintained through management control and reporting systems tailored to suit the characteristics and complexity of business operations. Consequently, strategic planning does not end with the formulation, ex-ante evaluation, and plan initiation. Infra-annual reports, appropriately structured by segments corresponding to business areas and lower-level responsibility centers, may identify the need to adjust the adopted strategic approach. Adapting the existing accounting information system of the seized business will incur costs that must be carefully assessed.

Like the plans prepared by all companies during their normal operations, those written by judicial administrators to assess continuity prospects and manage the seized company must be segmented by time and space. Segmentation over time organizes the plan into yearly and infra-annual budgets, while spatial segmentation divides the overall activities into operating segments corresponding to the responsibility centers<sup>10</sup> at different levels: Strategic Business Units (SBUs)<sup>11</sup>, profit centers, cost centers, and expense centers. The criteria for spatial segmentation used for planning, management control, and reporting depend on the information needed to run the company. In diversified companies, for example, we segment the plan and report by lines of business, geographic regions where the company operates (markets), customer groups with similar

<sup>9</sup> Mentioned ANBSC (Agenzia Nazionale per l'Amministrazione e la Destinazione dei Beni Sequestrati e Confiscati alla Criminalità Organizzata), *Relazione sull'attività svolta. Anno 2023*.

<sup>10</sup> D. NICOLÒ, *Il reporting per segmenti e l'informativa settoriale secondo l'IFRS 8*, Milano, 2009; D. NICOLÒ, *Business plan nella fase di startup: idea imprenditoriale, modello di business e identità aziendale*, Egea, Milano, 2021; D. NICOLÒ and G. VALENZA, *Il reporting per segmenti nei settori del trasporto pubblico locale e della cura della salute. Esperienze a confronto*, in *Management Control*, n. 1, 2020: 35-57.

<sup>11</sup> D. F. ABELL, *Defining the business. The starting point of strategic planning*, New Jersey: Prentice-Hall, Inc. Englewood Cliffs, 1980; P. KOTLER, *Marketing strategico*, Pearson Education Italia, XI ed., 2004, p. 113 e segg; M. PORTER., *Competitive advantage. Creating and sustaining superior performance*, The Free Press, 1985 (trad. it.: *Il vantaggio competitivo*, Edizioni Comunità, 1987), 36, 58 e 317.



needs, locations of facilities and plants, distribution channels, technologies, and other relevant factors. A matrix structure can combine multiple segmentation criteria.

Segmenting the plan over time, into annual and interannual budgets allows for a more accurate evaluation of its financial viability on a quarterly and monthly basis. While the timing of costs and revenues doesn't impact the income measure, the sequence of cash inflows and outflows matters because it influences short-term liquidity and borrowing costs. Although expected annual inflows exceed outflows, concentrated outflows in certain months can lead to a cash shortage that would not happen if they were evenly distributed throughout the year, alternating with cash inflows. Therefore, relying solely on expected annual total cash inflows and outflows is not enough. It is necessary to ensure that the expected monthly balance remains positive<sup>12</sup>.

In diversified companies operating across multiple sectors and markets, segmenting the plan by space is necessary to evaluate the economic performance of each operating segment. Due to mutual compensations, positive profits in some segments can hide losses in others. Without information provided by segment reporting, companies might continue to run unprofitable lines of business or markets without realizing it. This lack of information may prevent them from taking necessary corrective actions in underperforming segments. Therefore, in diversified companies, an accurate analysis of overall performance is impossible without evaluating the performance of each operating segment, due to causal relationships between the whole entity and its segments. However, a holistic perspective remains crucial: a loss-making segment may still positively contribute to the company's overall profit by supporting other segments and the organization's results. Therefore, we must adopt an approach that combines analysis with a broad view. It aligns with Edgar Morin's methodology of complexity, which reveals interdependencies among the elements of complex systems<sup>13</sup>.

Following the start of the plan's implementation, regular interim segment reporting helps the judicial administrator quickly identify any negative trends and inefficiencies in some of these responsibility centers that require corrective actions before they become irreversible. Furthermore,

<sup>12</sup> D. NICOLÒ, *Monitoraggio delle sequenze e risultati aziendali*, in *Management Control*, 3, 2013: 35-50.

<sup>13</sup> E. MORIN, *Il metodo*, I, Feltrinelli, Milano, 1992, 11; E. MORIN, *Introduzione al pensiero complesso*, Sperling & Kupfer, Milano, 1993.

regular interim segment reporting enhances strategic learning by allowing ongoing comparison of objectives and results.

When the judicial administrator's plan demonstrates the company's long-term viability and the delegated judge orders the continuation of the judicial administration process, the judicial administrator must implement a management control system with the same temporal (monthly and/or quarterly) and spatial (by operating and/or geographical area) segmentation criteria as the plan to support the administration and oversee its execution.

This is the prerequisite for writing infra-annual reports by segment, both operating and geographical, offering detailed performance insights for each segment. In the context of judicial administration, these interim reports by segment provide valuable information to the judicial administrator to manage the seized company and write reports to the delegated judge on the execution of the plan.

For each segment, it is possible to measure partial results, such as operating income, gross contribution margin, and operating cash flow. Loans are allocated among the different segments based on a causal relationship. These funds are used to cover the entire financial needs of the companies. A direct and exclusive link between financing and investments in a specific segment can only be established when the segment operates as a separate company within a group. In such cases, the segment's financial statements allow for the attribution of financial debt to the segment.

In seized companies linked to so-called eco-mafias that make profits by committing environmental crimes, it is appropriate to draw up a social and environmental report<sup>14</sup> demonstrating how the removal of the mafia has led to the elimination of ecological crimes.

We emphasized the importance of using planning and management control tools to evaluate realistic continuity prospects and manage the company's transition toward legality. Even the guidelines for valuing seized and confiscated companies issued by the National Council of Chartered Accountants and Accounting Experts emphasize the obligation for the judicial administrator to adopt control tools and procedures to monitor company performance and verify the implementation status of the program. These tools are essential for managing the company, and because the judicial administrator is required to constantly inform the delegated judge, proposing, in the event of significant deviations from the planned course of

<sup>14</sup> Mentioned M. CONTRAFATTO, *The institutionalization of social and environmental reporting: An Italian narrative*.

action, appropriate corrective measures to the business's actions or to the program guidelines<sup>15</sup>.

The small size of many (but not all) companies under judicial administration might make planning, management control, and the development of strategic scenarios seem unnecessary. Obviously, for micro-enterprises, it is neither possible nor practical to construct strategic scenarios through a plan structured into formal budgets, nor to implement interim reporting systems addressed to top management, as is the case with medium-sized and large-sized companies. On the other hand, micro and small companies under judicial administration cannot rely solely on the judicial administrator's intuition and experience. They should instead use budgets and management control tools, even if simplified and tailored to the needs of small businesses. These management tools, although streamlined, are crucial for judicial administrators due to the complex tasks they face, including assessing the company's prospects for ongoing operation and overseeing its transition toward legality. As we have repeatedly argued, the seized company suddenly loses the economic and competitive advantages derived from its relationship with organized crime once the judicial administrator takes over. Therefore, assessing the prospects for continuity cannot rely solely on projecting past trends into the future; it must be done using managerial tools, although simplified and adapted to the characteristics of small businesses. Thus, the reference to scenarios in the following paragraph, while mainly focusing on medium- and large-sized companies, offers a logical framework that can also benefit smaller businesses. Supporting the need to prepare a detailed budget plan, albeit a simplified one for smaller businesses, it should be noted that Article 41 of the Anti-mafia Code requires a professional to certify the feasibility of the program, containing a detailed description of the methods and timeframes for fulfilling the business continuation proposal formulated by the judicial administrator. How could a professional make such a certification without even a minimal plan and budget in place?

A key issue in judicial administration procedure is assessing the value of seized assets and businesses. This evaluation must be conducted during the initial phase of the process, as required by Articles 36 and 41 of the Anti-Mafia Code, and in the later stage, when the business is finally confiscated, according to Articles 47 and 48 of the Anti-Mafia Code. A thorough

<sup>15</sup> Mentioned CNDCEC (Consiglio Nazionale dei Dottori Commercialisti e degli Esperti Contabili) – SIDREA (Società italiana dei Docenti di Ragioneria e di Economia Aziendale), *Linee guida per la valutazione delle aziende sequestrate e confiscate*, 10.

examination of such an important subject would require a specific study, and it cannot be addressed in the limited space that can be reserved for it in this study, which has other objectives. We reference the specific scientific literature on this subject<sup>16</sup>, and the guidelines outlined by the Italian Chartered Accountants and Accounting Experts and the Italian Association of Professors of Accounting and Business Economics<sup>17</sup>.

