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Accounting and Finance

**CRIMINAL COMPANIES AND MONEY
LAUNDERING
AN EMPIRICAL ANALYSIS ON RED FLAG INDICATORS
OF ORGANIZED CRIME**

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“Studiare la mafia per combatterla”

Nando dalla Chiesa

*A mamma e papà,
A Luca e Elena,
E a te Catalin,*

Grazie

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INTRODUCTION & SUMMARY

THE REASON OF MY DISSERTATION – The purpose of this dissertation is to study the organized crime phenomenon with particular regard to money laundering activities and the infiltration in the legal economy. The reasons behind the choice of this particular phenomena over another one, are related to the following statement by ISTAT for 2014:

“The underground economy (submerged and deriving from illegal activities) is worth 211 billion euros, equal to 13.0% of GDP. The value added generated by the underground economy alone amounts to 194.4 billion euro (12.0% of GDP), the one related to illegal activities (including related activities) at around 17 billion euros (1% of GDP). Between 2011 and 2014 the weight on GDP of the unobserved economy passed from 12.4% to 13.0%”

The figures give an idea on how much this phenomenon is widespread and how much it affects the legal economy and its correct functioning. The final objective of this dissertation is to verify if criminal companies present similar patterns in their financial information in order to identify red flag indicators of organized crime.

FIRST CHAPTER – ORGANIZED CRIME IN ITALY – In this chapter, the main goal is to provide a clear description of the main criminal organizations operating in Italy, where they operate and how are structured. The dissertation will then focus on the origin of the illicit profits and the consequent motivations behind the infiltration in the legal economy.

SECOND CHAPTER – MONEY LAUNDERING – The dissertation continues focusing on money laundering as one of the motivations behind the infiltration in the legal economy. In particular, will be illustrated the most common methods (cash smuggling, trade-based money laundering etc.), the geographic and sector vulnerabilities that characterize Italy and allow an easier implementation of these methods and finally will be illustrated a framework of the anti-money laundering legislation and the international conventions combating this phenomenon.

THIRD CHAPTER – CRIMINAL COMPANIES – This chapter will focus on criminal companies owned or managed by members of organized crime; in particular, will illustrate the sectors of infiltration, the most common type of legal form and the type of owners. Finally, will be illustrate the results of some recent studies that tried to identify common characteristics of criminal companies in terms of financial values.

FOURTH CHAPTER – EMPIRICAL ANALYSIS – The final chapter of this dissertation will illustrate an empirical analysis on a sample of criminal companies related with organized crime. The analysis will focus on financial information from the Balance Sheet and the Income Statement and will try to identify some financial indicators of organized crime.

ORGANIZED CRIME IN ITALY

1.1 Introduction

The term “organized crime” denotes a method of conducting criminal operations which is distinct from other forms of criminal behaviour. Its salient features are violence, corruption, ongoing criminal activity, and the precedence of the group over any single member. Organized criminal groups are characterised by their continuity over time regardless of the mortality of their members. They are not dependent on the continued participation of any single individual. (Adamoli et al, 1998).

The modus operandi of criminal organizations involves three main behaviours:

- The use of violence and intimidation against victims, members of the same organizations or members of other organizations;
- The use of influence and corruption of politicians, the public administration, the criminal justice system and the private sector as a tool to facilitate their operations;
- The process of money laundering used to disguise the original ownership and control of the proceeds of criminal conduct by making such proceeds appear to have derived from a legitimate source.

Each criminal organization is divided into clans characterized by strict hierarchy, which are able to manage large, transverse markets and sometimes real criminal monopolies are formed. (UNICRI, 2016)

1.2 Main criminal organizations

Organized crime in Italy have been prevalent in Italy, especially Southern Italy, for centuries and have affected the social and economic life of many Italian regions since at least the 19th century.

The oldest and most powerful criminal organizations operating in Italy include: Cosa Nostra based in the region Sicily, 'Ndrangheta based in Calabria, Camorra based in Campania and finally Sacra Corona Unita based in Apulia.

Organized crime in Campania - Camorra

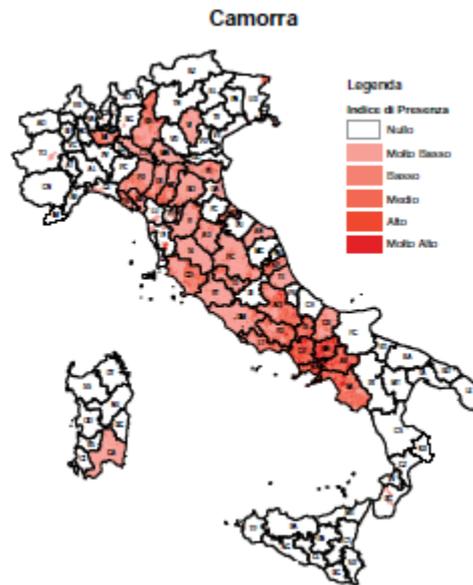


Figure 1 Presence of Camorra in Italy

Source: Transcrime 2013

The origins of Camorra are rooted among the lower socio-economic strata of the population. Its structured in small criminal groups or in divisions of existing clans. The absence of a hierarchical structure increases the propensity of Camorra clans to get involved in acts of contraposition, in which situations of alliance transform easily into violent conflict among the organization's ranks. Camorra clans offer an alternative to lawful authority and responds to the multitude of problems stemming from the area of Naples being least developed. The main activity is extortion targeting the business world; other activities include usury, vandalism, money laundering, bribery of public officials, drug trafficking, the recycling of waste (which is still one of the most extensive areas of criminal interest), and counterfeiting. (UNICRI, 2016)

Organized crime in Calabria – ‘Ndrangheta

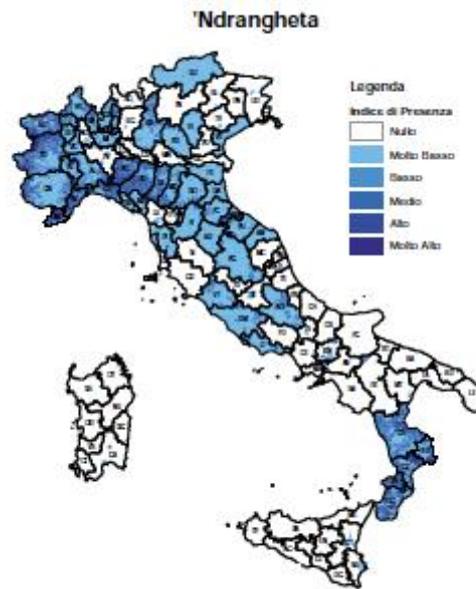


Figure 2 Presence of ‘Ndrangheta in Italy

Source: Transcrime 2013

Considered for a long time a second level threat, the Calabrian organization had the possibility, due to the lack of attention, to grow and expand in the Northern regions of Italy (mainly Lombardy and Piedmont) but also in Europe and other foreign countries with particular regard for those that are crucial for drug trafficking. (Parliamentary Commission on organized crime, 2008)

The strength of the organization it is based mainly on two factors: the family ties between the members that make it harder for members to leave the organization or to betray it; and secondly, the structure of the organization that has changed gradually implementing different techniques linked to the process of globalization and the need to move people, goods and capital around the world.

Their main activities include the collection of protection money (*pizzo*) from local businesses which are also exploited to create illegal channels for employment as an additional way of gaining control over the territory, the corruption of local political authorities, the infiltration in the alternative energy production sector and finally the principal role played in the drug market.

Organized crime in Sicily – Cosa Nostra

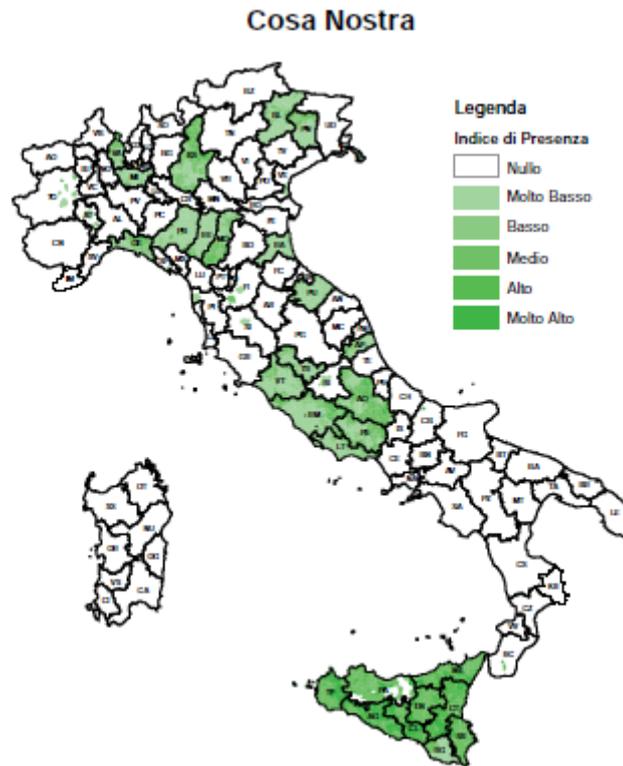


Figure 3 Presence of Cosa Nostra in Italy

Source: *Transcrime* 2013

Originated from the ruling classes back in the 19th century, this criminal group also known as “*Mafia*” it is based on a rigid organizational structure and a code of conduct.

At the base of the pyramid there is a family (*cosca*) that has the sovereignty over a territory, usually a town or a neighbourhood, in which it operates. The tip of the pyramid is occupied by the secretary (*cupola*) which coordinates and controls the full activity of the organization and manages the relations with the political and local system.

Even if the groups have been showing gradual signs of crisis, especially after the Maxi Trial in 1992¹ and the terroristic attacks of Capaci and Via D’Amelio², the rigid struc-

¹ The most significant trial ever against the Sicilian Mafia organized by the magistrates Giovanni Falcone and Paolo Borsellino from February 1986 to December 1987 after the arrest of Tommaso Buscetta, a mafioso who chose to turn informant in exchange for protection. After other mafiosi followed the example of Buscetta, Falcone and Borsellino were able to put on trial 475 mafiosi, 338 of which, were convicted by the Supreme Court of Cassation.

ture allowed Cosa Nostra not only to survive but also to extend its entrepreneurial, political and financial branches.

The core activities of this organization include drug trafficking, often financed by the proceeds coming from extortion activities, engaging in public contracts in the construction industry and finally the financial intermediation.

As the other organizations, Cosa Nostra expanded outside Sicily, following waves of emigration in the USA and Canada, and maintaining strong relations with foreign drug cartels.

Organized crime in Apulia – Sacra Corona Unita

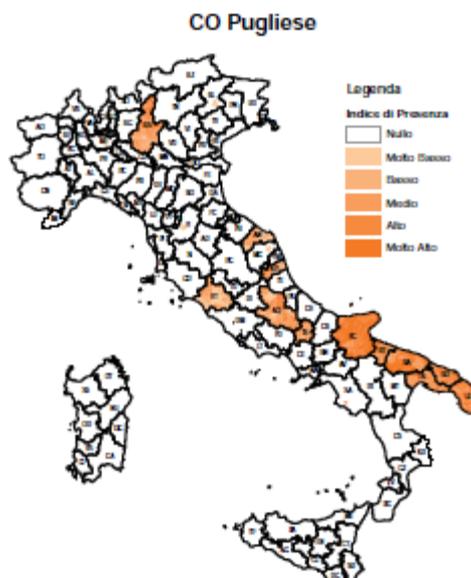


Figure 4 Presence of Sacra Corona Unita in Italy

Source: Transcrime 2013

Known also as the “Fourth Mafia”, this criminal organization has different origins than the previous organizations: it was initially founded in 1981 by a Camorra boss who wanted to expand his operations into the Italian region of Apulia, but a few years later, after his downfall, the organization began operating separately.

² In the Capaci bombing, which took place on 23 May 1992, close to the junction of Capaci, Sicily it was killed magistrate Giovanni Falcone, his wife Francesca Morvillo, and three police escort agents. Following the judgment of the Supreme Court of Cassation confirming the claims of the Maxi Trial (30 January 1992), the Sicilian Mafia decided to start the attacks on political figures. The Via D'Amelio bombing took place in Palermo, Sicily, on 19 July 1992 and killed magistrate Paolo Borsellino and five members of his police escort.

The Sacra Corona Unita has a pyramidal organization composed by three levels starting from Minor Society (*Società Minore*) in which members start out as “*picciotti*” and go through a 40-day trial and arriving to Secret Society (*Società Segreta*). Members reach the upper level by going through baptismal rites.

Originally interested in the region's wine and olive oil industries, the criminal group specialized in smuggling cigarettes, drugs, arms, and people to and from post-Communist countries like Croatia, Albania, and the former Yugoslavia. It is also involved in money laundering, extortion, and political corruption and collects payoffs from other criminal groups for landing rights on the southeast coast of Italy.

