
NEBOT Paper 1

**Beneficial owners of European companies
(and related risks)**

Network of Experts on Beneficial Ownership Transparency, NEBOT



Beneficial owners of European companies (and related risks)

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Abstract

The aim of this paper is to improve the empirical analysis of financial crime risks related to the ownership of European companies. It does so by (a) reviewing the ownership risk factors and anomaly indicators suggested by the relevant regulations and literature; and (b) applying a sample of these indicators to a selected sector and region in Europe.

With respect to the latter, the research reported in this paper analysed the ownership anomalies of 4,499 companies which owned 504,975 real estate properties in Paris. The results showed that 234,724 properties had owners with an anomalously complex ownership structure; 4,268 had ownership links with entities registered in AML/CFT blacklisted/greylisted countries and 4,892 in other secrecy jurisdictions; 16,822 had owners linked to trusts and other opaque legal vehicles; 3,707 were owned by Politically Exposed Persons (PEPs) or their family members/close associates; and 740 were owned by individuals targeted by enforcement measures for financial crimes. The boroughs (*arrondissements*) with the highest prevalence of real estate properties owned by legal persons with ownership anomalies were 1-Louvre, 7-Palais-Bourbon, 8-Elysée and 9-Opéra.

The paper confirms the utility of accessing company and real estate registers in order to carry out scientific research in this domain and understand how risks are distributed across regions, sectors and assets.

Introduction

This paper has been written within the framework of the CSABOT – Civil Society Advancing Beneficial Ownership Transparency project, and it is one of the deliverables produced by [NEBOT, the Network of Experts on Beneficial Ownership Transparency](#).

The aim of this paper is to **improve knowledge about the beneficial owners (henceforth BOs) and the ownership structures** of European companies as well as the related **money laundering and financial crime risks**.

In particular, the paper has two objectives:

- First, to review the **risk factors and anomaly indicators related to BO and ownership structures** suggested by previous studies and regulations in the anti-money laundering (AML) and anti-financial crime domain;
- Second, to **apply these risk indicators in an innovative manner** in order to show how they can enhance understanding of how risks are distributed across sectors and regions in Europe.

The paper is structured in accordance with these two objectives. In particular:

- **Section 1** conducts a review of the risk and anomaly indicators related

to BO and ownership structures as suggested by previous studies and regulations;

- **Section 2** discusses the results of an analysis involving the application of these risk indicators to a specific business sector (real estate) in a specific European region (Paris);
- **Section 3** draws future research and policy implications stemming from the analysis presented in the previous sections.

Section 1. Anomalies and risk factors related to BO and ownership structures

The ownership of European companies

Until recently, empirical analysis of *who the owners of European companies are* was limited to various studies, published especially in the early 2000s, in the corporate governance research field. The general aim of these studies was to test and discuss the implications of principal-agent theory and to understand the relationship between type of ownership/control (e.g. family-owned, private equity-owned, etc.) and company performance (for a review, see Dyck and Zingales 2004; Faccio and Lang 2002). Most of these studies focused on companies listed on stock exchanges, for which the amount of information concerning their ownership is much greater than for unlisted companies.

In recent years, the number of empirical studies on company ownership has increased. This is partly due to the greater quantity and better quality of the data accessible through business registers and business information providers, which introduced bulk data and datafeed services

during the 2010s – also as a result of developments in company law and the AML regime (Riccardi and Savona 2013).

However, again, most of these studies focus on listed companies; even when they do take unlisted companies into account, they generally adopt a national perspective. The result is that **empirical knowledge of who the owners of European companies are** – and what their characteristics are (e.g. presence of natural vs. legal persons, involvement of legal arrangements, share of foreign owners, etc.) – **is still scant**. This is the context for the present discussion of **anomalies and risk factors related to BO and owners**.

The need for anomaly indicators of company ownership risk

The transparency of corporate ownership in order to prevent and fight financial crimes has become a key item on the agenda of institutions, policy-makers, and civil society (FATF 2022a; Knobel 2020; Riccardi and Savona 2013; OECD 2001). This, in turn,

highlights the need for an array of red flags and anomaly indicators related to BOs and ownership structures which could help in the early detection of high-risk companies potentially involved in money laundering, corruption and other criminal activities.

These anomaly indicators are – or can be – employed by various stakeholders and end-users such as the following:

- Public authorities, such as law enforcement or financial intelligence units (FIUs), in their investigation and intelligence activities;
- AML supervisory authorities, in their risk assessment exercises;
- Obligated entities, in their customer due diligence tasks;
- Researchers in the field of money laundering and financial crimes;
- Civil society, including investigative journalists and NGOs – these being the target audience of the CSABOT project.