## 5.5. Assessment of the feasibility of the judicial administrator's plan

This paragraph outlines the fundamental principles and models stated by doctrine for evaluating the performance of businesses<sup>18</sup>. These principles are also helpful for assessing the feasibility of plans by examining their expected results. Even judicial administrators need to assess the likelihood of ongoing operations for seized companies based on these principles.

Evaluating the expected results of implementing the plan requires examining all aspects of performance, including financial, social, and competitive factors. Therefore, a multidimensional analysis of the results expected from plan implementation is essential, as business continuity depends not only on earning income for shareholders but also on meeting stakeholders' expectations, gaining their consensus and support, and addressing customer needs to succeed in competition. This is the "circular vision of corporate finalism", proposed by Coda, which distinguishes excellent companies from mediocre ones that focus only on a single metric:

<sup>16</sup> F. LA ROSA and S. PATERNOSTRO, *La valutazione delle aziende confiscate alla criminalità organizzata: peculiarità, criticità e un'analisi empirica delle perizie estimative*, in L. MARCHI, L. LOMBARDI and L. ANSELMi (a cura di), *Il governo aziendale tra tradizione e innovazione*, Vol. II – *Valutazione d'azienda*, FrancoAngeli, Milano, 2016; F. LA ROSA (a cura di), *La valutazione delle aziende sottoposte a misure di prevenzione*, Studi di Valutazione d'Azienda Collana SIDREA, coordinata da Giovanni Liberatore, Giuffrè, Milano, 2018; F. LA ROSA and S. PATERNOSTRO, *Measuring and reporting confiscated firms' (social) business value*, in *International Journal of Business Governance and Ethics*, 13(4), 2019: 345-360.

<sup>17</sup> Mentioned CNDCEC (Consiglio Nazionale dei Dottori Commercialisti e degli Esperti Contabili) – SIDREA (Società italiana dei Docenti di Ragioneria e di Economia Aziendale), *Linee guida per la valutazione delle aziende sequestrate e confiscate*, 2020.

<sup>18</sup> La Rosa and Paternostro have proposed an interesting application of a well-known theoretical framework of the doctrine to judicial administration: the "integral development of the company" approach (see C. SORCI, *Lo sviluppo integrale dell'azienda*, in AA.VV., *Lo sviluppo integrale delle aziende*, Giuffrè, Milano, 2007). F. LA ROSA and S. PATERNOSTRO, *L'amministrazione delle aziende confiscate alla criminalità organizzata. La proposta di un framework di studio e un'analisi esplorativa dei decreti di destinazione*, in *Small Business / Piccola impresa*, n. 1, 2015.

short-term profit. Focusing solely on short-term income can lead to neglecting other key areas of a business's performance: competitiveness and positive social impact. This breaks the positive cycle and fosters a negative one, leading the company to decline. The sacrifice of stakeholders' and customers' expectations determines, in the medium to long term, the "loss" of human resources and partners. It results in a loss of competitiveness that undermines the foundations on which the company's profitability is based. Thus, positive or negative relationships can be established between business outcomes, which, respectively, pave the way for a lasting and prosperous existence or the extinction of the corporate entity. However, some businesses survive despite their actions being uninspired by ethics, the maximization of customer value, and a healthy focus on cost-effectiveness and efficiency. They last only as long as external conditions persist that facilitate achieving economic and financial equilibrium and a competitive advantage. These conditions can include: low-cost labor (especially in areas with high unemployment and in countries where workers lack rights and protections), the use of polluting technologies to reduce production costs, tax and social security evasion, and the exploitation of demand that arises not from their ability to meet customer expectations, but rather from legal (through concessions, licenses, patents, etc.) or de facto (due to the lack of competition) monopolies. These entities build their success on a fragile foundation: a fleeting advantage can cause the business to spiral into crisis, often with no way out. This occurs when competitors enter the sector, especially when the business model relies heavily on focusing on customers and stakeholders<sup>19</sup>. Implementing mandatory disclosure about employee conditions and compliance with labor regulations can make it more challenging to exploit workers and violate labor and social security regulations<sup>20</sup>.

A plan showing satisfactory profitability is not enough; financial sustainability, competitiveness, and social responsibility are also essential for assessing long-term business viability. Recovery strategies require a comprehensive evaluation that includes economic, financial, and competitive factors, as these aspects of business performance are interconnected and

<sup>19</sup> V. CODA, *La valutazione della formula imprenditoriale*, in Sviluppo e Organizzazione, 82.2, 1984; V. CODA, *L'orientamento strategico dell'impresa*, Utet, Torino, 1988.

<sup>20</sup> S. PARSA, I. ROPER, M. MULLER-CAMEN and E. SZIGETVARI, *Have labour practices and human rights disclosures enhanced corporate accountability? The case of the GRI framework*, in Accounting Forum, 42(1), 2018: 47-64; S. J. WILLIAMS and C. A. ADAMS, *Moral accounting? Employee disclosures from a stakeholder accountability perspective*, in Accounting, Auditing & Accountability Journal, 26(3), 2013: 449-495.

impact continuity. Profitability can be fleeting if it is not sustained through ongoing competitiveness, which must be tracked using indicators such as customer satisfaction, growth rates in market share both absolutely and relatively, and qualitative improvements in products and services. Ultimately, the strategic plan and annual budgets require a comprehensive evaluation that considers expected profitability, critical variables affecting financial stability, operational and financial risks<sup>21</sup>, and expected competitive performance. This analysis should be performed for each operating segment in diversified companies.

Assessing competitiveness involves determining whether a company maintains an advantage over competitors that can last even after the benefits from its connections to organized crime fade. This assessment must consider factors such as customer satisfaction, pricing, quality, delivery times and methods, technological development, and overall performance, among others. Verifying the continuity of a business under judicial administration also requires evaluating the company's competitiveness.

After passing these competitiveness tests, it is necessary to evaluate the performance expected from the plan drawn up by the judicial administrator in terms of social outcomes, meeting the expectations of social stakeholders, and the economic viability and financial sustainability of the business initiative.

Recently, a more advanced perspective has emerged in the international management literature, emphasizing the importance for businesses to contribute to community well-being to thrive over time in an environment that evolves and improves through their activities. Porter and Kramer<sup>22</sup> argued that the idea that companies must create value for both customers and shareholders is outdated and no longer effective. Capitalism is shown to benefit only a few and does not protect the poorest population. The impoverishment of the masses eventually impacts businesses, as their health and well-being depend on the community they serve. According to the two scholars, businesses are trapped in a value creation paradigm that no longer works because it focuses on short-term performance and ignores the more vital needs of people and the environment, which they should priori-

<sup>21</sup> S. GARZELLA, D. MANCINI and L. MOSCHERA, *I soggetti e i sistemi di controllo interno nel governo dell'azienda e nella gestione dei rischi*, in *Sistemi di controllo interno e soluzioni organizzative*, Giappichelli, 2009.

<sup>22</sup> M.E. PORTER and M.R. KRAMER, *How to reinvent capitalism: and unleash a wave of innovation and growth*, in *Harvard Business Review*, 89.1-2, 2011: 62-77; M. E. PORTER and M. R. KRAMER, *Creating shared value, in managing sustainable business*, Springer, Dordrecht, 2019, pp. 323-346.

tize, as these are essential for long-term success. The solution is to generate economic value while also creating social value by addressing community needs. Otherwise, they remain stuck in a form of social responsibility that treats society's needs as secondary, not central. If businesses do not focus on creating value that enhances societal well-being, they will face negative consequences in the medium to long term: an impoverished community is unproductive soil in which businesses cannot thrive for long. Social progress, therefore, must be connected to business success. According to Porter and Kramer, "Creating shared value does not mean social responsibility, philanthropy, or even sustainability, but a new way through which businesses must pursue success". By creating shared value, capitalism can be reinvented, and new momentum can be given to innovation and growth.

This theoretical approach leads us to classify mafia enterprises as businesses that are likely to cease operations quickly, as they operate by disregarding laws, exploiting workers, neglecting safety regulations, avoiding social security payments, evading taxes, and bypassing environmental laws, while prioritizing profit maximization as their primary goal. These entities build their success on fragile foundations. It is short-lived because it depends on conditions that cannot persist, as the law penalizes such behaviors. Similarly, although they do not break the law, other companies may operate in ways that contradict ethical principles and values. Even these firms cannot sustain success over time because their poor reputation damages their standing in the market and harms their relationships with stakeholders who support the business's survival and growth. Some companies fail to prioritize customer satisfaction because they achieve market success by exploiting legal or natural monopolies. For these companies, success is also temporary. If their dominant position declines, such as with the rise of competitors more focused on customer needs, they may face a crisis and risk ceasing operations<sup>23</sup>. Companies controlled by organized crime share these characteristics; therefore, their success is unlikely to last. Furthermore, law enforcement and investigative authorities frequently identify and prosecute the illegal activities carried out by these criminal organizations<sup>24</sup>.