It is worth noticing that the above-mentioned organizations, in the recent decades are expanding their businesses in the wealthier, industrialised north of Italy, consolidating their leading role in drug traffic and they are also moving towards other fields such as supermarkets, restaurants and bars, construction, farming and all forms of food production, sport, people trafficking and refuse management. (Carrier, 2017)

As a matter of fact, other Italian organized criminal groups were detected in other regions of Italy such as the Banda della Magliana of Rome, the Mala del Brenta of Veneto, and the Banda della Comasina and the Turatello Crew of Milan.

1.3 Illicit profits for organized crime

The main goals behind organized criminal activity are the pursuit of maximum profit and the consolidation of power. For these reasons, criminal groups move across illicit markets as they move across borders, in search of new opportunities for profit and the activities and *modi operandi* which guarantee the highest return with the lowest risk. (M. Savona, E. Riccardi, 2015)

The main sources of illicit proceeds for organized crime in Italy come from counterfeiting, drug trafficking, human trafficking and environmental crimes.

Counterfeiting

Counterfeiting³ is one of the largest, most lucrative and attractive businesses for organised crime groups due to its low risk and high profit: the intensification of international trade and the delocalization of products have complicated the traceability of goods and secondly, the e-commerce has facilitated the uncontrolled promotion and spread of imitations around the globe. Moreover, this market is characterized by high demand for counterfeit products (clothing, clothing accessories, car parts and food products), and low production and distribution costs.

The entry and the subsequent distribution of counterfeit goods in Italy is made possible by close cooperation between Chinese criminal groups and Italian mafias, among which the Camorra and the ‘Ndrangheta predominate. (Europol, 2011)

The size of the counterfeiting market in Italy has been estimated between 5 and 10 per cent of the turnover obtained by legal companies operating in sectors exposed to counterfeiting risks and the workforce in those sectors. (Calderoni et al., 2014)

The total consumer detriment due to consumer deception by counterfeiters in 2016 amounted to almost 8.4 billion euro by taking into account the effects of imports of counterfeit and pirated products in Italy and those of global trade in Italian IPR-infringing products. (OECD, 2018)

Total lost sales (wholesale and retail)		Total lost sales (Italian IP right owners)		Total lost jobs		Total lost taxes	
EUR 7.9 billion	3.8% of sales	EUR 24 billion	3.2% of sales	88 265 lost jobs	2.1 % of full time equivalent employees	EUR 10.3 billion	0.62% of Italian GDP

Figure 5 Total direct impact of counterfeit and pirated trade in the Italian context, 2016

Source: OECD 2018

Drug trafficking

Italian organized crime groups have been involved in the international drug trade for almost 100 years; over this time, their operations and structures have been transformed by technology, legislation and shifts in politics. (UNODC, 2017)

³ For the purpose of this dissertation, counterfeiting is understood in its broadest sense as “infringement of intellectual property rights of any kind, including trademarks, patents, industrial designs, copyrights and related rights”.

In particular, ‘Ndrangheta and Camorra clans were able to create trafficking routes leading to the territory of Italy by establishing relationships with global organizations.

Indeed, drug trafficking not only promotes and strengthens criminal groups involved, but contributes also to generate an international criminal network that goes beyond national and European boundaries and that manages production, processing, trafficking, brokerage, distribution channels.

Although it is widely acknowledged that the supply of illegal drugs represents a large share of the revenues it is difficult to quantify the value of the illicit drug market; however, the Organised Crime Portfolio’s report in collaboration with Trascrime estimated in 2015 the market value for the main types of drugs in Italy:

- The annual revenues from the heroin market are estimated at between 1.1 and 1.8 billion euro;
- The annual revenues from the cocaine market are estimated at 1.7 billion euro;
- The annual revenues from the cannabis market are estimated at 1.4 billion euro.

Human Trafficking

The trafficking in human beings (THB) is perpetrated for sexual exploitation, forced labour or removal of organs.

Italy is a destination and transit country for women, children, and men trafficked transnationally. They come from Eastern Europe, Africa, South East Asia and South America. Chinese men and women are trafficked to Italy for the purpose of forced labour. Roma children continue to be trafficked for the purposes of sexual exploitation and forced begging. Reportedly, an increasing number of victims are trafficked for labour, mostly in the agricultural sector; foreign exploited in seasonal workers are unregistered and the majority of them enters Italy’s borders illegally; traffickers, in order to evade police detection, move their victims more frequently within different cities. (Office to Monitor and Combat Trafficking in Persons, 2008)

Italian organized crime is only indirectly involved, due to its refusal to perpetrate this crime directly, but they allow foreign criminal gangs to organize sexual exploitation in their regions, often in exchange for other illicit commodities. (Mancuso M., 2014)

The overall THB market provides organized criminal groups with circa 31 billion euro each year. (Santino U., 2015)

Related to the THB is the illegal phenomenon “Migrant smuggling” particularly important given the current European migrant and refugee crisis initiated in 2015; the Europol Interpol report on migrant smuggling networks estimated in 6 billion the yearly turnover⁴. (Europol - Interpol, 2016)

Environmental crimes

Environmental crimes include illegal logging, poaching, the illicit trafficking of a wide range of animals, illegal fishing, illegal mining and the illicit waste management.

There are often synergies between waste management and investments in other sectors such as the construction and mining sector: after sand has been removed, quarries become ideal illicit landfills in which to dump toxic waste. (DNA, 2014)

Legambiente, an Italian association established in 1980 that deals with environmental issues, estimated in its report “Ecomafia⁵ 2019” that the profits from environmental crimes are around 16,6 billion euro; 45 % of the total violations were concentrated in the four regions that are traditionally the most heavily infiltrated by organized crime, with Campania being the most affected by environmental crimes with 14,40 % of the total violations. (Legambiente, 2019)

While maintaining interest in traditional fields of action with respect to illicit trade, organized crime has expanded its presence, in parallel, through the exertion of its influence in the legal economy, creating additional threats to society. (UNICRI, 2016)

In particular, other new illegal activities have begun to play an increasingly central role in their economy such as: fraud in its multiple forms (e.g. MTIC and carousel VAT fraud, excise frauds, plastic frauds, cybercrimes); illegal gambling by managing traditional betting halls and slot machines and VLT; organized property crimes (e.g. cargoes robberies, truck hijackings, organized theft of medicines).

Finally, other “trends” were observed such as:

- The involvement in an illegal activity that can facilitate other criminal activities, for example illegal gambling may create in gamblers the demand for loans, thus

⁴ Turnover was calculated by considering the number of migrants who entered the EU in 2015: approximately 1 million people, who paid an average of USD 3,200 – 6,500 (EUR 3,000-6,000).

⁵ The term “ecomafia” is a neologism coined by Legambiente to describe organized criminal groups which invest in the illegal trafficking and dumping of waste, the unregulated construction sector and excavation but also illegal trafficking of art-work and exotic animals (UNICRI, 2016)

facilitating usury, that lending of funds through illegal channels at a high interest rate to a person or a company usually in economic difficulties; the size of the usury market in Italy was estimated at 15 billion euro by SOS Impresa⁶ (Sos Impresa, 2010);

- New products on the boundary between legal and illegal markets, for example illicit whites cigarettes produced legally in one country and then illegally distributed in others.

1.4 Motivations behind the infiltration in the legal economy

« Italian OCGs today are the only EU economic competitors that suffer the opposite problem of all other entrepreneurs: too much cash money and not enough possibilities of reinvestment. » (Well-known Italian Public Prosecutor – Europol, 2013)

The billions accumulated by the criminal organizations over time combined with the economic crisis, explains the infiltration trend in the legal economy: through sophisticated money laundering schemes and by investing in particular sectors, these criminal groups not only attempt to justify their immense wealth, but represents strong competitors who can afford to operate “at a loss”, creating in the long run a situation of quasi-monopoly that undermines the basic principles of free market. (Europol, 2013)

The infiltration in the legal economy responds to the following different motivation, which may co-exist simultaneously. (Ernesto U. Savona and Michele Riccardi (eds), 2018)

Money laundering

The main reason behind the investment in the licit economy is to launder illicit proceeds. Legitimate businesses provide fronts behind which to hide the criminal identity or the illicit origin of funds, and they allow inflows/outflows of illicit funds to be concealed through cash-based transactions, false invoices or trade-based money laundering (*TBML*) techniques.

The appropriation of legal activities, together with money laundering, produces additional negative effects for the legal economy, such as distortions from its normal func-

⁶ *Italian association founded in 1991 in Palermo on the initiative of a group of merchants to defend their free entrepreneurial initiative, to oppose the racket and resist organized crime*

tioning and the creation of monopolies and oligopolies managed by criminal organizations. (Tosello E. F., 2012)

Chapter 2 will provide a deeper insight on the phenomenon of money laundering and its effects.

Concealing illicit trade

Legal businesses serve as fronts to conceal illicit activities such as trafficking of persons or goods. In particular, companies such as restaurants, bars and clubs are used to hide human trafficking, in its multiple forms, whereas companies operating in transportation, import-export and wholesale trade businesses are used to hide the trafficking of drugs, firearms or counterfeit goods.

Companies are also used to reintegrate stolen products into the legal economy: they issue invoices or transportation or customs bills that are then used to hide the legitimate origin of the merchandise, making it easier to sell them in the legal rather than the underground market.

Making Profit

Criminal organizations invest in the licit economy, not only to cover illicit activities, but also to obtain profits. Nonetheless, the profitability of their firms is related to the connections that the companies have with the criminal organization rather than the prowess of the entrepreneurs; irregular job conditions for workers, irregular fiscal status, the possibility to exploit relations with corrupt politicians are factors that allow these companies to be profitable.

Criminal organizations invest in sectors that allow them to make a good use of these factors and that provide profits in the short term; for example, the residential care homes sector which demand grew with the recent refugee crisis.

Finally, sectors involving public funding, such as public procurement, renewable energy, or European aid funds for under-developed areas, proved to be very profitable for criminal organizations.

Committing Fraud

Legitimate firms are key tools for committing fraud, regardless of the final objective of the infiltration in the legal economy; the combination of low risk and high reward characterizing these activities, and the advent of Information Technology, makes fraud a

preferred domain for organised crime. Fraud may be committed in many forms and with different objectives, among which there are also (Europol, 2017):

- Tax and Excise frauds: by taking advantage of the legislative differences and varying excise tax rates applied by different jurisdictions, these frauds are carried out to avoid excise duties when producing or importing products such as alcohol, cigarettes and mineral oils that are subject to excise duty in the EU; in this way, organized crime generates significant profits selling both genuine and counterfeit excise goods at lower prices than their licit equivalents;
- Value Added Tax frauds: techniques such as Missing Trader Intra-Community (MTIC), takes advantage of the fact that in cross-border transactions within the European Union the payment of the VAT is not due until the goods are sold at their destination; this enables traders to import goods without accounting right away for the VAT, when fraudsters sell the goods, they charge the VAT to buyers without remitting the value to the tax authorities; Carousel frauds, in which goods are imported and sold through a series of companies before being exported again, the exporters of these goods claim and receive the reimbursement of VAT payments that never occurred;
- Document fraud: entails both the production and use of counterfeit documents and the use of genuine documents obtained by means of misrepresentation; fraudulent documents are multi-purpose tools and each document can be used repeatedly to support different criminal activities; the most traded are fraudulent IDs but all types of documents regarding identity, travel and administrative are involved; the expanding of online marketplaces allowed criminals to reach more people and to offer the range of documents they are able to falsify.

Control of territory and social approval

Given the internal organization and the way in which they operate, it is very important for criminal organizations to keep strict control over certain geographic areas. Infiltration of legitimate businesses may also serve this purpose; construction firms, hotels, restaurants and gas stations, transportation companies have a strong territorial specificity and allow the set-up of a wide network.

Furthermore, criminal groups were able to exploit the unemployment problem in the south of Italy by offering jobs in one of their controlled companies or activities. In this way, they were able to build social approval and to influence in both traditionally dominant areas and where they are trying to expand their authority and influence.

Finally, controlling the territory means also connecting with the political and economic elite: by infiltrating in business sectors where the public administration plays a crucial role, such as public works, energy supply, waste management or social services and health care, criminal organizations are able to influence politicians, benefit from their corruptive power and extract high profits.

Cultural or personal reasons

Investing in the legal economy and creating an image of legal entrepreneurs, often helps criminals to clean up their reputation, and to increase their social approval. This driver pushes organized crime to invest illegal profits in the legal economy by offering jobs, wealth and fringe benefits.

MONEY LAUNDERING

2.1 Introduction

Money laundering was defined by the Palermo Convention⁷ as: “The conversion or transfer of property, knowing that such property is the proceeds of crime, for the purpose of concealing or disguising the illicit origin of the property or of helping any person who is involved in the commission of the predicate offence to evade the legal consequences of his or her action”.