Where can these anomaly indicators be found? There is **no single repository** from which these red flags can be collected because they are reported by a variety of sources:

- Regulations (e.g. in the AML or anti-corruption domain);

- Soft law instruments, notably the Financial Action Task Force (FATF) Recommendations;
- Institutional guidelines and best practices;
- Research reports and scientific publications.

However, although a list of risk factors could be identified based on these sources, **only some of them** have been:

- **tested empirically** on large-scale samples; or
- **validated**, i.e., checked against empirical evidence of financial crime or other criminal behaviour (e.g. through some form of judicial evidence).¹

The scope of this section is precisely that of **carrying out a review** of the anomaly indicators suggested by the literature.

¹ There are different methodologies with which to validate risk indicators, either qualitative or quantitative. One of those most frequently used, and which is described in this section, is validation through statistical analysis and machine learning methods which employ proxies for judicial evidence

concerning the involvement of companies – or their owners – in illicit activities. These methods make it possible to test the predictive power of the risk indicators in identifying companies involved, or suspected of being involved, in illicit activities.

A review of ownership risk factors

Overall, six broad categories of risk factors (or anomalies) related to BOs or ownership structures can be identified:²

1. Complexity of ownership structures;
2. Ownership links with entities in high-risk jurisdictions;
3. Employment of opaque legal vehicles and missing BO information;
4. Employment of nominees;
5. Ownership links with politically exposed persons (PEPs);
6. Ownership links with entities involved in adverse events.

These categories, though defined in different terms, are also covered by Annex III of the 4th EU AML Directive (AMLD),³ which states the risk factors to be considered for enhanced due diligence.

Box 1: Ownership risk factors mentioned in the 4th AMLD

- “customers that are resident in geographical areas of higher risk as set out in point (3)” (Annex III, 4th AMLD);
- “legal persons or arrangements that are personal asset-holding vehicles” (Annex III, 4th AMLD);
- “companies that have nominee shareholders or shares in bearer form” (Annex III, 4th AMLD);
- “the ownership structure of the company appears unusual or excessively complex given the nature of the company's business” (Annex III, 4th AMLD)
- “politically exposed persons” (article 20, 4th AMLD)

It should be stressed that the presence of a certain anomaly is often not enough to flag a company as high risk. This is because in many cases, as discussed in the following sub-sections, ownership anomalies can be justified on legitimate grounds. However, the coexistence of more than one anomaly makes a company more suspicious and, thus, of higher risk.

For each category of risk factors, Table 1 below reports:

- whether empirical studies exist;
- whether these studies are based on large-scale sample analyses

² This list should not be considered fully exhaustive. There might be other ownership anomalies not identified in this review which do not fall within such categories.

³ EU Directive 2015/849 of the European Parliament and of the Council of 20 May 2015, as amended by the EU Directive 2018/843 of the European Parliament and of the Council of 30 May 2018.

- conducted at the European or national/subnational level, or on a few case studies;
- whether some form of empirical validation against evidence of criminal conduct by companies or

their shareholders and BOs is provided.

The following sub-sections discuss, for each category of risk factors, the main studies and findings (full references are provided in Table 8 in Annex 1).

Table 1: Risk factors with empirical and validated studies

Risk factor category	Empirical studies		Validation
	EU	National / Subnational	
Complexity of ownership structures	✓		✓
Ownership links with entities in high-risk jurisdictions	✓		✓
Employment of opaque legal vehicles and missing BO information	✓		✓
Employment of nominees		✓	✗
Ownership links with political exposed persons		✓	✗
Ownership links with entities involved in adverse events ⁴		✓	✗

Complexity of ownership structures

Anomalously complex ownership structures are characterised by many layers separating the legal vehicle from the BO.⁵ These structures pose great challenges for obliged entities and law enforcement agencies when they try to identify the BOs of legal vehicles (e.g. Borselli 2011; European Commission 2019a; Hangacova and Stremy 2018; Knobel and Seabarron 2020; Savona and Riccardi 2017; Riccardi and Savona 2013). Annex III of the 4th AMLD identifies complexity of ownership structures as a high-risk factor requiring enhanced due diligence towards their clients. The Directive also stresses the need to consider the nature of the company’s business when assessing the

complexity of an ownership chain.

Complexity, in fact, is not anomalous *per se* and can be explained on legitimate grounds, such as simplifying business transactions for companies operating internationally (for a review, see Knobel 2022). In the absence of such legitimate grounds, however, the company should be considered anomalous (Knobel 2022; Bosisio et al. 2021).

The misuse of complex ownership structures for illicit purposes has been shown in many cases (Knobel 2022; European Commission 2019b; FATF – Egmont Group 2018; Savona and Riccardi 2018; Riccardi and Savona 2013; van der Does de Willebois et al. 2011; OECD 2001). For example, more than half of

⁴ This risk factor is often used as a target variable to validate other risk indicators.