Before implementing the strategic plan drafted by the judicial administrator, it must undergo a thorough evaluation to verify its economic and

<sup>23</sup> V. CODA, *L'orientamento strategico dell'impresa*, Utet, Torino, 1988.

<sup>24</sup> D. NICOLÒ, *La relazione sulle "concrete prospettive di prosecuzione dell'impresa" sottoposta a sequestro: il contributo della pianificazione, della programmazione e del controllo di gestione*, in AA.VV., *Custodia e amministrazione giudiziaria dei beni e aziende sotto sequestro*, Sistemi Editoriali, Napoli, 2010, pp. 85-107.



financial sustainability. This process involves determining whether the expected profitability matches the plan's financial viability.

Below, we explore two frameworks commonly used to evaluate such plans: the accounting model<sup>25</sup> and the value model<sup>26</sup>. Since they are well-known in the literature and widely used, we will summarize their description, focusing only on the adaptations needed when applying them to judicial administration.

### 5.5.1. *The Accounting Model*

The accounting model focuses on estimating the expected profitability of a strategic plan, assessing whether it compensates shareholders for their risk. This model includes the cost of equity ( $K_e$ ), representing the minimum return an investor requires to balance the risk of potential capital loss<sup>27</sup>.

The economic and financial sustainability of the plan must be evaluated at the corporate level by comparing the return on equity (ROE) to the overall economic risk. In diversified companies, we also need to compare the return on assets (ROA) to the operating risks for each operating segment. Operational risk comes from fluctuating sales prices, volatile consumer demand, supply chain disruptions, and technological obsolescence. Financial risk results from the company's debt levels and the risk of running out of liquidity.

<sup>25</sup> L. BRUSA and L. ZAMPROGNA, *Pianificazione e controllo di gestione*, Etas, Milano, rist. 1999, cap. 2; G. INVERNIZZI and M. MOLTENI, *Analisi di bilancio e diagnosi strategica. Strumenti per valutare posizione competitiva, vulnerabilità, patrimonio intangibile*, Etas, Milano, 1990; L. MARCHI, A. PAOLINI and A. QUAGLI, *Strumenti di analisi gestionale. Il profilo strategico*, Giappichelli, Torino, 2003.

<sup>26</sup> R. BREALEY, S. MYERS and F. ALLEN, *Principles of Corporate Finance* (13th ed.), McGraw-Hill, 2020.

<sup>27</sup> This cost is calculated as the sum of the risk-free rate ( $r_o$ ) and a risk premium ( $P$ ). The risk premium itself reflects the additional return required for bearing the uncertainties of entrepreneurial activity, derived from the formula:

$$K_e = r_o + P$$
$$P = (r_m - r_o) \times \beta_e$$

Where:

$P$  = Risk premium for investing in entrepreneurial ventures

$r_m$  = Average return on moderately risky investments

$r_o$  = Risk-free rate

$\beta_e$  = The company's risk relative to the equity market.

L. GUATRI and M. BINI, *Nuovo trattato sulla valutazione delle aziende*, Egea, Milano, 2009, p. 310 e segg.



To determine whether the growth rate (g) expected by the plan is sustainable, two options are considered: a) autonomous sustainable development, in which the sustainable rate of development depends entirely on self-financing, by reinvesting partially or totally the income<sup>28</sup>; b) overall sustainable development, which also considers the potential expansion of equity and bank debt<sup>29</sup>.

However, the growth of financial debt is often limited within judicial administration. Banks usually cut back credit to companies under court supervision. New equity typically comes only from minority shareholders, when they exist and have not been removed due to mafia ties. As a result, the autonomous sustainability framework becomes the main tool for judicial administrators. The plan's success depends on whether the internally generated funds from its execution can cover the investments needed to restructure the company's value chain and support the transition toward legality. If the projected retained earnings fall short, the plan risks leaving the company vulnerable to liquidity shortages, even if the annual financial statements look balanced.

### 5.5.2. *The Value model*

While the accounting model focuses on profitability and risk, the value model evaluates whether a strategic plan creates or at least maintains the company's economic value. This approach aligns with the judicial administration's goal of preserving or increasing the value of seized companies as required by articles 36 and 41 of the Anti-mafia Code.

<sup>28</sup> Here is the formula for calculate the global sustainable development rate  $g = ROE (1 - d)$

where d = dividend payout rate.

Considering the determinants of ROE, the equation can be expressed as follows:

$$g = [ROI + (ROI - i) \times D/CN] \times (1 - t) \times (1 - d)$$

<sup>29</sup> The formula below calculates the determinants of the global sustainable development (g) as depending on earning reinvestment and the expansion of equity and debt:

$$g = ROE \times (1 - d) + \delta CS / CN_i + (D_f - CN_f) / CI_i$$

where:

$\delta CS / CN_i$  = variazione del capitale investito derivante da apporti di capitale sociale

$\delta CS$  = nuovi apporti di capitale sociale

$CN_i$  = capitale netto iniziale

$D_f$  = debiti finali

$CN_f$  = capitale netto finale

$CI_i$  = capitale investito iniziale

We will examine two variants of this model developed to evaluate the economic and financial sustainability of plans. It is helpful to measure whether the plan written by the judicial administrator can generate cash flows that ensure continuity for the seized company and enhance its economic value, which aligns with the aims of the judicial administration procedure: the Fruhan model and the Rappaport model.

The frequency with which seized companies are liquidated should lead to the adoption of the analytical-financial method for caution, even though this method also provides reliable results if the accounting and financial situation are thoroughly audited, since these companies are often unreliable<sup>30</sup>.

### *The Fruhan model*

The Fruhan model<sup>31</sup> assesses the economic value created by the plan as follows: it forecasts the expected results of the strategic plan over the entire company lifespan, discounting the expected dividends during the estimation period at an interest rate equal to the cost of equity.

Dividends are calculated using the return on equity (ROE) and the intended dividend payout ratio (d). Additionally, the expected net equity value at the end of the plan is added to this amount. Finally, the initial net capital is subtracted from the total of these two components before implementing the strategy.

In the context of judicial administration, any income generated by the plan is not distributed except to possible minority stakeholders who are not subject to the seizure order. However, this does not preclude the possibility of applying this model by using the profits generated and not distributed to calculate the potential value creation of the plan prepared by the judicial administrator. Similarly, the model can be used to choose among multiple strategic alternatives the one to implement based on the expected economic value of each alternative.

### *The Rappaport model*

The Rappaport model evaluates a plan by comparing the equity value expected through its implementation to the company's value without the

<sup>30</sup> F. LA ROSA and S. PATERNOSTRO, *L'applicazione del metodo analitico-patrimoniale nella valutazione delle aziende confiscate e l'impatto degli stakeholder sul processo valutativo*, in F. LA ROSA (a cura di), *La valutazione delle aziende sottoposte a misure di prevenzione*, Studi di Valutazione d'Azienda Collana SIDREA, coordinata da Giovanni Liberatore, Giuffrè, Milano, 2018.

<sup>31</sup> W. E. FRUHAN, *Financial strategy: studies in the creation, transfer, and destruction of shareholder value*, 1979.

plan – i.e., the company's value if the current strategy is maintained without any changes<sup>32</sup>.

$W_i$  represents the initial capital value without the strategic interventions outlined in the plan. It is determined by calculating the present value of the most recent net operational cash flow, referred to as  $f_o$ , and subtracting the value of debt from the resulting figure. If we did not subtract the value of debt, we would obtain the value of the invested capital, since we have discounted the operational cash flow. Therefore, to determine the economic value of equity, we must subtract the value of debt.

This operational cash flow is discounted using the weighted average cost of capital (WACC) because it reflects cash flows meant to compensate for the total invested capital (equity and debt). Unlike dividend flows, which are intended for shareholders and are discounted at the cost of capital ( $K_e$ ), operational cash flows represent returns for all capital providers. Therefore, WACC is the appropriate discount rate, as it considers the blended cost of equity and debt financing. The formula is as follows:

$$W_i = f_o / WACC - \text{Debt}$$

Where:

$f_o$  = the most recent net operational cash flow

WACC = weighted average cost of capital

The operational cash flow ( $f_o$ ) is calculated by adding depreciation and provisions (costs that did not lead to cash outflows), while considering changes in net working capital and fixed capital. It applies a positive or negative sign depending on whether they contribute to generating or absorbing liquidity.

The post-plan actuation equity value includes the discounted operational cash flows throughout the plan's horizon and a residual value representing cash flows beyond this period. From the economic value generated by this strategy, the value of debt must be subtracted, as outlined in the initial economic value determination.