Although the way in which money laundering is carried out depends on the criminal organization’s level of expertise, the scale of money laundering activities and the technology applied, the process of laundering money can be divided into three stages:

- Placement: is the movement of the illicit proceeds to the financial system through financial institutions (banks, securities brokers), casinos, shops, currency exchange offices;
- Layering: consists in separating the funds from their illegal source to make it more difficult for law enforcement agencies to detect and uncover the illicit activity; funds can be used to acquire monetary instruments or material assets that are immediately sold;
- Integration: consists in combining the laundered money with the proceeds from the legal activities by using for example front companies, false loans, and false import/export invoice.

⁷ *The United Nations Convention against Transnational Organized Crime (more details on paragraph 4 of this chapter)*

In Italy, money laundering estimates vary widely, ranging from 1.7-12 percent of GDP, with most pointing to the upper end of the range. The main proceeds come from tax and excise evasion (around 75 percent of total proceeds), drug trafficking and usury (around 15 percent of the total); and finally, corruption, fraud, counterfeiting, environmental crime, robbery, smuggling extortion, and illegal gambling (around 10 percent of the total). As previously reported, the last two categories are most closely associated with the activities of organized crime. (IMF, 2016)

The next paragraphs will address most common methods of money laundering, the factors that facilitate the infiltration in the legal economy, and the main anti-money laundering institutions.

2.2 Most common methods

2.2.1 Cash smuggling

The criminal economy is still overwhelmingly cash based. This means that criminals selling some form of illicit product are likely to be paid in cash. The huge amount of cash generated, can cause criminals significant problems in using, storing and disposing of it; despite these problems, cash is perceived to confer some significant benefits such as the anonymity, mostly for small amounts of cash, and the absence of audit trail.

The most common methods used to smuggle cash are:

- Through cash couriers: recruited to transport, either by air, sea or rail transport, criminally derived cash across an international border; they usually conceal cash within their clothing, on their body, in their luggage (often within the structure of the luggage itself) or even concealed internally;
- Concealed within a method of transport: cars, lorries or maritime craft ranging from small pleasure boats to larger vessels such as container ships and ferries can be modified in order to conceal the cash within their structure; the person in charge of the vehicle may be fully aware of the concealed cash and complicit in the smuggling attempt. Alternatively, the driver of a vehicle may genuinely not know that the vehicle he is driving has cash concealed within it;
- In containerized or other forms of cargo: when criminal organizations want to move very large amounts of cash, they often conceal it in cargo that can be containerized or otherwise transported across borders;

- Concealed in mail or post parcels: sometimes small amounts of cash can be concealed within goods sent by regular mail or post parcel services; in this cases, cash is sent in high denomination banknotes giving the limited space;
- Hidden in plain sight: finally, some criminal groups were able to infiltrate large amounts of cash using legitimate financial institutions to transport cash intended for use in regular financial systems, by taking advantage of the limited requirement for information regarding cash shipments in customs declarations, or by falsifying such documentation. (FATF and MENAFATF, 2015)

In order to fight cash smuggling, the European Directive 2015/849 put in place a cash declaration system which requires that at minimum, member states implement a system by which cash movements made by physical persons in excess of 10,000 euros entering or exiting the EU territory are declared to a Competent Authority.

At national level, the “Guardia di Finanza⁸” carried out from January 2018 to June 2019, 24,389 controls on compliance with the rules on cross-border circulation of currency entering and leaving the national territory. 8,000 violations were ascertained with the seizure of 19.6 million euros. (Di Giusto A., 2019)

Furthermore, the European Central Bank decided that, as of 27 January 2019, seventeen of the nineteen National Central Banks in the Euro area will no longer issue 500 euro banknotes. ⁹ (ECB, 2019)

High denomination notes, such as the 500 euro banknotes, are an unsafe means of payment, and facilitate the illegal smuggling of cash simply because criminal organizations can illegally introduce large amounts of cash that take up less space. For example, one million euros weighs 1.6 kg in 500 notes and 10 kg in 100 notes, so 12 thousand pieces, that is 6 million euros, easily fit into a computer bag.

As a matter of fact, the 80% of the 500 notes circulate in well-defined areas of Italy: according to a report by the ICSA Foundation and the Guardia di Finanza, the provinces near the Italian-Swiss border, the province of Forlì (which borders San Marino) and the

⁸ Italian law enforcement agency, under the authority of the Minister of Economy and Finance, responsible for dealing with financial crime and smuggling; it has also evolved into Italy's primary agency for suppressing the illegal drug trade

⁹ The exception is Germany and Austria: for an orderly transition and for logistical reasons, the ECB explained, the German central bank Bundesbank and the Austrian bank the Oesterreichische Nationalbank will continue to issue them up to and including 26 April 2019

Triveneto, are the runways of take-off and landing of the capital from our territory. (Di Giacomo M., 2012)

2.2.2 Trade-based money laundering (TBML)

Trade-based money laundering is the process of disguising the proceeds of crime and moving value through the use of trade transactions in an attempt to legitimise their illicit origin. (FATF and GAFI, 2006) Criminal organizations may try to disguise the nature of the activities they are funding or goods they are shipping, to appear as normal trade transactions. Such schemes leverage the natural flow of goods in exchange for payment, to move value from one location to another without triggering suspicious activity alerts. The basic techniques of trade-based money laundering include:

- over- and under-invoicing of goods and services: consists in the misrepresentation of the price of the good or service in order to transfer additional value between the importer and exporter; by invoicing at a price higher than the good's market value, the exporter is able to receive value from the importer, whereas by invoicing goods at a price below their market price, the exporter is able to transfer value to the importer, as the payment for the good will be lower than the value that the importer receives when the good is sold on the market;¹⁰
- multiple invoicing of goods and services: consists in issuing more than one invoice for the same international trade transaction; launderers, by employing different financial institutions to make the payments, makes it harder for authorities to detect the illicit transaction, and even when that happens there are a number of legitimate explanations such as the amendment of payment terms, corrections to previous payment instructions or the payment of late fees;
- over- and under-shipments of goods and services: alternative to the misrepresentation of the price, consists in overstating or understating the quantity of goods being shipped or services being provided; if no good will be shipped, that is known as

¹⁰ Example of over-invoicing: Company A, a colluding importer in Country X, agrees to purchase 10,000 cell phones for \$200 each from Company B, a colluding exporter in Country Y. The true cost of the cell phones is \$100 each and the retail value of each phone is \$400. Company B exports the phones and invoices Company A for \$2 million, when the true value is only \$1 million. Company B has just received a transfer of excess value of \$1 million that may represent illicit funds obtained by Company A and have now been moved from Country X to Country Y. The trade documents may all be consistent with the contract and actual goods shipped, hence, without knowing the true value of the goods shipped, it is virtually impossible to detect this as TBML in the normal course of the trade transaction.

phantom shipping, the exporter colludes with an importer to ensure that all shipping and customs documents are routinely processed;¹¹

- falsely described goods and services: consists in misrepresenting the quality or type of a good or service, creating obviously a disparity what appears on the shipping and customs documents and what is actually shipped; falsely described services are harder to be detected given the difficulties in assessing their fair market value.

Authorities involved in detecting these illegal activities are customs agencies, financial intelligence units, tax authorities and banking supervisors. They can exchange trade-related information, unfortunately this is frequently restricted to certain circumstances or undertaken on a voluntary rather than mandatory basis.

In order to detect trade-based money laundering activities, authorities use a number of red flags indicators such as discrepancies between the description of the good on the bill of lading and the invoice, discrepancies between the value of the good reported on the invoice and the good's fair market value, when the size of the shipment appears inconsistent with the scale of the exporter or importer's regular business activities or when the good is shipped to/from a jurisdiction designated as "high risk" for money laundering activities. (FATF and GAFI, 2006)

In Italy, the "*Unità di Informazione Finanziaria per l'Italia*" is the financial intelligence unit in charge of preventing money laundering by examining financial flows, acquiring information and receiving reports of suspicious transactions by obliged parties; the FIU carries out the financial analysis, and evaluates the relevance for the purpose of transmission to the investigative bodies and of the collaboration with the judicial authority for the possible development of the action of repression. It belongs to the Bank of Italy which regulates its organization and its operations. (Banca d'Italia, 2019)

The most effective means of analysing and investigating suspect trade-based activity is to have systems in place that monitor reported imports and exports between countries. Consistent with the FATF standards on international cooperation, a number of governments share import and export information in order to detect anomalies in their trade da-

¹¹ Example of over-shipment: Company A, a colluding exporter sells 1 million widgets to Company B, a colluding foreign importer at a price of \$2 each, but ships 1.5 million widgets. Company B pays Company A for the goods by sending a wire transfer for \$2 million. Company B then sells the widgets on the open market for \$3 million and deposits the extra \$1 million (the difference between the invoiced quantity and the actual quantity) into a bank account to be disbursed according to Company A's instructions.

ta. Examples of international cooperation are the Customs Cooperation and Mutual Assistance Agreements signed by the EU and Korea, Canada, Hong Kong, US, India, China, Japan. (EC, 2019)

2.2.3 Ownership of businesses

Another common method used to launder money is the direct or indirect ownership of businesses. The first one involves the ownership by a member of the criminal organization which directly participates in the criminal organization; in the indirect ownership, criminals are no longer involved in the decision-making process of the company but they make use of figureheads and strawmen as shareholders; this strategy is increasing among criminal organizations because it reduces the risk of seizure or confiscation. (E. Savona, M. Riccardi (eds), 2015) In order to maintain control over the company, figureheads are often selected from relatives; alternatively, they can also select financial consultants or legal entrepreneurs because of their privileged relations with the financial, administrative and political system.

In an effort to avoid the identification of the beneficial owner, that is the ones that enjoy the benefits of the ownership and that take the decisions, criminal organizations make use of complex ownership schemes and cross-shareholdings involving a large number of companies, the sale of business units, the merger of diverse companies, as well as the modification of the business's legal status or name.

The firms owned by criminal organizations can be distinguished as front businesses or shell companies.

Front businesses usually belong to a cash-intensive sector such as restaurants, bars and involves a large number of transactions such as catering activities. These legitimate businesses allow criminal organizations to blend their illicit proceeds with the legitimate earnings. By reporting a higher generated income, the firm has to pay additional taxes or alternatively, it can adapt costs, by issuing false invoices, in order to reduce the profit at the initial level.

One of the first examples dates back to the 1920s, when the American Gangster Al Capone, in the intent to legitimately explain the earnings from illegal gambling, prostitution and bootlegged liquor sale, started to acquire laundromats, a cash intensive business that allowed easily to launder dirty money; over time, laundromats became even

too much profitable, which attracted the attention of the authorities, costing Al Capone a conviction for tax evasion in 1931.

Shell companies are legal companies created exclusively to provide coverage for illegal profits movements without legitimate business activities. Usually this fictitious companies are established in countries known for banking secrecy laws or for the weak application of money laundering laws. The dirty money is then distributed within these companies through two methods. With the loan method, criminal organizations constitute an offshore company and deposit the illicit earnings in it, which subsequently returns the funds to the launderer; since the ownership of offshore companies is very difficult to establish, it will seem that a company lends money to the criminal, while in reality he is lending it to himself. The second one is the double invoicing method which consists in moving the funds across borders by issuing false invoices, over- and under-invoicing of goods/services, or over- and under-shipments of goods/services. (Venezia L., 2019)

More detailed information on the types of criminal companies will be given in the third chapter of this dissertation.

2.2.4 Methods in the era of technology

Besides cash smuggling, alternative methods of transferring money involve the banking system. Criminal organization are able to put in place several legal operations that can hide illegal activities. Smaller banks, which usually don't have the resources to implement surveillance systems and track these operations, are the most vulnerable in this sense.

The cheapest and fastest method are bank transfers: in order to hide the illicit origin of the money, it often happens that funds pass through various banks and different states before being transferred to a bank account. Before transferring these funds, criminal organizations resort to small deposits, instead of a single large deposit, differentiating payments between individuals, individuals and entrepreneurs or professionals. This technique is known as "smurfing".

A more complex strategy involves IVTS (Informal Value Transfer Systems) which allow transfers, usually from one state to another one, that do not involve banking institutions. Some examples, depending on the geographic area where they were observed, are *hawala*, *black market peso exchange*, and *fei chien*.