⁵ There are other ways to operationalise the concept of anomalous complexity. However, this is the method most frequently used.

the cases collected by the FATF-Egmont Group (2018) involved such structures.⁶

A few large-scale studies have analysed this anomaly. For example, in the DATACROS EU project, Transcrime developed an indicator of anomalous ownership complexity that flagged companies with a high number of shareholding layers not justified by their size or business sector (Bosisio et al. 2021). The results showed that on average, 0.3% of companies in Europe had anomalously complex structures. The Netherlands, Luxembourg and Malta stood out as the countries with the highest concentration of anomalously complex companies (see Figure 1). The indicator was validated by assessing its ability to predict whether companies or their owners were included in global sanctions lists (e.g. those issued by institutions such as the UN or the EU) or targeted by enforcement measures (e.g. arrests, judgements).

Bosisio et al. (2022) analysed companies registered in the Italian region of Lombardy and found that 0.3% had complex

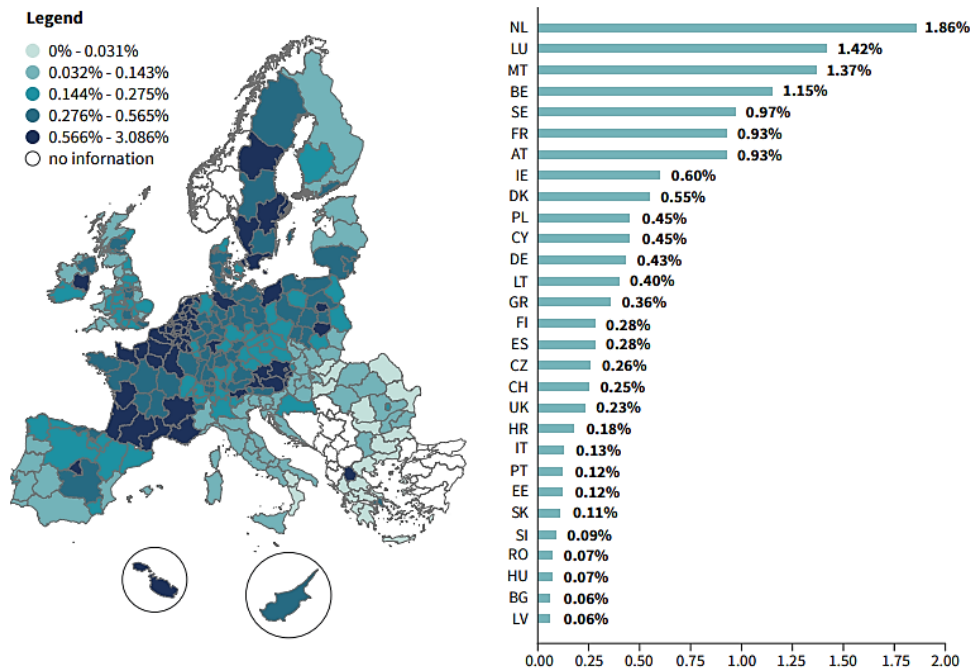
structures. They considered as anomalous both companies with a high number of layers (“vertical complexity”), and companies with a high share of intermediate owners in the chain (“horizontal complexity”).

Other studies have investigated specific forms of complexity, such as circular and fragmented ownership. **Circular ownership** structures involve two or more legal vehicles directly or indirectly owning each other. In some countries (e.g. Malta, UK) this ownership scheme is forbidden by law because it is considered particularly risky. Indeed, circular ownership schemes may be deliberately set up to hide the real owner of a legal entity. Very few studies have empirically assessed the risk posed by these structures, and only at the national level (e.g., Global Witness 2019; Jofre 2022). For example, Global Witness (2019) found that 0.01% of companies registered in UK in 2019 were involved in circular ownership schemes, thus violating UK law.

⁶ The results of this study should be interpreted cautiously due to data limitations. The cases identified were gathered from a relatively small number of countries; furthermore, many of them

were provided by a few jurisdictions. It is possible, therefore, that the sample may be biased and may have led to an overrepresentation of some risk factors.

Figure 1: Percentage of companies with ownership structures characterised by anomalous complexity, NUTS2 (EU 27 MS + UK and CH, 2019)



Source: Bosisio et al. (2021).

Other studies have stressed the risks posed by **fragmented ownership**, i.e. when the share capital of a company is divided among different owners such that none of them surpasses the threshold for identification of the BO (Knobel 2022). Although not being suspicious *per se*, criminals may intentionally split capital shares among many owners in order to avoid beneficial ownership identification and registration and carry out their illegal activities secretly (FATF – Egmont Group 2018; Low and Kiepe 2020; Knobel 2021; Savona and Riccardi 2018). Evidence of this scheme has been demonstrated in some case studies (FATF – Egmont Group 2018). Only one study has analysed fragmented ownership using a large-scale sample, although without validating the indicator: Bosisio and

colleagues (2022) found that 0.1% of the analysed companies in Lombardy were characterised by this anomaly.