<sup>32</sup> A. RAPPAPORT, *Creating shareholder value*, The Free Press, New York, 1986 (trad. it.: *La strategia del valore*, FrancoAngeli, Milano, 1989), p. 70; L. BRUSA and L. ZAMPROGNA, *Pianificazione e controllo di gestione*, Etas, Milano, rist. 1999, p. 80; BRUSA L., *Sistemi manageriali di programmazione e controllo*, Giuffrè, Milano, 2000, p. 357.

## 5.6. Assessing risks in evaluating the continuity prospects of seized businesses

The judicial administrator must also assess the risks affecting the continuity of the seized company to evaluate its prospects for continuation.

Companies face many risks<sup>33</sup> related to various random events and phenomena. These risks can be economic or non-economic; however, when these events occur, they always have economic consequences for companies and, in severe cases, can even lead to financial crises and bankruptcy. Examples of events related to economic factors include reductions in demand, rationing of credit by banks, increases in the costs of production inputs (such as raw materials, consumables, labor, energy, and services), price wars with competitors, declines in the value of shareholdings, credit risks from debtor defaults, technology obsolescence, and devaluations of inventory due to shifts in consumer tastes or fashion trends. Additionally, thefts, fires, natural disasters, war-related events, and pandemics are among non-economic events.

When evaluating the concrete prospects for the continuity of the seized company, the judicial administrator must assess the risks that could lead to costs for the company. These include expenses related to potential legal disputes arising from activities conducted before the seizure, initiated by private individuals and companies who had remained inactive due to fear of retaliation. Additional liabilities may also arise from conflicts with tax authorities or social security institutions.

The judicial administrator must also assess the cost of equity along with the operational and financial risks.

The cost of equity depends on the risk that the company may provide partners with a lower return than the cost of capital or even incur losses that diminish the equity capital. In partnerships and individual businesses, this risk exposes partners and the entrepreneur to the risk of losing personal assets. It arises from all the risks that burden the company since, when they occur, they lead to costs and losses that negatively affect the company's results. Among the various company risks, operational and financial risks are particularly significant.

Financial risk is related to a company's level of debt. It refers to the risk that debt may become too high, which could cause liquidity problems and

<sup>33</sup> S. GARZELLA, D. MANCINI and L. MOSCHERA, *I soggetti e i sistemi di controllo interno nel governo dell'azienda e nella gestione dei rischi*, in *Sistemi di controllo interno e soluzioni organizzative*, Giappichelli, 2009.

difficulty in meeting payment obligations, and in worst cases, lead to insolvency<sup>34</sup>. To estimate this financial risk using the values outlined in the plan we can calculate ratios<sup>35</sup>, liquidity indices<sup>36</sup>, and other indicators<sup>37</sup>.

In addition to financial risk, operational risk must also be assessed. This risk is a function of the volatility of expected results in relation to potential changes in the variables on which they depend<sup>38</sup>. Each company's unique cost structure affects operating income differently based on equal percentage changes in prices, units sold, and variable costs. Thus, each company has its own operational risk profile, which increases with the sensitivity (volatility) of operating income to changes in the variables determining it.

Sensitivity analysis is also helpful in selecting strategic alternatives. When faced with multiple decision options, choosing one with less favorable profitability prospects may be wiser if it reduces the company's exposure to risk. This analysis estimates the potential impact on profitability when one or more variables change, while holding all others constant.

A key indicator of operational risk is the margin of safety, which assesses the allowable decrease in sales before losses occur.

The volatility of expected operating income, relative to increases or decreases in its determining variables, is measured by sensitivity coefficients<sup>39</sup>.

<sup>34</sup> J. C., HULL, *Risk Management and Financial Institutions* (6th ed.), Wiley, 2021.

<sup>35</sup> Financial leverage calculated with the ratios: Debt-to-Equity Ratio: Total liabilities/Equity or Total assets/Equity Interest Coverage Ratio: EBIT/Interest expenses; ROD (Return on Debt): Interest/Financial debts. J. R. GRAHAM, *Corporate Leverage and Financial Flexibility*, in *Journal of Financial Economics*, 2022; F. MODIGLIANI AND M. H. MILLER, *The Cost of Capital, Corporation Finance, and the Theory of Investment*, in *American Economic Review*, 1958.

<sup>36</sup> The main liquidity indices are Current Ratio (Liquidity Ratio): Current Assets/Current Liabilities, Cash Conversion Cycle: Time required to convert inventory into cash. M. K. BRUNNERMEIER and L. H. PEDERSEN, *Market Liquidity and Funding Liquidity*, in *Review of Financial Studies*, 2009.

<sup>37</sup> Other useful risk indices are: Cash Flow Volatility Risk: Function of uncertainty in cash inflows and outflows and Credit Risk: Arises from the possibility that a borrower will fail to meet its contractual obligations. E. I. ALTMAN, *Z-Score and Its Evolution in Predicting Bankruptcy*, in *Journal of Credit Risk*, 2020; R. C. MERTON, *On the Pricing of Corporate Debt*, in *Journal of Finance*, 1974.

<sup>38</sup> Mentioned R. BREALEY, S. MYERS and F. ALLEN, *Principles of Corporate Finance*. A. DAMODARAN, *Strategic Risk Taking: A Framework for Risk Management*, Wharton School Publishing, 2012.

<sup>39</sup> The more used sensitivity coefficients are:

- Price Sensitivity: Calculated as the ratio of price (p) to operating income (RO), this coefficient links changes in operating income to variations in selling prices, assuming that selling and variable costs remain constant.

The higher the sensitivity coefficients, the greater the volatility of expected operating results due to changes in influencing variables; thus, operational risk increases. Measuring operating leverage is essential, as it quantifies how deviations (positive or negative) in actual sales from planned levels impact operating income. If actual sales volumes exceed or fall short of projections, revenues, variable costs, and contribution margins will increase or decrease proportionally, while fixed costs remain constant within production capacity limits. Consequently, operating income will rise or decline by a greater percentage than the corresponding change in sales. These sensitivity coefficients also serve as managerial “levers” to adjust outcomes during operations.

While sensitivity analysis helps estimate operational risk and assess the effects of favorable or unfavorable changes in key drivers of the operating result, it relies on oversimplified assumptions:

- **Isolated Variable Changes:** Each coefficient assesses the impact of changing one variable at a time while keeping others constant. Multiple variables can change simultaneously with different magnitudes and directions, resulting in unpredictable combinations of effects.
- **Equal Probability Assumption:** It simplistically assumes equal likelihood and confidence intervals for percentage price changes, variable
- **Variable Cost Sensitivity:** The ratio of unit variable costs (cv) to operating income (RO). This metric shows how changes in variable costs influence operating income, assuming constant sales and prices.
- **Sales Sensitivity (Operating Leverage):** The ratio of contribution margin (MLC) to operating income (RO) illustrates the relationship between changes in sales, contribution margin, and operating income, under the assumption of a fixed sales mix, prices, and variable unit costs.

The operating leverage ratio can also be calculated as the ratio of the annual change in operating profit to the annual change in sales revenue, as demonstrated by the formula below:

$$[(EBIT_{t+1} - EBIT_t) / EBIT_t] / (V_{t+1} - V_t) / V_t$$

The higher the value of operating leverage, the greater the increases or decreases in the operating result that occur due to fluctuations in sales. For example, if sales increase, there is an amplifying effect on the operating result arising from the constancy of fixed costs. As sales rise, revenues and variable costs will increase by the same percentages, affecting the contribution margin. However, since fixed costs remain unchanged, the operating result will grow disproportionately compared to the increase in sales. The boost in operating results from increased sales is more significant when fixed costs represent a larger share of the operating result, thus increasing the operating leverage coefficient. This effect also occurs with decreases in sales. When sales fall, fixed costs do not decrease; therefore, the operating result declines more than proportionately with the decrease in sales. In this case, the higher the operating leverage ratio, the greater the reduction in operating profit becomes.

unit costs, and sales volumes. For instance, a 10% price fluctuation may be plausible in one scenario but unrealistic in another.

To address these limitations, a fuzzy approach<sup>40</sup> can be applied to:

- Assign probabilities to possible variations.
- Define tailored confidence intervals for each variable.
- Replace deterministic scenarios (e.g., “optimistic”, “pessimistic”, “realistic”) with a single plan using fuzzy sets.

While the fuzzy approach makes a significant contribution, other critical limitations remain<sup>41</sup>. This cannot be ignored when defining future scenarios or assessing the plausibility of assumptions underpinning planning and programming. When evaluating the sustainability of the strategy and selecting strategic alternatives, it is essential to consider two levels of sensitivity:

1. The sensitivity of expected results to changes in the variables they depend on.
2. The sensitivity of these variables to changes in other uncontrollable and unpredictable contextual factors that may influence them.