Hawala, which means trust from hindi and it is widespread in south-east Asia, refers to credit transfers based on the absolute secrecy and the maximum personal trust between the "banker" and the customer, in order to obviate the lack of any written registration. In its simplest form, the Hawala transaction consists of transfer of money between two individuals through a third person: for example, a subject in a certain country can transfer money to a recipient who is abroad, without the need for any documentation and without banking authorities of both countries coming to know operation. The system operates through stores (mostly jewellers or money changers, but also travel agencies, shipping companies) controlled by Asian people, often belonging to criminal organizations. The customer, who it can be, for example, a drug dealer, a professional or a trader Chinese or Indian manager who wants to bring money abroad, deposits the sum which intends to export of his country, and the equivalent will be delivered at a similar branch of a foreign country, upon presentation of a "receipt", called *chit*. (La Gala C. G., 2000)

The Hawala method was used in Italy by some Chinese entrepreneurs to transfer funds accumulated through the illicit sales of textiles. The anti-money laundering operation "Cian Lu" (river of money) conducted in May 2010 by the Guardia di Finanza, led to the arrest of 24 people and to the closure of the money-transfer agencies for criminal association, money laundering and other crimes, involving 85 Chinese companies located mainly in Tuscany.

The Black-Market Peso Exchange was initially used by Columbian drug cartels to transfer money earned in the US to the country of origin. The illicit proceeds from the sale of drugs in the US are sold by traffickers, through this underground banking system, to some Columbian businessmen, who deposit them online. With the money, the businessmen buy goods directly from the US, and once the goods are received, they export them to Columbia, where they are sold directly to the citizens, who pay in pesos. The proceeds of this latest sale end up in the hands of drug traffickers, who can now justify the money as coming from a normal business.

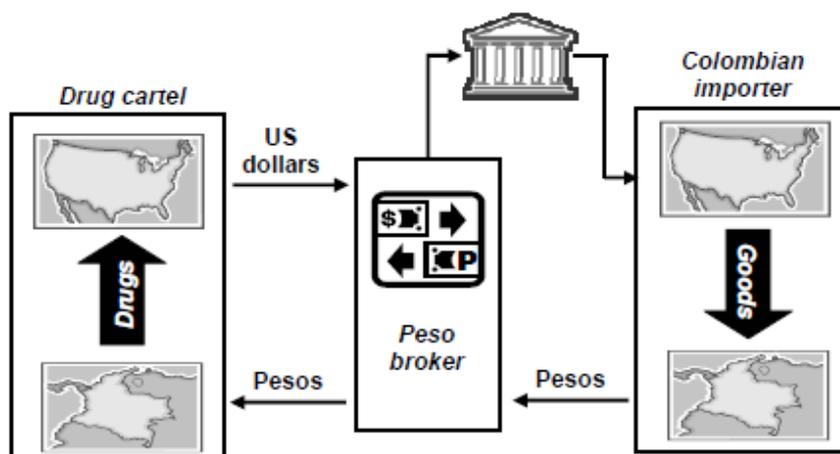


Figure 6 Mechanics of a Black-Market Peso Exchange Transaction

Source: FATF-GAFI (2006)

Until a few years ago, Interpol was able to interrupt this mechanism by identifying the banks where the American dollars were deposited and seize them.

Recently, new methods of payment such online payments systems, online games, messaging apps, make it very difficult to track money movements, identify people involved and seize the money.

Cryptocurrencies, prepaid cards and online payments are generally less well-regulated than traditional payment methods and along with underground banking systems, formed as alternative banking platforms and operating outside the normal banking channels to transfer money internationally, allow criminal organizations to avoid the fees and regulations of conventional banks. In particular, cryptocurrency offers another avenue for money launderers to clean their money by easily transferring millions of dollars in bitcoin across international borders.

Messaging apps, such as WhatsApp and WeChat, and their payment functions (respectively PayPal and WeChat Pay) allow people to pay with a tap or a photo snap. Even if all the transactions are digital, which makes tracking and monitoring for illegal activity much easier, the volume and number of accounts are enormous which makes it impossible, at least for small organizations to be detected by authorities through pattern recognition systems that highlight questionable activities and accounts.

Criminal organizations can launder money by exploiting “virtual currencies” in online games which can be traded for real cash. They typically create different accounts in

multiple jurisdictions, purchase in-game credits using dirty money charged in multiple pre-paid cards, then reach exchange platforms between the players and sell inexperienced kids the credits in exchange for real money, in order to get the money back at their disposal, but this time from a completely legitimate transaction. These online games are played on servers that are accessed by people from anywhere in the world, which allows exchanges with players and platforms in countries with very little control, without anyone being identified. (Cervelli A., 2018)

2.2.5 Other methods

Casinos and other gambling venues

Casinos, horse races and lotteries are means of legalizing illegal proceeds by purchasing tickets with dirty money and then win real money. In casinos, for examples, criminals can either pretend to play by purchasing chips, spending some time in the casino without active gambling, and then exchange the chips for money, which is presented as a winning, otherwise they can place actual bets on all outcomes in a high probability game, e.g. betting both on red and black in at roulette.

Operators are obliged to exercise customer due diligence which includes identifying checks and reporting suspicious betting activity, as well as suspicious transactions and transactions above a defined threshold. In addition, there are detailed guidelines about what constitutes suspicious activity, in order to make analysis and detection of suspicious patterns much easier.

Insurance policies

Criminals use insurance companies for money laundering primarily by buying insurance and then submitting claims to retrieve their funds. Sometimes, they take advantage of insurance products structured as investments, such as variable annuities and certain life insurances. By overfunding and moving money in and out of policies, the launderers can establish a stream of transfers or checks, at a relatively low cost of early-withdrawal penalties.

Again, operators have to implement and enforce customer due diligence, obtaining identification for all new accounts, monitoring those accounts for suspicious activity, but also revisiting the transaction records of existing customers periodically.

Purchase of goods

Criminals acquire different types of goods such as real estate or any durable goods that allows money laundering. Usually the object is purchased for cash and resold for clean money, through bank checks. In most cases, purchases can involve luxury goods such as cars, jewellery, fine art and residential and commercial properties.

Real estate transactions, which are extremely attractive for recyclers, require operators, such as real estate agents or notaries, to be willing to overlook the fact that the recycler wants to pay cash for an expensive good, or uses, for example, a strange mortgage from Switzerland or a check from a bank whose office is registered in a tax haven.

Also, gold is popular because it is a universally accepted store of value, provides anonymity and it is easily changed in form.

Money laundering syndicates

Criminal organizations increasingly use money laundering syndicates acting as illegal service providers to launder money. In exchange for a commission of between 5% and 8%, these syndicates offer complex laundering techniques and carry out the laundering operations on behalf of other criminal organizations. (Europol, 2017)

2.3 Geographic and sector vulnerabilities in Italy

According to the literature, the likelihood that money laundering offences will occur is determined by two dimensions: the “threats” and the “vulnerabilities”. Threats are all the people or activities that produce illicit proceeds and/or that may need to launder money whereas vulnerabilities are all the circumstances or factors which attract, facilitate or allows threats to happen; these factors were classified by the FATF¹² in more than sixty categories and span from political factors (such as “level of political commitment to fighting crime”) to environmental factors (such as “the use and re-use of resources”); (M. Riccardi, R. Milani & D. Camerini, 2019)

According to the MORE project, Italy has scores in line with the EU average for most of these factors but in some geographic areas the values are far above the EU benchmark and appear to be particularly vulnerable to infiltration. (E. Savona and M. Riccardi (eds), 2018). The following factors are critical for the Italian territory.

¹² *The Financial Action Task Force (more details on paragraph 4 of this chapter)*

Cash intensity and cash limit

In Italy, the cash ratio, which measures the percentage of cash transactions out of the total number of transactions, is around 55%, in line with the EU average. However, in the southern regions and the islands, the cash ratio goes up to 90% (provinces of Crotona and Vibo Valentia).

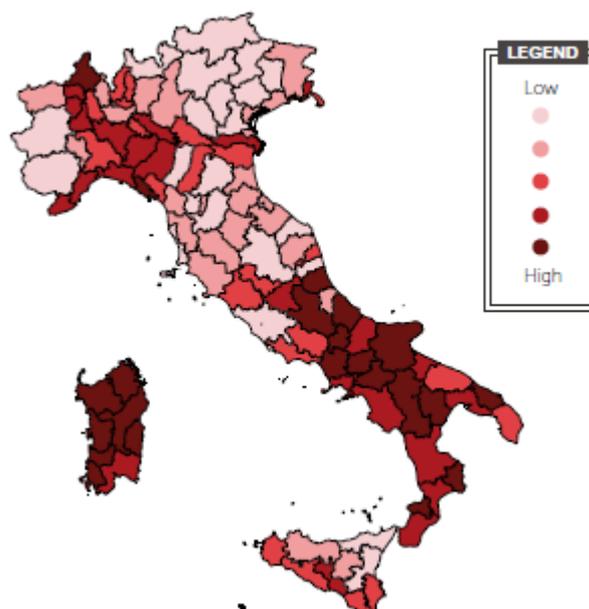


Figure 7 Cash ratio of Italian provinces

Source: MORE project

The cash limit changed during the last decades going from 12.499,99 euro in 2008 to 999,99 euro in 2011. Since January 2016, the “Stability Law” (from the Italian “*Legge di Stabilità*”) established the cash limit up to 3.000 euro and also required companies, retailers and professional to accept not only debit cards or prepaid cards, but also credit cards, regardless of the amount received as payment; moreover, all the operators were required to install Points of Sale.

Shadow economy and irregular labour

Despite the central role played by organized crime, the main source of illicit proceeds is tax evasion; the underground economy is fuelled by income misreporting of taxpayers

and the high volume of illegal labour. According to the Confindustria Study Center¹³, total tax and contribution evasion amounted to 122 billion euro in 2015, about 7,5% of GDP whereas the level of irregular labour was estimated at 17,2% of the Gross Value Added.

In order to fight tax evasion, since January 2019, the 2018 Budget Law (from the Italian “*Legge di Bilancio 2018*”) introduced the obligation of electronic invoicing both in commercial relations between private VAT payers (companies and professionals with VAT number) and to final consumers. As a result, tax evasion proceeds are now estimated at an amount slightly lower, 107 billion euro.

Corruption

The strong presence of organized crime, the frequent use of cash and the large underground economy and public interventions are the most important way to generate a perfect environment for corruption to grow.

According to the 2018 Corruption Perceptions Index¹⁴ puts Italy in the 53rd place out of 180 countries, with a score of 52 out of 100; the Italian CPI is above the world average (43), but still significantly lower than the European average, which is equal to 66.

Despite advancements and the establishment of anti-corruption agencies, Italy has proven to be unable to address and mitigate substantially its corruption problem.

The link between organized crime and corruption is evident in the public procurement domain: by corrupting public administration representatives, criminal organization enter sectors such as public works, waste management, local transport, health care and social care.

Financial secrecy, business ownership opacity and complexity

Although Italy presents a good level of cooperation in the exchange of tax and financial-related pieces of information (its 2018 Financial Secrecy Index¹⁵ was 49 out of 100), it

¹³ Confindustria is the national industrial organization representing companies producing goods and/or services in Italy. Its Study Centre (CSC) analyses economic trends and elaborates economic policy proposals to encourage greater GDP growth, employment, and the reduction of the ratio between public debt and GDP

¹⁴ Calculated by Transparency International, the index ranks 180 countries and territories by their perceived levels of public sector corruption according to experts and businesspeople, using a scale of 0 to 100, where 0 is highly corrupt and 100 is very clean

is, however, one of European Member States with the highest volume of business ownership links with shareholders from secrecy jurisdictions (7th out of the EU MSs).

Moreover, Italy presents a high volume of shareholders from non-cooperative tax jurisdictions. That is caused by the proximity of some provinces such as Trieste, Alto Adige, Imperia with secrecy jurisdictions. (E. Savona and M. Riccardi (eds), 2018)

2.4 Anti-money laundering legislation (AML) and international conventions

Given the numerous damages caused to the legal economy, anti-money laundering legislation and the international cooperation are essential in fighting this phenomenon.

Anti-money laundering laws and regulations target criminal activities including market manipulation, trade in illegal goods, corruption of public funds, and tax evasion, as well as the methods that are used to conceal these crimes and the money derived from them.

In each country, the absence of AML or the fact that AML is not effective, can even increase corruption and reduce the country's attractiveness towards foreign investors.

In this chapter, will be illustrated the main international convention against money laundering, the FATF Recommendations, the 5-th AML European Directive and finally the effectiveness of the Italian legislation.

2.4.1 Palermo Convention

The United Nations Convention against Transnational Organized Crime (also known as Palermo Convention) is the main international instrument in the fight against transnational organized crime. It was signed by the Member States (from 2017, it has 190 parties) during a Political Conference held in Palermo and entered into force on 29th of September 2003.

The purpose of the Convention, according to Art. 2, is “*to promote cooperation to prevent and combat transnational organized crime more effectively*”; to honour this commitment, governments engage in:

- Criminalizing Organized Crime;

¹⁵ Launched on January 30, 2018 by the Tax Justice Network (independent international network) the index ranks jurisdictions according to their secrecy and the scale of their offshore financial activities using some key financial secrecy indicators, which measure secrecy in different dimensions, such as ownership registration, legal entity transparency, integrity of tax and financial regulation and international standards and cooperation

- Combating Money-Laundering;
- Extradition of Criminals;
- Witness Protection;
- Prosecution;
- Prevention;
- Develop Protocol to Combat Transnational Organized Crime.