Ownership links with entities in high-risk jurisdictions

It is widely acknowledged that criminals exploit jurisdictions with legislative loopholes in the anti-money laundering/combating the financing of terrorism (AML/CFT) framework to facilitate financial crimes and hide the identity of the BO (so-called high-risk jurisdictions). However, **there is no universal consensus on the definition of a high-risk jurisdiction**. Official black- and grey-lists of countries that are not cooperative or compliant with AML and tax policies are regularly issued by

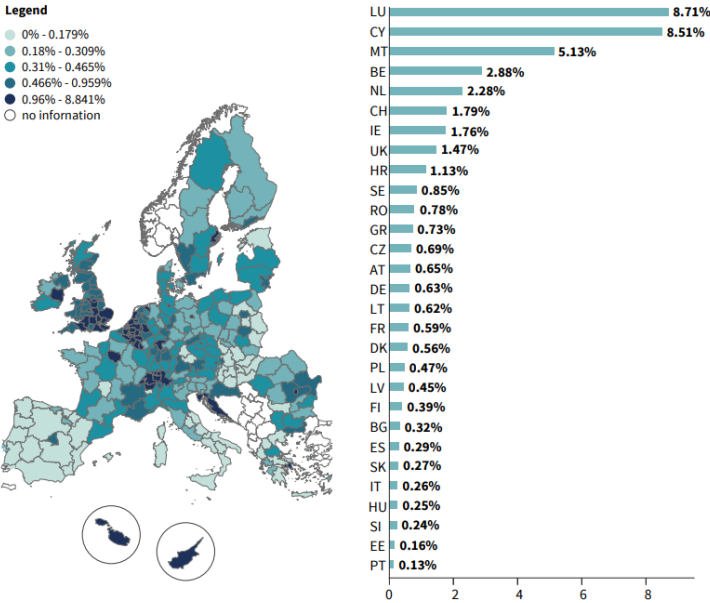
national and supranational governments (for example, European Commission 2020b; 2020a; FATF 2021). However, these lists are criticised due to their political biases and lack of transparency (Halliday, Levi, and Reuter 2014; Levi, Reuter, and Halliday 2018; van Duyne and van Koningsveld 2017; Riccardi 2022). For this reason, scholars have proposed alternative methods to evaluate financial and corporate secrecy across jurisdictions and the associated risks of financial crime (for example, the *Financial Secrecy Index* developed by Tax Justice Network).

Numerous empirical studies have investigated the exploitation of these jurisdictions in ownership structures. Aziani and colleagues (2021) found that investors are likely to establish companies for criminal purposes in countries with a high level of secrecy but a low level of corruption. In Project DATACROS, Transcrime developed and validated an indicator that flagged

companies with shareholders registered in black- or grey-listed jurisdictions (Bosisio et al. 2021). They found that on average, 0.9% of European companies had ownership connections to high-risk jurisdictions (Bosisio et al. 2021). Luxembourg and Cyprus emerged as the countries with the highest density of ownership links with such countries (respectively 8.7% and 8.5%) (see Figure 2). Project EBOCS (2021) obtained similar results when analysing ownership data on companies in selected EU member states (MS) retrieved from BO and business registers.