<sup>40</sup> J. Gil ALUJA, *Elements for a theory of decision in uncertainty*, Kluwer Academic Publishers, 1999 and *Fuzzy Sets in the management of uncertainty*, Springer-Verlag, Berlin Heidelberg, 2004; H. J. ZIMMERMANN, *Fuzzy set theory and its applications*, II ed., Kluwer Academic Publishers, 1996. B. KOSKO and M. TOMS, *Fuzzy thinking: The new science of fuzzy logic*, Flamingo, London, 1994; L. A. ZADEH, *Fuzzy Sets*, in *Information & Control*, 8, 1965 and *Outline of a new approach to the analysis of complex systems and decision processes*, in “IEEE Transactions on Systems, Man, and Cybernetics”, Vol. smc-3, No. 1, January, 1973.

<sup>41</sup> The high subjectivity inherent in defining confidence intervals (i.e., ranges of possible variation) for key variables influencing business outcomes complicates assigning probability gradations to specific values within fuzzy sets. Additionally, external and internal factors impacting business performance often display irregular and unpredictable patterns. The real world frequently contradicts even the most meticulously developed estimates. Regardless of how broadly fuzzy set intervals are defined, positive and negative variations may exceed the assumed minimum and maximum thresholds.

The behavior of “uncontrollable variables” – those largely beyond a company’s influence, including most external environmental conditions and many internal factors – does not necessarily follow a ‘bell curve’ (i.e., Gaussian distribution). Significant discontinuities often persist, failing to offset even over medium-to-long terms. Determinants of expected outcomes are subject to variations that may exceed assumed plausible ranges. For example, in each company, some variables may exhibit minor discontinuities while others display extreme irregularity, aligning with what Mandelbrot termed “wild irregularity”. B. B. MANDELBROT, *Il disordine dei mercati. Una visione frattale di rischio, rovina e redditività*, Einaudi, Torino, 2005.

## 5.7. Strategic scenarios from the plan

While developing the plan, the judicial administrator may find that the seized entity fits into one of the following four strategic scenarios<sup>42</sup>:

1. Insolvency.
2. Irreversible crisis.
3. Reversible crisis.
4. Continuity.

### 1. *Insolvency*

This situation is quite common, as shown by the high rate of business liquidation after seizures. This occurs because of the challenges faced by the judicial administration's dual goals, which are difficult to reconcile: eradicating mafia infiltration while maintaining continuity in a business that heavily depends on organized crime support. If the seized company is insolvent, or if the plan evidence that insolvency is very likely in the short term due to the loss of benefits from mafia connections (costs of legalization), the judicial administrator must initiate judicial liquidation to ensure compliance with the *par condicio creditorum* principle (equal treatment of creditors). The survival of a seized enterprise with prospects for profitability, even after removing the mafia connection, aligns with the public interest in safeguarding jobs and enterprises that create value. Otherwise, liquidation of the company remains the only option.

After initiating judicial liquidation, judicial administrators should consider using the benefits outlined in Article 240 of the Italian Crisis and Insolvency Code (Legislative Decree No. 14/2019). According to this article, a proposal to negotiate an out-of-court business crisis resolution with creditors can be made to facilitate the restructuring of a company's debt and avoid insolvency. This proposal can be submitted by the debtor, affiliated companies, or companies under common control under these conditions: a) at least one year has passed since the judicial liquidation ruling, b) no more than two years have passed since the ruling, and c) the proposal must include resources that increase asset value by at least ten percent.

For groups undergoing judicial liquidation, Article 240(4-bis) allows the submission of one or multiple coordinated composition proposals to creditors by companies within the same group if it helps reduce overall proce-

<sup>42</sup> Mentioned D. NICOLÒ, *La relazione sulle "concrete prospettive di prosecuzione dell'impresa" sottoposta a sequestro: il contributo della pianificazione, della programmazione e del controllo di gestione*.



dural costs, safeguard creditors, and limit the spread of the crisis, preventing a “chain effect” within the corporate group that can overwhelm entities capable of continuing operations<sup>43</sup>.

## 2. *Irreversible crisis*

Whether the plan’s evidence crisis is irreversible, the judicial administrator may initiate voluntary liquidation if all creditors can be paid by liquidating the assets; otherwise, the only option is judicial liquidation of the seized company.

When the seizure involves companies or majority shareholdings, the judicial administrator, subject to court approval, can initiate insolvency proceedings such as preventive composition with creditors debt restructuring agreements, or a certified plan<sup>44</sup>.

## 3. *Reversible crisis*

If the plan prepared by the judicial administrator indicates that the company can overcome its financial difficulties and continue operations, he will propose to the delegated judge that the business activity be allowed to continue. The plan must consider the costs of legalization as well as the loss of benefits from supporting organized crime. Article 63, paragraph 8-bis of the Anti-Mafia Code stipulates that the judicial administrator can request the approval of a debt restructuring agreement or prepare a certified recovery plan, provided that the conditions for recovering the company exist.

## 4. *Continuity*

The plan may indicate that the seized company can sustain long-term operations under the guidance of the judicial administrator, considering the costs associated with legalizing operations after severing ties with organized crime. However, this requires restructuring governance and value-chain processes, as well as implementing strict compliance protocols to ensure ongoing administrative legitimacy. In this case, the judicial administrator must propose to the delegated judge the continuation of the company.

<sup>43</sup> A. DEL POZZO, D. NICOLÒ C. VERMIGLIO and F. TONNARELLO, *Profili economico-aziendali della crisi di gruppo*, in G. MINUTOLI and F. VERMIGLIO (Eds.), *I concordati nella liquidazione giudiziale*, Wolters Kluwer Italia, 2024.

<sup>44</sup> Article 63, paragraph 8-bis of the Anti-Mafia Code (introduced by Article 22, paragraph 1, letter c, of Law No. 161/2017).

## THE EFFECT OF JUDICIAL REMOVAL OF THE MAFIA ON THE PERFORMANCE OF SEIZED ITALIAN FIRMS AND THEIR LEGITIMATE COMPETITORS

### 6.1. The effect of judicial removal of the mafia on the performance of seized Italian firms

Judicial administration (JA) aims to restore restoring legality<sup>1</sup> by intervening when it has not been possible to prevent mafia infiltration<sup>2</sup>. This, on one hand, produces the positive effect of bringing a company infiltrated by crime back into the fold of legality, but on the other hand, it often negatively impacts the performance of seized enterprises.

Italian companies under JA experienced a decrease in ROA and ROI of 4.42% and 2.42%, respectively, along with a reduction in technical and cost efficiency<sup>3</sup>. After the mafia is removed, the profitability of these enterprises under JA decreases for several reasons. First, these seized enterprises lose their competitive advantage over legitimate (non-criminal) ones, demonstrating that their success relies on their connection with organized crime<sup>4</sup>. Furthermore, the costs of legalization arise because the administrator must comply with regulations concerning tax payments, wages, social security, insurance contributions, and environmental regulations<sup>5</sup>. Abnormal mate-

<sup>1</sup> E. BIVONA, *Aspetti critici nei processi di risanamento e sviluppo duraturo delle aziende confiscate alla criminalità organizzata*, in AA.VV., *Il bene dell'azienda*. Scritti in onore di Vittorio Coda, Giuffrè, Milano, 2012, pp. 321-353.

<sup>2</sup> F. LA ROSA, *La dimensione socio-ambientale dello sviluppo integrale delle aziende. Il ruolo delle piccole imprese meridionali tra società civile e criminalità organizzata*, in *Small Business - Piccola impresa*, n. 1, 2010.

<sup>3</sup> Mentioned F. M. CALAMUNCI, *What happens in criminal firms after godfather management removal? Judicial administration and firms' performance*.

<sup>4</sup> Mentioned P. ARLACCHI, *Mafia, peasants and great estates: Society in traditional Calabria*; mentioned P. ARLACCHI, *La mafia imprenditrice. Dalla Calabria al centro dell'inferno*.

<sup>5</sup> Mentioned G. ALBANESE and G. MARINELLI, *Organized crime and productivity: Evidence from firm-level data*.

rial, goods, and personnel costs increase significantly within post-seizure “shell firms”, presumably due to the disruption of fictitious commercial transactions related to money laundering. The appointment of judicial administrators does not have a significant impact on the accounting practices of transactions aimed at laundering illicit money in “real firms”, which also engage in genuine business activities in addition to those intended to launder illicit money. This raises doubts about the ability of legal administrators to entirely deter money laundering practices<sup>6</sup>.