The Convention is further supplemented by three Protocols, which target specific areas and manifestations of organized crime.

The Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children is meant to facilitate convergence in national approaches, with regard to the establishment of domestic offences that would support an efficient international cooperation in investigating and prosecuting trafficking in persons.

The Protocol against the Smuggling of Migrants by Land, Sea and Air aims at preventing and combating the smuggling of migrants, as well as promoting cooperation among States parties, while protecting the rights of smuggled migrants and preventing the worst forms of their exploitation which often characterize the smuggling process.

The Protocol against the Illicit Manufacturing of and Trafficking in Firearms, their Parts and Components and Ammunition promotes, facilitates and strengthens cooperation among States Parties in order to prevent, combat and eradicate the illicit manufacturing of and trafficking in firearms.

2.4.2 FATF Recommendations

The Financial Action Task Force (FATF) is an independent inter-governmental body that develops and promotes policies to protect the global financial system against money laundering, terrorist financing and the financing of proliferation of weapons of mass destruction.

The FATF Recommendations set out a comprehensive and consistent framework of measures which countries should implement in order to combat money laundering and terrorist financing. Given the fact that countries have diverse legal, administrative and operational frameworks and different financial systems, they cannot take identical measures to counter these threats.

The original FATF Forty Recommendations were drawn up in 1990 as an initiative to combat the misuse of financial systems by persons laundering drug money but were revised several times to reflect evolving money laundering trends and techniques, and to broaden their scope well beyond drug-money laundering.

The FATF Recommendations set out the essential measures that countries take in order to identify risks, develop policies, apply preventive measures for the financial sectors, establish responsibilities for the competent authorities and other institutional measures, enhance the transparency of beneficial ownership information of legal persons, and finally facilitate international cooperation. (FATF, 2012-2019)

2.4.3 The EU Anti-money laundering Directives

The first AML Directive of the European Union was adopted in 1990, in order to prevent the misuse of the financial system for the purpose of money laundering, by providing that obliged entities shall apply customer due diligence requirements when entering into a business relationship (such as identify and verify the identity of clients, monitor transactions and report suspicious transactions). This legislation has been constantly revised in order to mitigate risks relating to money laundering and terrorist financing. In 2015, the EU adopted a regulatory framework including:

- The Directive 2015/849 on preventing the use of the financial system for money laundering or terrorist financing known as the 4th Anti-Money Laundering Directive;
- The Regulation 2015/847 on information on the payer accompanying transfers of funds.

Both instruments take into account the FATF Recommendations and promote the highest standards for anti-money laundering.

Among other innovations, the Directive introduced the “*whistleblowing systems*” which requires the obliged subjects (among others: accounting experts, labour consultants, notaries and lawyers) to adopt internal procedures for reporting employees or persons that potentially or actually violate the anti-money laundering provisions. Furthermore, these procedures must guarantee, among other things, the protection of the privacy of the subjects who decide to report offenses as well as of the alleged perpetrators of the violation. (Whistleblowing, 2016)

The 5th Anti-Money Laundering Directive, which amends the 4th Anti-Money Laundering Directive was published in the Official Journal of the European Union on 19 June 2018. The Member States must transpose this Directive by 10 January 2020.

The amendments introduce substantial improvement to better equip the European States in preventing the misuse of the financial system; in particular, they:

- enhance transparency by setting up publicly available registers for companies, trusts and other legal arrangements;
- enhance the powers of EU Financial Intelligence Units, and provide them with access to broad information for the carrying out of their tasks;
- limit the anonymity related to virtual currencies and wallet providers, but also for pre-paid cards;
- broaden the criteria for the assessment of high-risk third countries and improve the safeguards for financial transactions to and from such countries;
- set up central bank account registries or retrieval systems in all Member States;
- Improve the cooperation and enhance the information between anti-money laundering supervisors between them and between them and the ECB. (European Commission, 2019)

2.4.4 Level of effectiveness of Italy's AML system

In an effort to provide assistance to the countries that face the most this social scourge, the IMF has studied and evaluated the practises implemented by these countries to fight money laundering.

In 2016, the IMF analysed the Italy's AML in force on January 2015 by measuring the level of compliance with the FATF Recommendations, as universally recognised standards for anti-money laundering.

According to the report published in February 2016, Italy has made significant efforts to bolster the mechanisms to prevent and punish corruption by establishing the National Anti-Corruption Authority (ANAC), and introducing new offenses in the penal code and increasing the penalties (Law n. 190 dated 6 November 2012 known as "*Legge Severino*"), and finally introducing provisions regarding crimes against Public Administration, mafia-type associations and false accounting (Law n. 69 dated 29 May 2015).

The channel most vulnerable to money laundering appears to be the banking sector due to their dominance of the financial sector, the range of products they offer, the transaction volumes they handle, and the interconnectedness of the banking sector with the international financial system. Also, lawyers, notaries, and accountants are in some cases involved in creating and managing structures that lack transparency and are used to launder money.

In terms of effectiveness, Italy has a strong legal and institutional framework for combating money laundering activities. Measures are particularly strong regarding the assessment of risks, law enforcement, confiscation, targeted financial sanctions, preventive measures and the supervision of financial institutions, and transparency of legal persons and arrangements, but less so regarding sanctions for ML and non-compliance, and preventive measures for designated non-financial businesses and professions.

CRIMINAL COMPANIES

3.1 Introduction

The term “criminal company” refers to any type of productive, commercial or financial activity that is either:

- Legally attributable to a member or any other subject related to a criminal organization;
- Normally having an unlawful object;
- Financed with capital of illicit origin, deriving from the criminal activities of the organization;
- Carried out with illegal methods or, in any case, with methods not falling within the market economy.

Italian criminal companies concentrate not only in the traditional territories of presence of criminal organizations but also in other regions of Italy that belong to the Centre and the North. They favour sectors characterized by low foreign competition, low technological level, and high intensity of labour and, high involvement of public resources. Finally, they are structured in medium-small companies predominating the form of limited companies.

In the next paragraphs will be examined more deeply the characteristics of criminal companies, the sectors in which they operate, and the so called “red flags” which are indicators from the Balance Sheet and the Income Statement that could signal the presence of a criminal company.

3.2 Sectors of infiltration

Bars, restaurants and hotels

Bars, cafés, pizzerias, clubs, kebab shops and fast food outlets are often used by criminal organization as fronts to launder money which is facilitated by the fact that they are cash-intensive businesses. They are also used to conceal illicit activities, such as sexual or labour exploitation or the retail sale of illicit drugs.

Construction

The construction industry is one of the sectors in which the infiltration by organized crime is higher, also because the potential for corruption and intimidation is very high. As noted by some authors, infiltration in the construction industry is more alarming than in other sectors, as it requires a higher-level capacity to connect with the local political, business and social community. (Transcrime, 2013)

Gambling/Gaming

At the same level of attractiveness of the construction sector, there is the gambling/gaming industry including casinos, bingo games, videolottery, slot machines and online gaming websites. This cash-intensive industry is experiencing a growth in demand and, thanks to the IT developments, criminals are able to set up servers in secrecy jurisdictions that make it difficult for authorities to trace online transactions.

Infiltrated gambling firms may also infiltrated in the sports industry because match fixing can multiply the illegal earnings by criminal groups.

Wholesale trade

Wholesale trade businesses, more than retail firms, suffer from organized crime infiltration, especially related to concealing illicit trafficking of drugs, firearms and counterfeit and stolen goods. In particular:

- Wholesale trade in food products is used to conceal drug trafficking by hiding drugs in food truck or shipments;
- Wholesale trade in flowers, also related to drugs that can be easily concealed among flowers, allows criminal organization to exploit the business routes to/from the Netherlands, the biggest international flower market;

- Wholesale trade in medicines: pharmaceutical wholesalers are infiltrated to re-introduce stolen medicines (mostly anti-cancer or rheumatic) on the legal market as well as to traffic sport-doping or other illicit drugs.
- Wholesale trade in oil products is infiltrated in order to smuggle stolen or illicit oil and commit excise fraud; criminal organizations often exploit the same routes and channels used for trafficking firearms and drugs and smuggling migrants. In Italy, oil traffic has been subject to a huge growth after the end of the Colonel Gaddafi's regime in Libya and the other civil wars in North Africa and the Middle East. (Oddo G., 2017)

Transportation and logistics

Logistics firms, shipping companies and truck rental businesses are used by criminal organizations to transport drugs, arms and stolen goods or to smuggle migrants; organized crime infiltrated both small firms that often employ irregular labour, and bigger firms that use cargoes and vessels and are often established in tax heaven.

Waste management and Renewable energy industries

Criminal groups infiltrate waste management firms in many ways: they may offer other entrepreneurs illegal disposal of their waste residuals or they may benefit from public contracts obtained illicitly from local authorities.

For example, in the MU case, one of the 24 case studies of organized crime infiltration considered in the MORE project, a criminal group was suspected of laundering illicit proceeds from Cosa Nostra in environmental firms managing a landfill in Romania, one of the biggest in Europe. (Ernesto U. Savona and Michele Riccardi (eds), 2018)

Private security

Finally, by infiltrating the private security industry, organizations can use their criminal reputation and sell it to the legal market as organizations able to keep order using violence; as a matter of fact, the more powerful the organization is, the more its services are trusted.

3.3 Ownership red flags

Type of legal form

According to the MORE project, that analysed 1,944 Italian firms that were confiscated from Italian mafia-type organized crime groups between 1984 and 2012, the most frequent legal form of criminal companies are private limited companies (s.r.l. - società a responsabilità limitata) and partnerships (s.s., s.n.c. and s.a.s. - società di persone); whereas, the number of sole traders (imprese individuali) or listed companies is limited in respect with the first group.

Criminals may prefer these forms because they are easy and cheap to incorporate, and their administration does not incur high costs. Moreover, by using figureheads, they can avoid being formally connected to these firms.

The above-mentioned project also found that different criminal organizations have different preferences for legal forms; for example, Cosa Nostra prefers limited companies whereas Camorra and 'Ndrangheta have a higher number of partnerships and sole traders suggesting the preference for direct control of the firms, which is also in line with the way these two criminal organizations are organized. (E. Savona and M. Riccardi (eds), 2018)

Type of owners

The use of figureheads as company shareholders is a strategy commonly used by organized crime to conceal their criminal activities and hide the identity of the ultimate beneficial owners. Persons frequently used as figureheads include members of the family, legal entrepreneurs, and professionals; also, legal companies are used as corporate shareholders to conceal the beneficial ownership of infiltrated businesses.

Focusing on the gender of the business owners, the data shows a relevant phenomenon: although 90% of the convicted for mafia-type association were male, only 65% of the owners were men and 33% were woman which is higher if compared with the percentage of Italian female owned firms equal to 22%. The data presented suggest that females may be used as figureheads: using a female family member allows to maintain the control of the firm, conceal the beneficial owners and also raise less suspicions. As a matter of fact, in 20% of the firms in the MORE project, the owners of the criminal companies were relatives having the same surname of the convicts.

Worth mentioning is the fact that in Italy, married women retain their maiden names which makes it harder to connect the criminal company to the convicts.

Finally, more complex schemes were detected involving pyramidal structures, frequent transformations such as registered address, name, business sector, transfers of business lines or business branches, dissolution of a company and transfer of its business activities to a newly incorporated company. (Savona E. & Berlusconi G. (eds.), 2015)

3.4 Financial red flags

In Italy, many studies tried to detect infiltration red flags by carrying out financial analyses in a more systematic way. The first attempt dates back to 2013 (Transcrime, 2013)¹⁶ but leads to different conclusions with respect to more recent studies such as Fabrizi M., Malaspina P., Parbonetti A., (2017)¹⁷ and the MORE project (2018)¹⁸.

The financial red-flags regard the level of indebtedness, the level of liquidity and the performance.

Level of indebtedness

The studies that tried to study the financial structure of criminal companies lead to different results.

According to the Transcrime project, criminal companies have a lower level of financial debt than the average legal firms in the same sector; this is due to the fact that the injection of resources can take place through more opaque forms, in order to hide the illicit origin of the proceeds; a few examples are:

- Building up complex schemes of empty companies that make appear the injection of money as debts to associated companies or parent companies;
- Registering the injection of money as other debts;
- Masking the injection in the form of commercial debts (or payables), by exploiting colluding suppliers or establishing fictitious companies as suppliers of services.