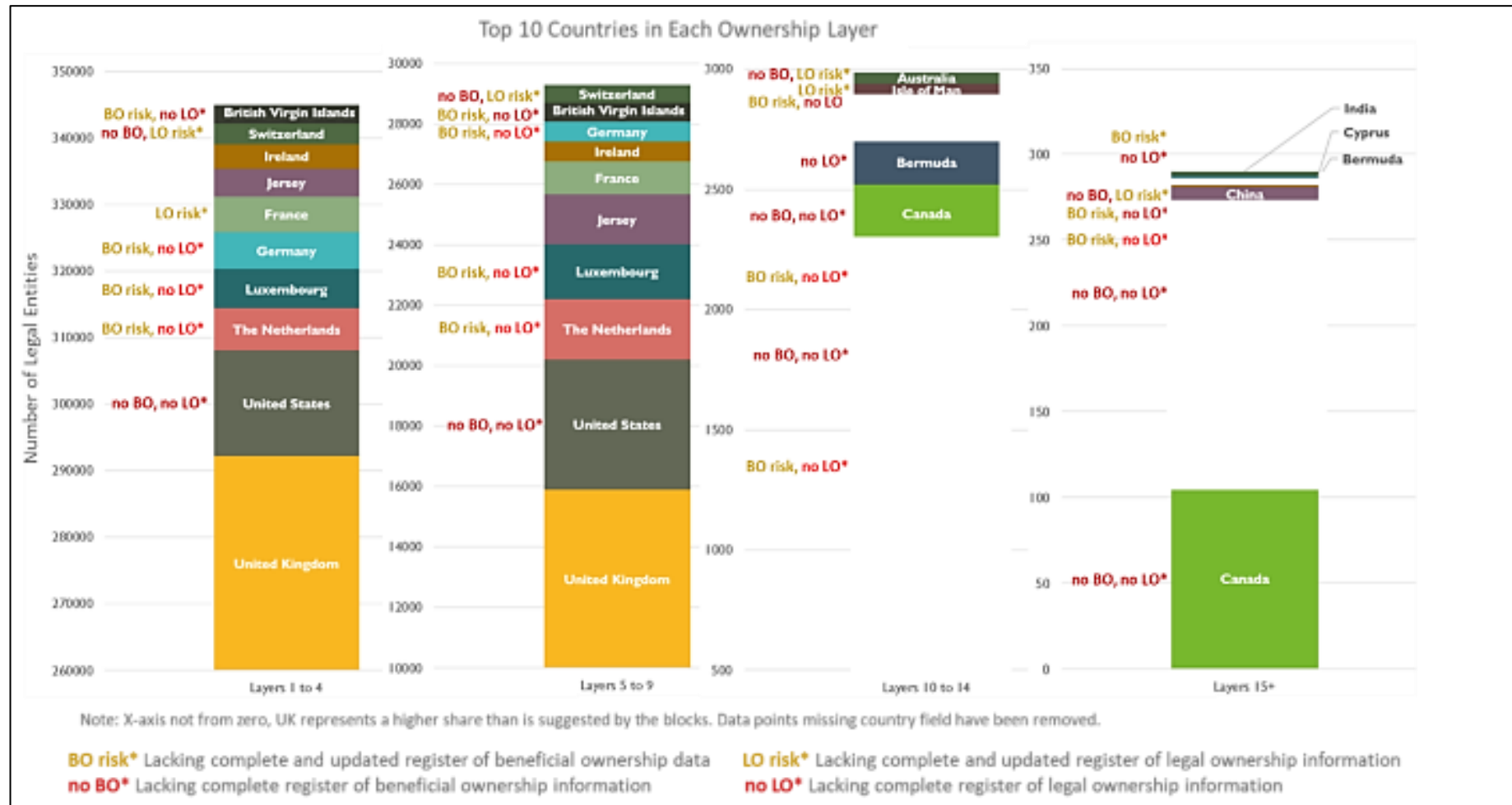
Studies conducted at the national level have provided interesting insights as well. For example, Knobel and Seabarron (2020) found that a huge number of foreign owners of UK companies were incorporated in secrecy jurisdictions that did not require a comprehensive registration of legal or beneficial ownership (see Figure 3).

Figure 2: Percentage of companies with ownership links to blacklisted/greylisted jurisdictions, EU27 + UK and CH (2019)



Source: Bosisio et al (2021).

Figure 3 Geographic spread of layers of UK companies



Source: Knobel (2022)

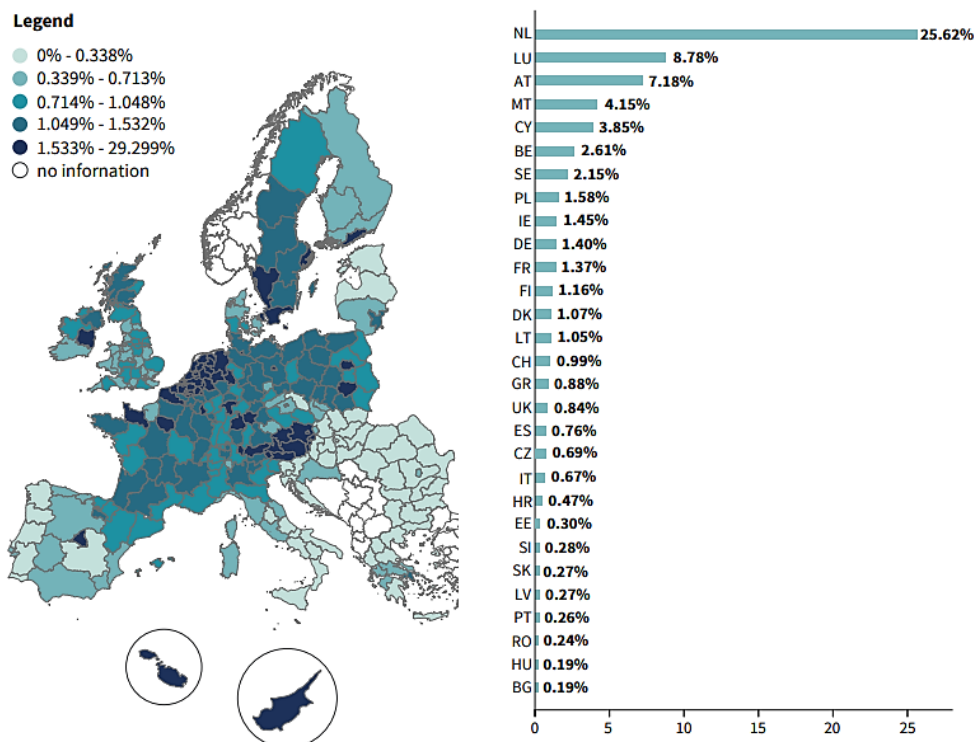
Employment of opaque legal vehicles and missing information on BOs