These adverse effects on company performance under JA are so severe that in Italy, approximately 68% of companies cease to exist soon after the initiation of this procedure<sup>7</sup>. According to the 2023 annual report from the National Agency for the Administration and Destination of Seized and Confiscated Property by Organized Crime (ANBSC), only 5% of the businesses seized and confiscated between 2020 and 2023 remain active in the market. 27% of these seized companies continue their operations through a plan or cooperative management by employees. 68% of seized companies are unable to continue operating in compliance with the law after the mafia is removed<sup>8</sup>. This matches Transcrime data<sup>9</sup>.

A survey has shown that in Italy, liquidation is the almost exclusive solution (about 90% of the cases examined). This mainly results from causes such as the absence or lack of employees, company inactivity due to the inability to operate or shareholders’ inactivity meetings, lack of assets necessary to achieve the corporate purpose, high debt, significant losses, failure to approve or file financial statements, achievement of the corporate purpose, inability to meet the continuity requirement, and other specific causes. The sale of the company was driven by issues related to financial performance, governance, or the goal of safeguarding jobs<sup>10</sup>.

<sup>6</sup> Mentioned D. RAVENDA, J. M. ARGILÉS-BOSCH and M. M. VALENCIA-SILVA, *Detection model of legally registered Mafia firms in Italy*, in *European Management Review*, Vol. 12, No.

<sup>7</sup> ANBSC – AGENZIA NAZIONALE PER L’AMMINISTRAZIONE E LA DESTINAZIONE DEI BENI SEQUESTRATI E CONFISCATI ALLA CRIMINALITÀ ORGANIZZATA, *Relazione sull’attività svolta. Anno 2023*.

<sup>8</sup> Mentioned ANBSC – AGENZIA NAZIONALE PER L’AMMINISTRAZIONE E LA DESTINAZIONE DEI BENI SEQUESTRATI E CONFISCATI ALLA CRIMINALITÀ ORGANIZZATA, *Relazione sull’attività svolta. Anno 2023*.

<sup>9</sup> Mentioned TRANSCRIME, *Progetto PON sicurezza, 20072013, Gli investimenti delle mafie, Rapporto Linea 1*.

<sup>10</sup> Mentioned F. LA ROSA and S. PATERNOSTRO, *L’amministrazione delle aziende confiscate alla criminalità organizzata. La proposta di un framework di studio e un’analisi esplorativa dei decreti di destinazione*.

Once seized, many of these companies lose their criminal financial backing and the market influence derived from intimidating competitors; therefore, they are often liquidated, revealing the inherent fragility of mafia-controlled businesses. The judicial administrator's duty to enable these firms to continue operating after removing the mafia serves the collective interest of safeguarding jobs and companies. However, often liquidation is the only option because these businesses cannot survive due to the costs of legalization and the failure of their business models without support from criminal organizations. This is evident from the high percentage of companies that enter liquidation soon after initiating the JA proceeding, as they struggle to operate without mafia funding, intimidation of competitors, and support from corruption.

Another reason for the high percentage of companies liquidated after the start of JA proceedings is that many of them are “Cartiera” and “Paravento” businesses, whose primary or sole goal is money laundering and therefore lack a viable business model that allows them to operate effectively in the market. For this reason, they are destined for liquidation. Only a few productive companies are potentially recoverable under the law<sup>11</sup>.

The large number of companies under JA that are liquidated could reinforce a mistaken belief: “mafia-run” businesses create jobs. In contrast, government intervention through the seizure of a mafia-controlled company destroys jobs and leads to social losses in employment and wealth, also revealing institutional weakness<sup>12</sup>. In some regions where the mafia is deeply rooted, this misconception might strengthen the dangerous social legitimacy of criminal groups.

The high percentage of liquidated companies is not only a “physiological” effect of mafia removal but also results from issues in managing seized and confiscated companies<sup>13</sup>. Judicial administrators often lack entrepreneurial skills because of their educational and professional backgrounds. Therefore, despite legislative guidelines that encourage increased corporate value, these judicial administrators usually adopt a non-entrepreneurial, conservative approach, struggling to keep companies active in the market<sup>14</sup>.

<sup>11</sup> Mentioned F. LA ROSA and S. PATERNOSTRO, *L'amministrazione delle aziende confiscate alla criminalità organizzata. La proposta di un framework di studio e un'analisi esplorativa dei decreti di destinazione*.

<sup>12</sup> Ibidem.

<sup>13</sup> Ibidem.

<sup>14</sup> Mentioned CNDCEC (Consiglio Nazionale dei Dottori Commercialisti e degli Esperti Contabili) – SIDREA (Società italiana dei Docenti di Ragioneria e di Economia Aziendale), *Linee guida per la valutazione delle aziende sequestrate e confiscate*, 2020, 2.

## 6.2. The effect of the judicial removal of mafia from infiltrated firms on the performance of legitimate competitors: Insights from ongoing research in Italy

Enforcing the state's anti-mafia measures has a positive impact on competition, innovation, and participation in public contracts and procurement by reducing the intimidation of public officials. According to Slutzky and Zeume, after these measures, firms tend to decrease in size and profitability, as the removal of the mafia increases competition among businesses<sup>15</sup>.

Other scholars found opposite results. Calamunci and Drago demonstrate that after a firm enters JA, there is a strong positive effect on the profitability, turnover, and investment of competitors operating in the same market<sup>16</sup>. This positive impact has been measured by Fabrizi et al. in terms of EBITDA as a percentage of total assets, operating profitability as measured by Return on Assets (ROA), and a significant decrease in raw material costs<sup>17</sup>. Chirchop et al. confirmed this evidence: following anti-mafia police actions, peer firms improve their performance, increase capital investment, and lower costs for raw materials<sup>18</sup>.

Considering the conflicting views in the literature, we conducted a study on the effects of initiating JA in mafia companies on legitimate competitors operating in Italy within the same industry and province<sup>19</sup>, analyzing data from the financial statements of Italian companies sourced from the AIDA database provided by Bureau Van Dijk<sup>20</sup>.

We used Difference-in-Differences (DiD) estimators with the intertemporal treatment effects methodology developed by Chaisemartin and D'Haultfoeuille<sup>21</sup> to analyze the causal effects on legitimate enterprises

<sup>15</sup> Mentioned P. SLUTZKY and S. ZEUME, *Organized crime and firms: Evidence from antimafia enforcement actions*, in *Management Science*, 70(10): 6569-6596.

<sup>16</sup> Mentioned F. M. CALAMUNCI and F. DRAGO, *The economic impact of organized crime infiltration in the legal economy: Evidence from the judicial administration of organized crime firms*.

<sup>17</sup> Mentioned M. FABRIZI, P. MALASPINA and A. PARBONETTI, *Caratteristiche e modalità di gestione delle aziende criminali*.

<sup>18</sup> Mentioned J. CHIRCOP, M. FABRIZI, P. MALASPINA and A. PARBONETTI, *Anti-Mafia Police Actions, Criminal Firms, and Peer Firm Tax Avoidance*.

<sup>19</sup> This ongoing study is part of the mentioned PRIN-PNRR research project, presented in several conferences to discuss in the scientific community the first findings.

<sup>20</sup> This database served as our main resource for identifying criminal enterprises, as it includes details on legal actions involving businesses, including confiscation, seizure, and judicial administration.

<sup>21</sup> This method is effective for assessing treatment effects – in our case, the initiation of the JA procedure – when they vary across different groups and periods. This approach

of initiating the JA procedure in competitors infiltrated by organized crime.

Although the research is still ongoing, it has already produced interesting preliminary results that shed light on the mixed effects on the performance of legal firms following the removal of competing enterprises under judicial administration. We observed nonlinear dynamics characterized by a U-shaped pattern: an initial period of disruption is followed by a positive impact as legal firms regain market share and stabilize their performance. The study shows that after removing mafia-infiltrated businesses, legal firms operating in the same province and sector, before JA proceedings begin, and competing with criminal enterprises, experience a short-term decline in profitability metrics such as operating Return on Assets (ROA), Return on Sales (ROS), and Technical Efficiency (TE). However, their profitability improves in the medium term, approximately three years after the organized crime removal. This suggests that while removing mafia-controlled firms ultimately benefits legitimate competitors, the benefits do not materialize in the short run.