¹⁶ The "Progetto PON Sicurezza 2007-2013" involved the analysis of 1.742 confiscated companies from 1983 to April 2012 using the information provided by the ANBSC, the Italian national agency for the administration and destination of seized assets and confiscated from organized crime

¹⁷ The study "Caratteristiche e modalità di gestione delle aziende criminali" involves 643 criminal firms located in Central and Northern Italy, which have been targeted by a police operation (and by subsequent judicial procedures) during the decade 2004-2015

¹⁸ The Final report of the More Project involved a sample composed by 3.447 confiscated firms from Italian mafia-type organized crime in more than 50 cases from 1984 to 2012; among these, only 405 were still available in the national register of the Chamber of Commerce and had financial reports available

The hypothesis that takes into account the consent enjoyed by criminal organization among the local political, administrative and financial systems, which could allow the access to a wide range of private or public funding such as bank credit or public subsidies at regional and national levels, did not change the initial results.

The level of commercial debt, instead, was found to be on average higher due to fictitious or actual debts: the ability to collude and intimidate suppliers, allows criminal companies to pressure them and delay the payments.

In 2017, Fabrizi M, Malaspina P. & Parbonetti A. found that criminal companies have a higher level of indebtedness with respect to non-criminal companies (that have the same dimensions and belong to the same sectors); in particular, the median value of the ratio between total debts and assets is 89% for criminal companies while the ratio for non-criminal companies is equal to 82%.

Finally, The MORE project confirmed the conclusions to which Transcrime also arrived, that is, a low level of financial debt, because infiltrated firms do not need external financing because they launder illicit funds and a high level of payables and receivables because they may reallocate money in their corporate network.

Assets and liquidity

The way resources are allocated between current/non-current assets or cash equivalents depends, according to Transcrime (2013), on the function that the company absolves in the strategy of the criminal organization. In particular, three types of criminal companies were identified:

- Production companies: they exercise economic activities and invest in fixed assets such as buildings, plants, machinery and other means of production; therefore, from an accounting point of view, they are similar to legal companies;
- Front businesses: they do not carry out any production activity because their sole purpose is to launder money; therefore, their resources are mainly held in cash equivalents, and only to a residual extent in fixed assets;
- Paper mill companies: from the Italian “*cartiere*”, their main function is to produce paper, through the issue of false invoices; they are also used as formally legitimate entities that own buildings, vehicles and other financial assets, in order to hide the

beneficial owner of these assets; in this case therefore the resources of the company will be held both in cash and fixed assets.

Overall, giving the money laundering objective, criminal companies' resources are held in cash equivalents, and in other cases, in short – term receivables (mainly from associated companies / subsidiaries / parent companies, other receivables) that could also mask payments to affiliates of the criminal organization or compliant companies.

The MORE project confirmed the high level of current assets because fixed assets are also prone to confiscation but, contrary to Transcrime, the study supports the idea that criminal companies have low levels of cash equivalents because they do not need high liquidity on paper, due to the large amount of illicit cash and again the risk of confiscation of bank accounts.

Profitability

Following Transcrime, also the Italian researchers identified three types of criminal companies, each one corresponding to a different management method which leads to a different level of profitability, in particular:

- Supporting companies: from Italian “*aziende di supporto*”, even if these companies produce and sell goods or services, they not only present revenues equal to zero but also the incidence of the costs for services out of all operating costs is over 50%; the presence of particularly high non-operating revenues, which still fails to cover the losses, was also considered as a warning signal;
- Paper mill companies: the characteristic of these companies is the fact that they report operating revenues and operating costs for similar amounts; as a matter of fact, the paper mill companies analysed in the sample present a correlation of revenues and costs equal to more than 99%; worthy of note is also the high volatility of revenues with respect to the other criminal companies;
- Star companies: these companies present high profitability achieving a return on equity of almost 30%; they appear as successful companies and can be used to create relations with the institutional framework and facilitate corruption.

The classifications of criminal companies, whether based on the way resources are allocated between current/non-current assets or on their profitability, are not rigid: a com-

pany controlled by a criminal organization can serve multiple objectives, making the identification of the red flags even harder.

Moreover, the analysis of the red flags associated with the income statement and the balance sheet must be supported also by a more qualitative analysis including reports by judicial administrators and dossiers.

3.5 Effects of the legal economy

Companies controlled by organized crime have several advantages if compared with the legal ones. (Savona E. & Berlusconi G. (eds.), 2015)

Firstly, organized crime discourages competition, creating in some cases criminal monopolies on certain economic sectors, by applying the so called “mafia method” from the Italian “*metodo mafioso*” which implies between others, intimidation and corruption.

Secondly, criminal companies support lower labour costs due to tax evasion and non-payment of social security contributions, insurance and overtime work.

Finally, the high availability of financial resources originating from illegal activities carried out by the criminal organizations. In some cases, the illicit resources are used to lend money to legal companies in economic difficulties achieving to establish control over their management or to completely own them.

One of the most important cases related to this phenomenon involves the Perego Family, belonging to the ‘Ndrangheta, who infiltrated the construction sector ahead of the 2015 World Expo in Milan. The Perego Company was able to exert monopoly control over the entire management structure and affiliated supply chain, stretching across the region of Lombardy, through the use of heavy-handed intimidation techniques, the manipulation of public procurement offers, and profit sharing with politicians, influential individuals, and other pivotal stakeholders. (UNICRI, 2016)

The main effects on the Italian economy caused by organized crime are the loss of Gross Domestic Product, the removal of resources for production, the decrease of foreign direct investment, the decrease in productivity, and finally the difficult access to credit, all these modifying the functioning of a market economy.

EMPIRICAL ANALYSIS

4.1 Objective of the empirical analysis

Starting from the theoretical concepts previously highlighted, this chapter will illustrate an empirical research involving a particular sample of criminal companies with the aim of understanding whether it is possible to identify some of the red-flags indicators.

In particular, the following results are expected:

- Higher level of indebtedness;
- Higher level of current assets/cash equivalents;

The level of indebtedness will be measured by the total debt ratio calculated as

$$(Total\ Assets - Equity) / Total\ Assets$$

The ratio will show the general level of indebtedness of the company, that is, the proportion of the assets that are financed with debt.

Furthermore, the level of current assets will be measured by

$$Cash\ and\ Cash\ equivalents / Total\ Assets$$

The ratio will show the percentage of total assets hold in cash or similar instead of invested in non-current assets, such as land, buildings, machineries.

Furthermore, the analysis will focus only on the criminal sample and will try to identify the three management methods (supporting companies, paper mill companies, and star companies)

Finally, will be performed an analysis on the profitability of the total sample. In particular, if the majority of the criminal sample is composed by supporting and paper mill companies, the expected result is a lower profitability of the criminal sample with re-

spect to the legal sample; if the majority of the criminal sample is composed by star companies, the expected result is a higher profitability of the criminal sample.

The profitability will be measured by the two ratios, the ROA and the EBITDA return on assets ratio.

The Return on Assets will measure the return on capital invested and it is calculated as:

$$EBIT \text{ (Earnings before Interests and Taxes)} / \text{Total Assets}$$

The ratio of EBITDA and assets measures the amount of Earnings before Interests, Taxes, Depreciation or Amortization, generated in comparison to the Total Assets, allowing comparison between companies with varying capital and debt structures. It is calculated as:

$$(\text{Net Profit} + \text{Interest} + \text{Tax} + \text{Depreciation or Amortization}) / \text{Total Assets}$$

4.2 Samples description

4.2.1 Criminal companies' sample

The criminal sample was built up starting from four anti-mafia operations conducted by the Italian authorities which led to the conviction of many criminals for mafia association under the *Article 416 bis of the Italian Penal Code* which defines any association of the mafia type when “those who belong to it make use of the intimidating force of the association bond and the condition of subjection that derives from it to commit crimes, to control economic activities, concessions, authorizations, contracts and public services, to make unfair profits, or to prevent or hinder the free exercise of the vote. The anti-mafia operations are:

- Buena Ventura: started in 2015, the operation was aimed at the disarticulation of a transnational partnership dedicated to the trafficking of cocaine from South America to the region of Calabria; at the end of 2019, the Court of Appeal of Reggio Calabria ordered 11 sentences for a total of 104 years of imprisonment and involved criminal also from other cities such as Milan, Naples, Bologna and Pescara;
- Pesci: conducted in the region of Lombardy, in 2017 led to the conviction of 10 major exponents of a clan belonging to the ‘Ndrangheta that operated in Mantua. The first degree of judgment convicted the boss Nicolino Grande Arcari to 28 years in prison;

- **Cumbertazione:** conducted in the region of Calabria, the operation discovered a monopoly of the Bagalà Group in the public procurement sector; in 2017, 25 subjects were arrested for criminal offenses of mafia-type crime, fraud in public supplies, corruption of public administration and 44 companies were preventively seized for a total value of 224 million euros;
- **Stammer:** started at the beginning of 2017, the operation is the result of a long investigative activity conducted on the South America-Calabria axis by the Guardia di Finanza of Catanzaro with the cooperation of the English National Crime agency (NCA) and the Colombian police; in 2019, the Court of Appeal of Catanzaro sentenced 34 criminals.

After the identification of each convict, for a total number of 70 convicts, it was used the database “Telemaco” of the Italian Chamber of Commerce to search for all the companies in which the sentenced criminals were managers or owners.

Each company was than classified in a database according to the operation, the criminal, the type of company and the years in which the criminal was in control for a total number of 250 companies.

After that, using also the database “AIDA” all the available financial statement data was collected in a database indicating also the city/province/region in which it operates and finally the sector identified by the ATECO code.

The final database it is composed by 88 criminal companies due to the fact that were inevitably excluded sole companies, partnerships and all the other companies for which financial data was unavailable.

The sample of criminal companies it is composed by companies working mostly in the construction sector, with a total number of 40 companies out of 88. Even if there are sectors more affected such as real estate and wholesale and retail trade, criminal activity infiltrates more or less every sectors of the legal economy.

The majority of the criminal companies selected are located in the Region of Calabria; This figure is not considered relevant given that 3 operations were conducted in this region. Worthy of note are the relevant number of criminal companies present in Rome and the fact that there also several criminal companies located in the Northern regions of Italy.

Criminal companies and money laundering

SECTOR	ATECO CODE	DESCRIPTION	N°
C	16.1	Cutting and planing of wood	1
	31.09.09	Manufacture of other furniture	1
D	35.2	Gas Production; Distribution of fuels	1
	35.11	Electricity production	4
F	41.1	Development of real estate projects	1
	41.2	Construction of residential and non-residential buildings	26
	42.11	Construction of roads and highways	8
	42.91	Construction of hydraulic works	1
	42.99.09	Other construction activities of other civil engineering works	1
	43.0	Specialized construction work	1
	43.39.01	Non-specialized construction work	1
	43.9.09	Other building and finishing works	1
G	46.37.01	Wholesale of coffee	1
	46.49.40	Wholesale of sporting goods	1
	46.73.2	Wholesale of construction materials	1
	46.9	Non-specialized wholesale trade	1
	47.11.40	Minimarkets and other non-specialized food shops	2
	47.3	Retail trade of fuel for vehicles in specialized exercises	1
	47.59.1	Retail of pieces of furniture for the house	1
47.59.20	Retail of utensils for the house, of cristallerie and tableware	1	
H	49.39.01	Management of funiculars, ski lifts and chair lifts if not part of the urban or suburban transit systems	1
	49.41.00	Road freight transport	1
	52.23	Air transport service activities	1
I	55.1	Hotels and similar establishments	3
	56.10.11	Catering	1
	56.29.10	Canteens	1
K	64.99.6	Other financial intermediation	1
L	68.1	Purchase and sale of real estate carried out on own assets	5
	68.2	Rental and management of owned or leased properties	1
	68.20.01	Real estate leasing of own or leased assets (rent)	3
	68.31	Real estate brokerage	1
M	70.22.09	Business consultancy, administrative-management consultancy and business planning activities	1
	71.1	Architecture, engineering and other technical studies	3
	71.10	Architecture, engineering and other technical studies	1
	71.12	Activities of engineering and other technical studies	1
	71.12.2	Integrated engineering design services	2
	74.90.93	Other technical consultancy activities	1
N	81.3	Landscape care and maintenance	1
	82.92.1	Packaging of foodstuffs	1
Q	86.1	Hospital services	1
R	93.29.3	Game rooms and billiards	1
TOT.			88

Table 1: Sectors of the criminal companies

REGION	PROVINCE	N°	
CALABRIA	REGGIO CALABRIA	20	40
	COSENZA	12	
	CATANZARO	4	
	VIBO VALENTIA	4	
LAZIO	ROMA	29	29
SICILIA	AGRIGENTO	6	7
	MESSINA	1	
LOMBARDIA	MANTOVA	4	5
	MILANO	1	
PIEMONTE	TORINO	2	2
EMILIA ROMAGNA	REGGIO EMILIA	1	1
CAMPANIA	NAPOLI	1	1
MOLISE	CAMPOBASSO	1	1
ABRUZZO	PESCARA	1	1
MARCHE	ANCONA	1	1
		TOT.	88

Table 2: Geographic area of the criminal companies

4.2.2 Legal companies' sample

The criminal companies were confronted with a sample of legal companies. For each criminal company, the legal companies were selected from the AIDA database according to following criteria:

- Same industry sector, identified by the ATECO code;
- Same territory, identified by the province in which they operate;
- Similar dimensions, identified by the values of Total Assets.