Legal arrangements such as trusts, fiduciaries, foundations and certain types of investment funds are widely used for legitimate purposes. However, they may be also exploited by criminals to launder the proceeds of illicit activities because **they are not subject to registration requirements in many jurisdictions** (FATF 2006; 2010; HM Revenue & Customs 2010; Knobel 2017; 2021; OECD 2001; Riccardi and Savona 2013). For this reason, Annex III of the 4th AMLD considers risky “legal persons or

arrangements that are personal asset-holding vehicles”.

Most of the empirical research is based on case studies. For example, FATF and Egmont Group (2018) found that trusts are mostly exploited by criminals in combination with companies, rather than in isolation. Few large-scale studies have investigated this anomaly. In Project DATACROS, Transcrime developed and validated an indicator that flagged companies controlled by a trust, a fiduciary or a fund that did not allow for the identification of a BO (Bosisio et al. 2021). The results showed that 1.5% of European companies were controlled by such vehicles (Bosisio et al. 2021) (see Figure 4).

Figure 4: Percentage of companies with ownership links with opaque corporate vehicles that do not allow for the identification of BOs (2019)



Source: Bosisio et al (2021).

A few studies have been conducted in specific sectors. For example, Transparency International UK (2015) found that 3.6% of UK properties involved in grand corruption investigations were held by an offshore trust.

Other studies have considered the **unavailability of BO information** as a risk factor. Trautvetter (2021) found that 135 of the 433 companies owning real estate properties in Berlin were anonymous. Among them, 82 remained anonymous using joint stock companies and investment funds. Drawing on the OpenLux database, Szakonyi and Martini (2021) found that 80% of private investment funds did not declare their BOs.

The dearth of beneficial ownership information may be also connected to the availability of **bearer shares**. The lack of any documentation recording the names of their owners makes the identification of the BOs of legal persons controlled via bearer shares almost impossible (FATF – Egmont Group 2018; OECD 2001). In fact, several case studies have revealed the use of bearer shares for criminal purposes (e.g., Martini and Murphy 2018; FATF – Egmont Group 2018; van der Does de Willebois et al. 2011). Annex III of the 4th AMLD also considers it to be a risk factor.

Employment of nominees

Despite being legitimate *per se*, **nominees** may be used by criminals to conceal real

owners, and are thus at higher risk of money laundering, as stressed in Annex III of the 4th AMLD. Most of the research relies on case studies (e.g., Savona and Riccardi 2018; FATF – Egmont Group 2018; van der Does de Willebois et al. 2011).

This is due to the fact that official lists of ‘nominees’ obviously do not exist. Consequently, studies have checked the presence of proxies for nominees by looking at certain anomalous characteristics of BOs, such as age and gender.

In many jurisdictions, there are no age limits on being the BO of a company. However, the presence of **too old or too young owners** may suggest that they are acting as nominees on behalf of the real owner – as stressed, among others, by the European Banking Authority (2021). Bosisio et al. (2021) found that 3% of companies registered in Lombardy (Italy) had at least one BO or director displaying this anomaly (being under 20 years old or over 80 years old).

In the same study, Bosisio and colleagues analysed the **anomalous presence of females** among BOs, directors and managers – a characteristic that might suggest their misuse as nominees. The authors found that 1.2% of the companies analysed had this anomaly. A high presence of women in the ownership structure is not anomalous *per se*. Nonetheless, some studies such as the MORE project (Savona and Riccardi 2018) have highlighted that mafia families

frequently use wives, sisters, daughters, mothers as nominees when infiltrating the legal economy, and that the presence of female owners among ‘mafia companies’ is almost two times higher than among ‘clean’ companies.

Another sign of the use of nominees is the presence of **owners with an anomalous number of companies incorporated** (Global Witness 2019). Global Witness (2019) found that 0.2% of UK companies in 2019 had BOs who themselves controlled over 100 companies. This was interpreted as a potential sign of the use of nominees. Bosisio and colleagues (2022) found evidence of the practice in Lombardy (Italy) as well.