Our study confirms earlier research indicating that the judicial removal of mafia influence from infiltrated companies through JA has a positive effect on legitimate businesses<sup>22</sup>. However, it provides an original insight: in the short term, initiating JA procedures causes adverse effects on both the infiltrated companies and their legitimate competitors. This is because the crisis triggered by JA leads to the loss of spillovers that often benefit firms within the same sector and area. As noted earlier in the fourth chapter, scholars demonstrated that some legitimate businesses benefit from organized crime, as they gain from the reduction of competition imposed by these criminal groups<sup>23</sup> and other positive “in sign” effects such as improved access to financing, faster bureaucratic procedures, and lower prices, in addition to the well-known negative externalities<sup>24</sup>.

is appropriate for scenarios where treatment effects are not uniform and fluctuate over time and across locations. It allows us to thoroughly examine judicial administration's immediate and long-term impacts. C. DE CHAISEMARTIN and X. D'HAULTFOEUILLE, *Difference-in-differences estimators of intertemporal treatment effects*, in Review of Economics and Statistics, 2024: 1-45.

<sup>22</sup> Mentioned F. M. CALAMUNCI and F. DRAGO, *The economic impact of organized crime infiltration in the legal economy: Evidence from the judicial administration of organized crime firms*; Mentioned M. FABRIZI, P. MALASPINA and A. PARBONETTI, *Caratteristiche e modalità di gestione delle aziende criminali*.

<sup>23</sup> Mentioned P. SLUTZKY and S. ZEUME, *Organized crime and firms: Evidence from antimafia enforcement actions*, in Management Science, 70(10): 6569-6596.

<sup>24</sup> Mentioned F. LA ROSA and F. BERNINI, *Venture resilience, criminal approaches and the welfare state: entrepreneurial decisions and opinions one year after the COVID-19 outbreak*.

Furthermore, legitimate firms benefit from market distortions caused by companies infiltrated by the mafia. As a result, they face negative effects immediately after organized crime is removed, needing time to reorganize and take advantage of operating in a market free from mafia influence. This transition period is essential for legal firms to adapt and ultimately succeed in a fairer and more competitive environment.

### **6.3. Judicial administration and family business resilience: Insights from a natural experiment in Italy**

We conducted another study<sup>25</sup> to compare the impact on company performance of removing a leader and replacing them with a judicial administrator after the initiation of judicial administration. The study distinguishes between family-owned businesses and other businesses.

We addressed this research question because family-owned businesses tend to be more vulnerable than other companies when it comes to replacing their leaders, whether due to death or retirement<sup>26</sup>. We hypothesize that the family serves as a vital source of strength due to the valuable resources it provides.

This question is far from trivial, as scholarly research has highlighted that leadership succession in family firms involving a professional administrator, such as the judicial administrator in companies subjected to JA, improves company performance. This happens because it removes issues caused by the overlap between the family and the business, which are often sources of inefficiencies and conflicts<sup>27</sup>.

<sup>25</sup> This study has been conducted in the context of the mentioned PRIN PNRR research project is synthetized in a scientific paper titled “Resilience in Family Firms: Insights from a Natural Experiment in Judicial Administration”. The findings of this study, currently under review in a scientific international journal, has been presented to scientific community in several conference and workshop specialized on family businesses.

<sup>26</sup> BERNIS K.V. and KLARNER P., *A review of the ceo succession literature and a future research program*, in *Academy of Management Perspectives*, 31, 2017: 83-108; R.H. BROCKHAUS, *Family business succession: Suggestions for future research*, in *Family Business Review*, 17, 2004: 165-177; A. DE MASSIS, J. H. CHUA and J. J. CHRISMAN, *Factors preventing intra-family succession*, in *Family Business Review*, 2008, 21: 183-199; W.C. Handler, *Succession in family business: A review of the research*, in *Family Business Review*, 7, 1994: 133-157; I. LE BRETON-MILLER, D. MILLER D. and L. P. STEIER, *Toward an integrative model of effective fob succession*, in *Entrepreneurship theory and practice* 28, 2004: 305-328; D.J. SCHEPKER, Y. KIM, P. C. PATEL, S. M. THATCHER and M.C. CAMPION, *Ceo succession, strategic change, and post-succession performance: A meta-analysis*, in *The Leadership Quarterly*, 28, 2017: 701-720.

<sup>27</sup> M. BURKART, F. PANUNZI and A. SHLEIFER, *Family firms*, in *The Journal of Finance*, 58, 2003: 2167-2201; R. CHITTOOR and R. DAS, *Professionalization of*



This study utilizes financial data from Italian firms sourced from Bureau van Dijk's (BvD) AIDA database, which also provides information to identify enterprises subject to Judicial Administrator (JA) procedures.

After excluding questionable cases and companies with missing data, the sample included 142 companies. These were divided into 108 non-family businesses and 34 family businesses. Since all companies in our sample were below the small business threshold, with fewer than 50 employees, and held at least 50% of the share capital, we also adopted the criterion of cross-referencing the surnames of directors and shareholders to verify if at least two members of the controlling family held roles on the Board of Directors (BoDs)<sup>28</sup>. Ambiguous cases were resolved using external data sources (e.g., company websites, press reports and social network analyses).

We applied the Stochastic Frontier Analysis (SFA) method to estimate firm efficiency scores. For causal inference, we utilized Difference-in-Differences (DiD) estimators of intertemporal treatment effects, as developed by De Chaisemartin and d'Haultfoeulle<sup>29</sup>.

A statistically significant drop in Return on Assets (ROA) was observed for both family and non-family businesses during the second and third years after the judicial administrator's appointment as CEO. However, the decline is more severe for family firms, especially in the year following the founder's removal. By the third year after CEO removal, family businesses show an improvement in ROA, reaching levels similar to those of non-family companies, although they are still slightly lower than their pre-takeover performance. Both family and non-family businesses experience a statistically significant decrease in technical efficiency during the three years after the judicial administrator takes control. However, the decline is more pronounced in family businesses. The reduction in sales profitability is even more noticeable for family businesses, although small in scale, compared to non-family companies during this period. Notably, family firms face a sharp, statistically significant drop in sales profitability immediately following the removal of the family leader in the first year. This suggests that in family businesses affected by crime, operational performance and

*management and succession performance – a vital linkage*, in *Family Business Review*, 20, 2007: 65-79; M. CUCCULELLI and G. MICUCCI, *Family succession and firm performance: Evidence from Italian family firms*, in *Journal of Corporate Finance*, 14, 2008: 17-31.

<sup>28</sup> M. BERTRAND and A. SCHOAR, *The role of family in family firms*, in *Journal of Economic Perspectives*, 20, 2006: 73-96.

<sup>29</sup> Mentioned C. DE CHAISEMARTIN and X. D'HAULTFOEUILLE, *Difference-in-differences estimators of intertemporal treatment effects*.



sales profitability, including technical efficiency, are closely tied to family leadership. Their financial and operational success heavily depends on having a family-appointed leader, while external management interventions, like judicial administrators, tend to cause ongoing negative effects, especially on technical efficiency and short-term sales profitability.

We explain these findings through Agency Theory, emphasizing the dual role of family resources as both competitive assets and potential sources of fragility, as well as Resource-Based View theory, highlighting how “familiness”<sup>30</sup> is a fundamental resource for family firms. This is evident in how the severing of ties with a family owner and leader of the firm, prompted by the initiation of the JA procedure, causes a shock that leads to a decline in performance compared to other firms subjected to the same judicial procedure. Interesting implications arise for policymakers to underscore the need for policies that can mitigate the adverse effects of JA on family firms and protect overall economic value and jobs.

<sup>30</sup> A. CALABRÒ, H. FRANK, A. MINICHILLI and J. SUESS-REYES, *Business families in times of crises: The backbone of family firm resilience and continuity*, in *Journal of Family Business Strategy*, 12, 2021: 100442; T. G. HABBERSHON and M. L. WILLIAM, *A resource-based framework for assessing the strategic advantages of family firms*, in *Family Business Review*, 12, 1999: 1-25; A. MINICHILLI, M. BROGI and A. CALABRÒ, *Weathering the storm: Family ownership, governance, and performance through the financial and economic crisis*, in *Corporate Governance: An International Review*, 24, 2016: 552-568; D. G. SIRMON and M. A. HITT, *Managing resources: Linking unique resources, management, and wealth creation in family firms*, in *Entrepreneurship Theory and Practice*, 27, 2003: 339-358.

## CONCLUSION

This book highlights the negative economic effects caused by the mafia infiltrating businesses, institutions, and the economy to gain power, generate profits, and launder illegal money. Organized crime distorts prices and undermines free competition, forcing law-abiding businesses out of the market. Despite these severe adverse economic impacts, few studies measure the effects of the mafia on firm performance. This clearly emerged from the literature review we conducted in the first chapter.

Although this study focuses on how organized crime affects companies' technical efficiency, profitability, and research and development investments, we also explore four interconnected themes:

- Measuring the presence of the mafia through indicators.
- The infiltration of organized crime into the legal economy.
- Evaluating the impact of the mafia and its removal on firm performance regarding profitability and technical efficiency.
- Impact of Judicial Administration on seized businesses and their competitors' performance, and the role of planning and management control in managing the transition from mafia control to legality.