In particular, for the third criteria, it was calculated the absolute difference between the Total Assets of each criminal company and the Total Assets of the legal companies with the same ATECO code and province; for each criminal company, five legal companies with the lower absolute difference of the values were selected. The sample of legal companies it is composed by 423 companies; this is due to the fact that for some companies, such as Aeroporto di Scalea – Srl (Province: Cosenza (CS) and ATECO code – 52.23 - Air transport and related activities) it was found only one company that satisfied the first two criteria. For the company Lorica Ski Srl (Province: Cosenza (CS) and ATECO code 49.39.01 - Management of funiculars, ski lifts and chair lifts if not part of the urban or suburban transit systems) no similar company was

found, which means that the sample of criminal companies has to be made up by 87 companies.

Therefore, the empirical analysis it was applied to a sample consisting of 510 companies, 87 of which are criminal companies and 423 non-criminal companies.

4.3 Analysis

4.3.1 Level of indebtedness

The first analysis was performed on the level of indebtedness. In order to perform the analysis on this variable, the observations with negative equity were not considered and furthermore, in order to reduce the effect of outliers, it was applied a 90% winsorization¹⁹. In this way the distribution of the variable is less influenced by outliers, namely less variable.

	1st Quartile	Average	Median	3rd Quartile	Std. Deviation
Level of indebtedness	56,1554698	164,5259493	83,61604424	96,40481006	1163,748419
Level of indebtedness (90% winsorization)	49,97955915	67,89245629	77,54623639	91,41234087	29,71429906

Table 3: Statistics on the level of indebtedness on total sample

By calculating the average level of indebtedness on the winsorized sample distinguishing between criminal and legal companies, the value of the criminal companies is slightly higher than the value of the legal companies.

	Sample	Obs.	Average	Median	Std. dev.
Level of Indebtedness	Not Criminal	369	67,53580	76,98978	29,82699
	Criminal	77	69,60164	82,15219	29,49760

Table 4: Level of indebtedness on criminal and legal samples

This result is in line with the expected result that is the criminal companies are generally more indebted than the legal companies. In order to verify if this difference is statistically significant it was performed a t-test.

¹⁹ The transformation of statistics by limiting extreme values in the statistical data to reduce the effect of possibly spurious outliers. A 90% winsorization consists in set all outliers below the 5th percentile equal to the value of the 5th percentile and set all outliers above the 95th percentile equal to the value of the 95th percentile.

	Sample	Obs.	Average	Std. Err.
Level of Indebtedness	Not Criminal	369	67,53579747	1,552730982
	Criminal	77	69,60163943	3,361563877
t	=		-0,554	
Pr(T > t)	=		0,580	

Table 5: T-test on the level of indebtedness

As the p-value is equal to 0.580, the null hypothesis cannot be rejected which means that the results obtained in the first analysis on the variable are not statistically significant. Therefore, it is not possible to conclude that the level of indebtedness of the criminal companies is generally higher than the level of the legal companies.

4.3.2 Level of liquidity

After analysing the level of indebtedness, the analysis focused on the level of liquidity. The total sample was also winsorized at 90% in order to reduce the effects of the outliers on the distribution of the sample.

	1st Quartile	Average	Median	3rd Quartile	Std. Deviation
Level of liquidity	0,500967075	12,75202897	4,063426471	15,4956855	21,18329122
Level of liquidity (90% winsorization)	0,500967075	11,7832615	4,063426471	15,4956855	17,93885084

Table 6: Statistics on the level of liquidity on total sample

By calculating the average level of the liquidity on the winsorized sample distinguishing between criminal and legal companies, the value of the criminal companies is more or less the same as the value of the legal companies.

	Sample	Obs.	Average	Median	Std. dev.
Level of Liquidity	Not Criminal	423	11,87627	4,40080	17,86309
	Criminal	87	11,33103	2,61276	18,50259

Table 7: Level of liquidity on the criminal/legal samples

This result is not in line with what expected, that is a higher liquidity for the criminal companies that prefer to hold cash instead of invest the money in non-current assets. Even if the sample present similar values, a t-test was performed.

	Sample	Obs.	Average	Std. Err.
Level of Liquidity	Not Criminal	423	11,87627	0,86853
	Criminal	87	11,33102	1,98369
t	=		0,258	
Pr(T > t)	=		0,797	

Table 8: T-test on the level of liquidity

As expected, the p-value of the variable is higher than 0.05, therefore, it is not possible to reject the null hypothesis at the 5% level which means that the results on the variable obtained in the first analysis are not statistically significant.

4.3.3 Analysis on the criminal companies

The following analysis will try to verify if the criminal sample can be divided among the three categories of companies, each one corresponding to a different method of management.

Firstly, the sample was divided in two parts: the criminal companies with revenues equal to zero and the criminal companies with positive revenues. From the total sample of 87 criminal companies, 29 companies (equal to the 33% of the criminal sample) have revenues equal to zero, whereas, 58 companies (equal to 67% of the criminal sample) have positive revenues. This distinction follows the hypothesis that supporting companies have revenues equal to zero, whereas, paper mill and star companies have positive revenues.

Supporting companies usually have a high incidence of the costs for services out of all operating costs; in order to verify that in the sample, it was calculated the average values of the incidence of the costs for services of the supporting companies and of the companies with positive revenues.

	Sample	Obs.	Average	Median	Std. dev.
Incidence of costs for services	Supporting	29	62,63484	44,07895	37,72834
	Positive Revenues	58	34,47408	28,86137	25,11630

Table 9: Incidence of costs for services on supporting/positive revenues companies

As expected, both the average and median values are higher for the supporting companies with respect with the other criminal companies. In order to verify if this difference is statistically significant it was performed a t-test.

	Sample	Obs.	Average	Std. Err.
Incidence of costs for services	Supporting	29	62,63484	7,39914
	Positive Revenues	58	34,47408	3,29793
t	=		-2,019	
Pr(T > t)	=		0,047	

Table 10: T-test on the incidence of costs for services

The differences regarding the incidence of costs for services on the operative costs between supporting companies and the other criminal companies are significant, as the p-value is equal to 0,047. Therefore, it is possible to reject the null hypothesis with a 5% significance level and conclude that supporting companies, on average have a higher incidence of costs for services than the other criminal companies.

Supporting companies, having revenues equal to zero, are of course expected to present a lower profitability with respect to criminal companies with positive revenues.

	Sample	Obs.	Average	Median	Std. dev.
ROA	Supporting	29	-2,61417	-0,57850	6,09282
	Positive Revenues	58	0,26428	1,12300	3,67858

Table 11: ROA on supporting/positive revenues companies' samples

	Sample	Obs.	Average	Std. Err.
ROA	Supporting	29	-2,61417	0,88873
	Positive Revenues	58	0,26428	0,75089
t	=		2,121	
Pr(T > t)	=		0,038	

Table 12: T-test on ROA for supporting/positive revenues companies' samples

As expected, supporting companies have a significant lower profitability than other criminal companies with positive revenues.

Finally, another characteristic of the supporting companies is the high level of liquidity. In particular, 3 out of 29 supporting companies (equal to 10, 34%) have a liquidity level that is above the 70% whereas, no criminal company with positive revenues presents such ratio.

Summarizing the results, supporting companies present themselves are companies with zero revenues, high incidence of costs for services out of total operating costs, lower levels of profitability and finally really high levels of liquidity. All these features lead to think that these companies do not pursue the objective to generate profits through the production activity but their main goal is to support the needs of the criminal organization by acquiring services and providing financial resources demanded by the criminal organization, hence the high incidence of costs for services and the level of liquidity.

The analysis focused then on the criminal companies with positive revenues; the aim is to identify the companies having the characteristics of paper mill companies and the ones having the characteristics of the star companies.

The main characteristic of the paper mill companies is the high correlation between operating revenues and operating costs; therefore, the paper mill companies were identified with the ones presenting a correlation between operating revenues and operating costs equal to 99%.

The fact that paper mill companies present such correlation suggests that their role is not do generate profits but to launder money generated from the illegal activities. Operating revenues and costs are probably the result of false invoices covering illegal operations and justifying the availability of financial resources, as also stated by the Italian researchers.

In the sample with companies with positive revenues, 18 out of 58 companies presented such ratio, equal to the 20% of the considered sample. The remaining companies are considered to belong to the group of the star companies.

Star companies, as already said, generally appear as successful companies with high profitability and lower level of indebtedness.

	Sample	Obs.	Average	Median	Std. dev.
Profitability	Paper Mills	18	6,90838	-2,24006	53,19794
	Stars	40	8,63771	5,50465	21,84914

Table 13: Profitability for paper mill/star companies

As expected, both the average and the median, present higher values. In order to verify if this difference is statistically significant it was performed a t-test.

	Sample	Obs.	Average	Std. Err.
Profitability	Paper Mills	18	6,9084	12,53887
	Stars	40	8,6377	3,45465
t	=		0,177	
Pr(T > t)	=		0,861	

Table 14: T-test on profitability for paper mill/star companies

As the p-value is equal to 0.861, the null hypothesis cannot be rejected which means that the results obtained in the first analysis on the variable are not statistically significant. Therefore, it is not possible to conclude that star companies generally present higher level of profitability than paper mill companies.

The other variable considered to characterize the star companies is the lower level of indebtedness.

	Sample	Obs.	Average	Median	Std. dev.
Level of indebtedness	Paper Mills	18	88,00469	91,11668	50,60635
	Stars	40	81,19667	88,35564	20,44394

Table 15: Level of indebtedness for paper mill/star companies

Also, with this variable, the hypothesis is confirmed, star companies present for both the average and the median lower values with respect with the paper mills companies. A t-test also was performed.

	Sample	Obs.	Average	Std. Err.
Level of indebtedness	Paper Mills	18	88,00467	11,92803
	Stars	40	81,19667	3,23247
t	=		-0,734	
Pr(T > t)	=		0,466	

Table 16: T-test on level of indebtedness for paper mill/star companies

Also, for this variable, the difference between paper mill companies and star companies are not statistically significant. Therefore, it is not possible to conclude that the level of indebtedness of the first group of companies is generally higher than the level of indebtedness of the second one.

4.3.4 Profitability

The analysis on the criminal companies leads to some considerations on the level of profitability of criminal companies compared to non-criminal ones.

Since the majority of the sample is made up of supporting companies with revenues equal to zero and there are no substantial differences in the level of profitability between the various groups, it is expected that the level of profitability will be lower in the criminal group when compared with the legal sample.

The profitability was measured by two variables: the ROA and the EBITDA on Total Assets ratio. The sample were cleaned by outliers that is the observations that presented ratios without meaning from an economic point of view.

	Sample	Obs.	Average	Median	Std. dev.
ROA	Not Criminal	352	1,5331	0,86000	5,92035
	Criminal	71	-0,7087	0,00000	5,54269

Table 17: ROA on criminal/non-criminal samples

As expected, criminal companies have lower levels of ROA with respect to non-criminal companies; the average ROA is 1, 5331 for not-criminal companies whereas the average ROA is - 0, 7087 for criminal companies. A t-test was performed to see if this difference was statistically significant.

	Sample	Obs.	Average	Std. Err.
ROA	Not Criminal	352	1,5331	0,31556
	Criminal	71	-0,7087	0,65780
t	=		2,941	
Pr(T > t)	=		0,003	

Table 18: T-test on ROA for criminal/non-criminal samples

According to the t-test performed on ROA, the difference highlighted between the two samples is significant, as the p-value is equal to 0,003. Therefore, it is possible to reject the null hypothesis at the 5% level and conclude that criminal companies, on average, present lower levels of ROA than comparable non-criminal companies.

Focusing on the EBITDA on Total Assets ratio similar result are expected.

	Sample	Obs.	Average	Median	Std. dev.
EBITDA on Total Assets	Not Criminal	352	3,19978	1,96489	6,54130
	Criminal	71	1,82730	0,01114	6,54237

Table 19: EBITDA on Total Assets on criminal/non-criminal samples

Analysing the average and the median of the samples, can be observed that also with variable of profitability, criminal companies present lower values than non-criminal companies.