Finally, the European Banking Authority (2021) suggests that companies should assess whether the **changes in the ownership and control structure** of the client are reasonable, since frequent changes may be employed to obfuscate the real ownership of the company (Bosisio et al. 2022) Empirical analyses on this topic are scant (i.e. Bosisio et al. 2022; Bosisio, Nicolazzo, and Riccardi 2021; Italian Ministry of Interior 2021). However, none of those conducted has validated this anomaly.

Ownership links with politically exposed persons

The **presence of Politically Exposed Persons** (PEPs) among the owners of a company does not necessarily flag an involvement in criminal activities. However, it is widely recognised as a risk factor by EU AML legislation, institutional guidelines, and research studies. PEPs are indeed particularly **vulnerable to being exploited for criminal purposes**, such as money laundering or corruption, or they may actually seek such opportunities because of the political influence they can exert. Article 20 of the 4th AMLD, as amended by the 5th AMLD, requires obliged entities to carry out enhanced due diligence in the case of transactions or business relationships involving PEPs.⁷

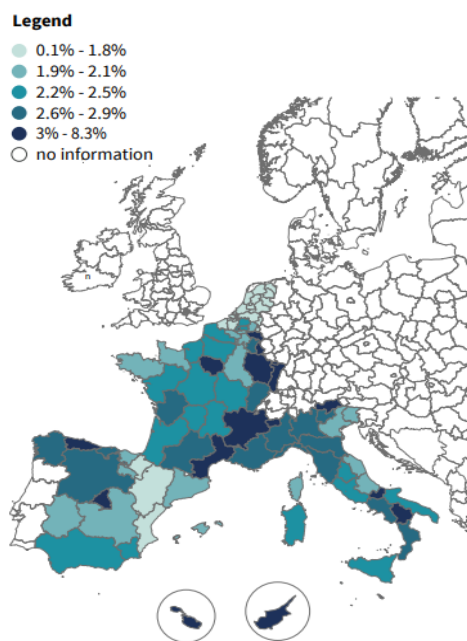
PEPs’ involvement in illegal activities has been widely proved in several cases, such as those of the Panama, Paradise and Pandora Papers (Haberly 2020). A few large-scale studies have explored the risks related to PEPs. Project DATACROS mapped the presence of PEPs across limited liability companies registered in 8 European countries (Bosisio et al. 2021). The results showed that Malta and Cyprus were the countries with the highest percentage of

⁷ PEPs are a ‘natural person who is or who has been entrusted with prominent public functions’, such as heads of state or of the government, members of

Parliament or other legislative bodies, or members of judicial bodies (art. 3, point 9, 4th AMLD, as amended by the 5th AMLD).

companies with at least one PEP among their BOs.

Figure 5: Percentage of companies with beneficial owners who are PEPs, 8 EU MSs (2019)



Source: Bosisio et al (2021).

Ownership links with entities involved in adverse events

Both scholars and institutions have highlighted the risks connected to companies that have been **sanctioned**, **investigated** for financial crimes, or have **known connections with criminals**, as apparent from police data but also media reports and news sources (i.e. **adverse media**) (European Banking Authority 2021; FATF – Egmont Group 2018).

Very few studies have investigated the (potential) criminal connections of European companies. Project DATACROS checked whether companies registered in 8 EU MSs

(or their owners) were listed in **global sanction screening lists or were subject to enforcement measures**. The results showed that more than 0.2% were sanctioned or subject to enforcement, or were connected to entities that had been sanctioned or subject to enforcement. At the national level, Baquero (2021) found that many BOs included in the Luxembourg BO register had been investigated for, or charged with, financial and organised crime.

Besides adverse media, other events negatively affecting the reputation of the company could also be taken into consideration. In their analysis of companies registered in Lombardy (Italy), Bosisio and colleagues (2022) considered as a risk factor the presence of ownership links with legal or natural persons mentioned in the *Offshore Leaks* database. This database includes individuals and entities involved in investigations carried out by the International Consortium of Investigative Journalists (ICIJ), such as the Panama and Pandora Papers. The presence of entities and individuals in the database does not necessarily prove their involvement in crimes; however, it can damage the reputation of a company. The authors found that 3,068 companies registered in Lombardy had been involved in one of these investigations or had at least one shareholder or director involved.