In addition to reviewing the literature on the topics mentioned above, this book presents both preliminary and final results from the ongoing PRIN PNRR 2022 research project. This project examines the effects of organized crime on the technical efficiency of companies, their investments in research and development, and other key aspects of business performance in Italy. It results from an interdisciplinary collaboration among the University of Messina, the University "Mediterranea" of Reggio Calabria, and the University for Foreigners "Dante Alighieri" of Reggio Calabria.

## Key Findings

### *The gap in the literature and theoretical background*

The scientific literature offers insights into various aspects of the mafia, examined from different perspectives: historical, sociological, criminological, economic, and legal. Many studies examine the effect of crime on firm performance; however, few have explored the effects of organized crime on firm performance.

This gap in the literature is highlighted in the first chapter through a systematic literature review and a traditional literature review. The latter also provides a solid scientific theoretical framework for the topics studied in this book.

### *Measuring the presence of the mafia through indicators*

The mafia is a complex and multifaceted phenomenon. A single or limited set of variables cannot accurately measure organized crime across different areas. It requires the use of composite indicators based on multiple factors that capture different aspects of organized crime. The wide range of criminal activities conducted by the mafia, their concealed nature, victims' hesitation to report mafia crimes, and the challenges in identifying and punishing offenders often result in an underestimation of its true extent. The second chapter reviews several indicators proposed by scholars, research institutes, and statistical agencies to assess the presence of organized crime across different regions. The review concludes with the composite indicator developed by Forgione and Migliardo as part of the PRIN PNRR project. We compare this indicator to others by analyzing its features and benefits. Since it is calculated at the municipal level, it provides a more accurate estimate of mafia presence in highly diverse areas, even within the same province. It was derived from the INVIND dataset from the Bank of Italy, which captures businesses' perceptions of criminal risk in Italy. This estimate employs the Data Envelopment Analysis (DEA) method and the Robust Multidirectional Benefit-of-the-Doubt (RMBoD) technique, combining multiple crime-related variables from perception data.

## *The infiltration of organized crime into the legal economy*

In recent years, criminal organizations have reduced their use of traditional money laundering methods involving businesses to lower the risk of being uncovered by investigative authorities, as these authorities have an effective system for monitoring money laundering activities. This detection system is implemented by the UIF (Financial Intelligence Unit) of the Bank of Italy and leverages the advanced investigative capabilities of law enforcement agencies such as the Guardia di Finanza, the National Anti-Mafia Directorate, and the Anti-Mafia Investigation Directorate, as well as the increasing specialization of judicial authorities. This system relies on the requirement for professionals, notaries, financial institutions, and economic operators to report suspicious transactions (STRs) to the UIF. Traditional methods of laundering illegal money have also become riskier due to the introduction of electronic invoicing, the obligation to track all financial movements, and restrictions on cash transactions. Consequently, organized crime has increasingly been laundering illicit money through new payment systems based entirely on trust networks (hawala), cryptocurrencies, shadow banks, secret international financial networks, and infiltration into startups, including via crowdfunding platforms. To manage their criminal activities and run their operations, these groups also use advanced technologies like encrypted communication platforms that investigative agencies can't intercept or decode, making them more challenging to identify.

## *Evaluating the impact of the mafia and its removal on firm performance regarding profitability and technical efficiency*

Criminal infiltration in the economy distorts market dynamics by giving illicit firms unfair advantages through tax and social security evasion, intimidation of competitors, suppliers, and public officials, and exploitation of workers. As a result, legitimate companies experience declines in competitiveness, profitability, and technical efficiency. Our ongoing PRIN PNRR research project shows that profitability and other business performance metrics, especially technical efficiency, are significantly affected when the level of crime exceeds certain thresholds. Our study of high-growth startups, called Gazelle, demonstrates how organized crime negatively impacts their profitability in terms of Return on Assets (ROA). We discussed this initial finding in the fourth chapter. This research is still ongoing to better understand how organized crime influences technical ef-

efficiency, sales profitability, and growth rates of Gazelle startups. Additionally, we present findings from studies confirming this negative influence of mafia on firm performance, particularly in Italy's construction sector, conducted by scholars involved in this project.

*Impact of Judicial Administration on seized businesses and their competitors' performance, and the role of planning and management control in managing the transition from mafia control to legality*

Although seizing and confiscating mafia-owned businesses, along with placing them under judicial administration, are the only ways to eradicate the mafia from companies and preserve their continuation, these measures often lead to the liquidation of the seized businesses, which are unable to operate legally. Over 60% of these businesses in Italy cease to exist shortly after being placed under judicial administration. This results in significant loss of value and jobs. These criminal enterprises mainly thrive by exploiting financial support, using the intimidating, market-influencing power of the mafia, and engaging in tax and social security evasion, labor exploitation, and violations of workplace safety and environmental laws. When the conditions that enable them to compete with legitimate companies vanish, many of these businesses, infiltrated by or colluding with crime, face a crisis and cease to exist. Strategic planning, management control, and reporting are essential for assessing the profitability of seized businesses and guiding their transition into law-abiding entities. Research indicates that legitimate competitors often benefit from the decrease in unfair competition caused by the removal of mafia-infiltrated or colluding firms following the initiation of the judicial administration process. This suggests the potential for the sector's recovery. Our research, conducted within the PRIN PNRR project on the impact of judicial administration on law-abiding competitors within the same industry and province, reveals a non-linear relationship. Immediately after the start of this judicial process, legal firms competing within the same province experience adverse effects on their performance; however, in the medium term, conditions improve as legitimate competitors regain their market share and stability following the removal of top management from firms under judicial administration. In another study (currently under review in a leading international scientific journal), we examined how ownership structure (family vs. non-family) affects efficiency after organized crime control is eliminated. This removal highlights the vulnerabilities of seized firms, especially family-run ones, which face

challenges related to leadership transitions and the loss of family-provided resources essential for their sustainability. These findings underscore the importance of support mechanisms after removal to ensure the long-term viability of seized family firms, thereby reducing their high vulnerability. The final two chapters of this book (fifth and sixth) address these issues.

### *Theoretical implications of this study*

This study's main theoretical contribution is a systematic analysis of how organized crime infiltrates the economy and businesses, its effect on business performance, and the role of planning and management control tools within judicial administration. A credible plan, along with strategic management and control tools to evaluate sustainability and conduct risk assessments, is essential for the judicial administrator to assess the seized company's ability to continue operations while managing the costs of legalization and the loss of benefits from criminal organization support. This process helps protect the company's economic value, which might otherwise be lost, and safeguards the employment of its workers. Planning and management control are also fundamental in managing the transition of seized companies under judicial administration from mafia control to legality.

### *Practical implications for policymakers*

The composite indicator developed by the research unit at the University of Messina, the leader of the mentioned project, enables tailored policies to fight the mafia by providing a detailed measurement of organized crime's presence at the municipal level. This also contributes to the deployment of police officers and magistrates specialized in combating organized crime in areas with the highest levels of mafia activity.

This book also contributes to the development of effective strategies for preventing and combating organized crime by providing insights into the current money laundering techniques used by organized crime, as reported by the Financial Intelligence Unit (UIF) of the Bank of Italy and European and international law enforcement authorities.

The studies reviewed in this book provide valuable insights for policymakers. A deeper understanding of organized crime helps in developing targeted prevention and response strategies, especially in sectors most vul-

nerable to organized crime infiltration, such as the construction industry. The importance of supporting high-growth startups, which are significantly affected by organized crime, has also become clear. We found that family businesses experience a greater negative impact on their technical efficiency, operating profitability (ROA), and Return on Assets (ROS) during judicial administration than non-family businesses, as they rely more on resources provided by the owner family (familiness). This highlights the importance of creating policies that can reduce the adverse effects of organized crime on family businesses, their performance, economic value, and employment.

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The mafia poses a significant threat to society, institutions, and businesses. To gain power, generate profits, and launder illegal money, organized crime infiltrates companies and public institutions, distorts market prices, and undermines the free competition of legitimate firms. Despite these serious negative effects, few studies measure the impact of the mafia and its removal on firm performance. To fill this gap, this book presents the findings of the PRIN PNRR 2022 research project, titled "The Effect of Organized Crime on Firm Technical Efficiency and R&D Investments," conducted in collaboration by the University of Messina (leader), the University Mediterranea of Reggio Calabria, and the University for Foreigners Dante Alighieri of Reggio Calabria. It also explores related topics, such as evaluating the presence of the mafia, the infiltration of organized crime into the legitimate economy, and the role of planning and management control systems in assessing the prospects for the continuity of criminal enterprises under judicial administration and managing their transition from organized crime control to legality, all while protecting operations and jobs.

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