	Sample	Obs.	Average	Std. Err.
EBITDA on Total Assets	Not Criminal	352	3,19978	0,34572
	Criminal	71	1,82730	0,77103
t	=		1,624	
Pr(T > t)	=		0,105	

Table 20: T-test on EBITDA on Total Assets for criminal/non-criminal samples

Performing a t-test on the variable, a p-value equal to 0,105 is obtained. Therefore, it is not possible to reject the null hypothesis neither at 5% nor even at 10% level. Again, is not possible to say that the difference between the criminal and the non-criminal samples is significant.

Summarizing the results obtained from the t-tests, it can be affirmed that:

- Criminal companies did not prove to have a significant higher level of indebtedness if compared with non-criminal companies;
- Criminal companies did not prove to have a significant higher level of liquidity when compared with non-criminal companies;

- Supporting criminal companies did prove to have a significant higher incidence of the costs for services out of the operating costs if compared with the other criminal companies presenting positive revenues;
- Star criminal companies did not prove to have a significant higher profitability when compared with paper mill companies,
- Star criminal companies did not prove to have a significant lower level of indebtedness when compared with paper mill companies;
- Criminal companies did prove to have a significant lower level of ROA when compared to non-criminal companies; a result justified by also by the previous t-test;
- Finally, criminal companies did not prove to have a significant lower level of EBITDA on Total Assets ratio when compared to non-criminal companies.

4.3.5 OLS Regression

The results obtained from the t-tests take into consideration the relation between only two variables, the Criminal/Non-Criminal variable and each one of the abovementioned dependent variables. The t-tests may give useful information on the correlation between the variables, but they are not enough to draw a conclusion on the effect of the independent variable on the dependent one.

In order to quantify the effect of the independent variable on the dependent one is it necessary to create a regression model.

In the model the independent variable is the Criminal/Non-Criminal variable and the dependent variable is the winsorized ROA, which is the only variable that presented a significant difference in the t-test. The model will measure the effect caused to the ROA when a company is whether criminal or non-criminal.

	B	Std. Err.	t	P-value
(Costante)	1,533	0,312	4,909	0,000
Dummy Criminal	-2,242	0,762	-2,941	0,003
Adjusted R-squared	=	0,018		

Table 21: Regression on winsorized ROA

The regression with a p-value equal to 0,003 resulted significant. The first coefficient 1,533 is the value of the dependent variable ROA when the independent variable Crimi-

nal/Non-Criminal is equal to zero that is when the company is Non-Criminal. The second one, -2, 2242 is the value reached by the ROA when the independent dummy is equal to one that is when the company is Criminal.

The model confirms what already affirmed: criminal companies have a lower level of profitability, expressed in this case the ROA ratio with respect to comparable non-criminal companies.

Unfortunately, the model presents a quite low R-squared, which is equal to 0,018, that means that the model is able to justify only the 1, 8% of the variance of the dependent variable.

The result obtained in the first regression can be influenced by other factors which were not included; it is necessary then to develop a model that takes into account this factors that can have an impact on the values taken either by the dependent variable or the independent variables.

In particular, three types of factors were considered:

- The geographic area;
- The different economic activity;
- The size of the companies.

The variables that take into account the geographic area in which each company operates are three dummies which take into account if the company is the North of Italy or not, in the Centre of Italy or not and finally the South of Italy or not. The geographic area can influence both the dependent variable and the independent variable. Almost half of the criminal companies in the sample are located in the South of Italy, which is known for having lower level of profitability with respect to companies located in the Northern regions.

The effect on the ROA of the different economic activity in which each company operates is controlled by nine different dummies, one for each division of the ATECO classification. For example, the *DummyAteco1* takes a value of 1 if the company belongs to that division otherwise it takes a value of 0. These variables of control are necessary because each sector has a different level of profitability.

Finally, the size of the companies is controlled by the logarithm of their total assets, giving the high variability of the total assets of the companies in the sample. The size is

expected to influence the profitability but it is arguable the sense in which it affects it. There are several theoretical approaches that demonstrate how bigger dimensions necessarily leads to greater profitability, through economies of scale, effects of experience, first mover advantages and externalities of network. However, some empirical research show that there is no such thing as a substantial, universal and positive relationship.

The second regression is performed on the winsorized ROA by taking in consideration as independent variables the Criminal/Non-Criminal dummy and all the controls for the geographic area, the economic sector and the dimensions.

	B	Std. Err.	t	p-value
(Costante)	-3,876	2,126	-1,823	0,069
Dummy Criminal	-2,235	0,754	-2,963	0,003
Dummy Centro	-0,890	0,648	-1,372	0,171
Dummy Nord	0,031	1,016	0,031	0,975
DummyAteco1	-2,470	2,631	-0,939	0,348
DummyAteco3	-1,694	1,347	-1,257	0,209
DummyAteco5	-0,641	1,182	-0,542	0,588
DummyAteco6	-0,852	0,825	-1,032	0,303
DummyAteco7	-0,914	0,992	-0,921	0,357
DummyAteco8	-3,778	1,544	-2,446	0,015
DummyAteco9	-1,389	2,410	-0,576	0,565
Natural logarithm of Total Assets	0,481	0,162	2,971	0,003
Adjusted R-squared	=	0,041		

Table 22: Multivariate regression on winsorized ROA

In the model, three controls were eliminated by the model because they were linearly dependent on the others (perfect collinearity), which means that the information contained therein is actually already present in the data set through the other variables. Therefore, the elimination of this variable does not cause any loss of information.

The results do not change much with respect to the first regression: the model is statistically significant with a p-value equal to 0,003.

The value reached by the ROA variable when all the independent variables are equal to zero is slightly lower, and equal to -3,876 which means, that considering all the controls

the effect on the dependent variable of being a criminal company is higher than in the first model.

Also, in this case, the adjusted R-squared is low, which means that the model is able to explain only the 4,10 % of the variance of the dependent variable.

4.4 Final considerations

The purpose of the research illustrated in this chapter is to explore whether criminal companies present specific characteristics with regard to some financial indicator when compared with comparable non-criminal companies.

The analysis focused on the level of indebtedness, the level of liquidity and the level of profitability.

The first two variables although presented some differences between the two samples; the differences did not prove to be statistically significant.

The level of profitability was measured by two variables: the EBITDA on Total Assets ratio and the ROA ratio. Again, the variables presented different values for the criminal sample and for the non-criminal sample. Only the ROA ratio proved to be a statistically significant variable.

The expected result from the regression was that the value of ROA would decrease when the company was characterized as a criminal company.

The first regression having as independent variable the dummy criminal/non-criminal confirmed the expected result, which proved to be statistically significant. The flaw of the model regards the adjusted R-squared, which is particularly low.

The second regression having as independent variable the dummy criminal/non-criminal and a series of control variables for geographic area, sector of the economic activity and the dimensions, also confirmed the expected result, which proved to be statistically significant. The flaw of the model again is the low adjusted R-squared.

The fact that all the variables considered did not prove significant and that the model presents low values of r-squared might have been influenced by the composition of the two samples. In particular the criminal companies is composed by the companies in which the criminals convicted for mafia association had a leading role. Important to be noticed is the fact that the sentences were not final and some trials are still ongoing so some criminal and therefore some companies can be added or removed from the sample. Furthermore, the companies considered as criminals have not been confiscated therefore

even if connected in some way to a person convicted of mafia association, they may not have relationships or serve the purposes of organized crime.

CONCLUSIONS

Organized crime is a scourge that has plagued society for centuries different from the other forms of criminal behaviour. It is characterized by violence, corruption, ongoing criminal activity, and the precedence of the group over any single member.

The oldest and most powerful criminal organizations operating in Italy include: Cosa Nostra based in the region Sicily, 'Ndrangheta based in Calabria, Camorra based in Campania and finally Sacra Corona Unita based in Apulia.

These organizations in the last decades moved from their original territories and they expanded their businesses in the wealthier, industrialised north of Italy, consolidating their leading role in drug traffic and they are also moving towards other fields such as supermarkets, restaurants and bars, construction, farming and all forms of food production, sport, people trafficking and refuse management.

The main goals behind organized criminal activity are the pursuit of maximum profit and the consolidation of power. For these reasons, criminal groups move across illicit markets as they move across borders, in search of new opportunities for profit and the activities and modi operandi which guarantee the highest return with the lowest risk.

The main sources of illicit proceeds for organized crime in Italy come from counterfeiting, drug trafficking, human trafficking and environmental crimes.

The billions accumulated by the criminal organizations over time combined with the economic crisis, explains the infiltration trend in the legal economy: through sophisticated money laundering schemes and by investing in particular sectors, these criminal groups not only attempt to justify their immense wealth, but represents strong competi-

tors who can afford to operate “at a loss”, creating in the long run a situation of quasi-monopoly that undermines the basic principles of free market.

Legitimate businesses provide fronts behind which to hide the criminal identity or the illicit origin of funds, and they allow inflows/outflows of illicit funds to be concealed through cash-based transactions, false invoices or trade-based money laundering (TBML) techniques.

The conversion or transfer of property, knowing that such property is the proceeds of crime, for the purpose of concealing or disguising the illicit origin of the property, known is known as money laundering.

The way in which money laundering is carried out depends on the criminal organization’s level of expertise, the scale of money laundering activities and the technology applied. The most common methods are Cash smuggling, Trade-based money laundering (TBML), Ownership of businesses and new methods that include IVTS, cryptocurrencies, prepaid cards and finally Messaging apps, such as WhatsApp and WeChat, and their payment functions.

In Italy, money laundering schemes are facilitated by some vulnerabilities, such as the high cash intensity in transactions, the widespread shadow economy and irregular labour, the corruption among private people and also the public administration.

During the years many were the Anti-money laundering laws and regulations targeting criminal activities including market manipulation, trade in illegal goods, corruption of public funds, and tax evasion, as well as the methods that are used to conceal these crimes and the money derived from them.

The first convention against money laundering is known as the Palermo Convention which is the main international instrument in the fight against transnational organized crime.

The Financial Action Task Force (FATF) is instead an independent inter-governmental body that develops and promotes policies to protect the global financial system against money laundering, terrorist financing and the financing of proliferation of weapons of mass destruction. They set out a comprehensive and consistent framework of measures which countries should implement in order to combat money laundering.

At European level the anti-money laundering regulatory framework includes The Directive 2015/849 on preventing the use of the financial system for money laundering or terrorist financing known as the 4th Anti-Money Laundering Directive and The Regulation 2015/847 on information on the payer accompanying transfers of funds.

In terms of effectiveness, Italy has a strong legal and institutional framework for combating money laundering activities. Measures are particularly strong regarding the assessment of risks, law enforcement, confiscation, targeted financial sanctions, preventive measures and the supervision of financial institutions, and transparency of legal persons and arrangements, but less so regarding sanctions for ML and non-compliance, and preventive measures for designated non-financial businesses and professions.

Italian criminal companies concentrate not only in the traditional territories of presence of criminal organizations but also in other regions of Italy that belong to the Centre and the North. They favour sectors characterized by low foreign competition, low technological level, and high intensity of labour and, high involvement of public resources such as bars, restaurants and hotels, construction, gambling/gaming, transportation and logistics, and finally private security.

The most frequent legal form of criminal companies are private limited companies and partnerships. Organized crime prefers these forms because they are easy and cheap to incorporate, and their administration does not incur high costs. Moreover, by using figureheads, such as members of the family, legal entrepreneurs, and professionals, they can avoid being formally connected to these firms.

Many studies tried to detect red flags indicators of organized crime infiltration by carrying out financial analyses in a more systematic way. The first attempt dates back to 2013 but leads to different conclusions with respect to more recent studies.

The financial red-flags regard the level of indebtedness, the level of liquidity and the performance.

It is important to identify the criminal companies because they have a huge impact on the legal economy. As a matter of fact, companies controlled by organized crime have several advantages if compared with the legal ones. Firstly, organized crime discourages competition, creating in some cases criminal monopolies on certain economic sectors,

by applying the so-called mafia method. Secondly, criminal companies support lower labour costs due to tax evasion and non-payment of social security contributions, insurance and overtime work. Finally, the high availability of financial resources originating from illegal activities carried out by the criminal organizations. In some cases, the illicit resources are used to lend money to legal companies in economic difficulties achieving to establish control over their management or to completely own them.

The main effects on the Italian economy caused by organized crime are the loss of Gross Domestic Product, the removal of resources for production, the decrease of foreign direct investment, the decrease in productivity, and finally the difficult access to credit, all these modifying the functioning of a market economy.

The empirical analysis illustrated in the last chapter was aimed at verifying if criminal companies present specific characteristics with regard to some financial indicator when compared with comparable non-criminal companies.

The analysis focused on the level of indebtedness, the level of liquidity and the level of profitability. The majority of the variables did not prove to be statistically significant apart for the ROA variable measuring the profitability.

The expected result from the regression was that the value of ROA would decrease when the company was characterized as a criminal company.

The regressions having as independent variable the dummy criminal/non-criminal and a series of control variables for geographic area, sector of the economic activity and the dimensions, confirmed the expected result.

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