Summary and conclusions

The review of the literature presented above provides an overview of the risks related to European companies. It highlights that:

- There are several ownership risk indicators, but only a few of them have been empirically validated, and in any case only in selected countries and sectors.
 - 0.3% of European companies have anomalously complex ownership structures. However, scant information is available on the use of fragmented and circular ownership in Europe.
 - Almost 1% of European companies have ownership links with shareholders in black/greylisted jurisdictions.
 - 1.2% of European companies have ownership links with trust and other opaque legal vehicles that do not allow for identification of the BO.
 - Malta, the Netherlands and Luxembourg often appear at the top of country risk rankings. Their vulnerability and exposure to financial crimes have been well demonstrated in investigations, studies, and institutional risk assessments.⁸ However, as stressed below, little is known about the distribution of many ownership anomalies across European countries.
- Most of the available studies on nominees rely on proxies and case studies. Therefore, it remains unclear the extent to which they are misused for illicit purposes in European companies and how this varies among geographical areas and business sectors.
 - Several case studies have confirmed the involvement of PEPs in illicit activities. However, there is a lack of large-scale studies.
 - The use of data on previous enforcements and sanctions is crucial for the validation of risk indicators. Future research should investigate the extent to which European companies are involved in financial crimes or are connected to entities that have engaged in illicit activities.

⁸ See, for a review, Bosisio et al. 2021.

Section 2. Case study: Assessing ownership risk factors of legal persons in the real estate sector

An empirical application of risk factors to real estate in Paris

The aim of this section is to apply, in an innovative way, the risk factors and the anomaly indicators presented in the previous section to a selected business sector in a selected European region in order to demonstrate their utility for assessing the risk of **financial crime** and for **intelligence** purposes.

The industry chosen is the **real estate sector in the city of Paris**. Specifically, this study will analyse the ownership anomalies of a sample of companies owning properties in the city, and then the level of risk associated with the properties themselves.

The reasons for this choice are numerous. First, a large number of investigations and studies have demonstrated the **vulnerability of real estate to money laundering and financial crime** (e.g., Angélico 2017; FATF 2007; 2022b; Ferwerda and Unger 2013; Transparency International UK 2015; Transparency International UK and Thomson

Reuters 2016). This is explained by three main factors: a) real estate purchases involve large amounts of money; b) transactions in this sector are often poorly scrutinised; b) dirty money invested in real estate can be easily converted into legitimate revenues, for example through rentals (Remeur 2019; Kumar and de Bel 2021). Nevertheless, there is a shortage of empirical studies assessing the financial crime risk in this industry.

Second, the French Ministry of Economy and Finance has recently made public a segment of the land registry, and specifically the list of properties owned by legal persons. By combining real estate with company ownership data, this study also demonstrates the **utility of having registries which are transparent, publicly accessible, and interoperable**.

GLOSSARY. In the whole section:

- ‘owners’ is used to indicate any owner of a legal person, either the BO, the legal owner, or any other intermediate shareholder at any step of the ownership chain;
- ‘legal persons owning real estate properties’ or ‘property owners’ are the companies which are owners of the properties in Paris.

Methodology

Identification of the sample

Data on properties in Paris were extracted from a public dataset made available by the French Ministry of Economy and Finance.⁹

The dataset comprised properties exclusively owned by legal persons as of January 1, 2021 in France, while those owned by sole proprietorships and individuals were not included. The data were the address where the property was located, as well as the name, the national identifier (SIREN) and legal form of the legal persons owning it. Information on the type

of property and its value (either the nominal or market price), however, was missing.

The **data extracted** in the analysis included information on 945,216¹⁰ properties located in the 20 boroughs (*arrondissements*) of Paris and owned by 115,312 legal persons. In the dataset, properties were classified as single building units. More specifically, the dataset comprised all types of properties owned by legal persons, e.g. residential and commercial properties, but did not cover those exempted from property tax (i.e. certain public properties).

Companies owning properties in Paris were searched in Orbis¹¹ to retrieve company and ownership information. Figure 6 illustrates the procedure followed to identify the sample.

- Out of 115,312 legal persons, 20,992 (18%) were not associated with a SIREN number, but displayed only the name and the legal form. These 20,992 included both French and foreign entities. The absence of a unique identifier prevented the retrieval of any information about those entities.¹²

⁹ The dataset is available [here](#).

¹⁰ The total number of real estate properties in Paris (including both residential and commercial ones, owned by both legal persons and natural persons) was not available. Therefore, it was not possible to estimate the share of properties in the dataset provided by the French Ministry of Economy and Finance in the total.

¹¹ Orbis is a dataset provided by Bureau van Dijk, a company of the Moody's Analytics group. It includes company data and ownership information with global coverage.

¹² The main reason is that different companies may have the same name and legal form. In those cases, therefore, it was not possible to identify with certainty which was the legal person that owned the property.

- The remaining 94,320 companies (82%) were searched in Orbis by national ID. Only 4,499 of them were found with available information on ownership structure.¹³ This seemed to be mainly due to the low coverage of ownership information on French companies in Orbis. Indeed, as of 29 April 2022, out of 21,062,879 French legal persons included in Orbis, only 726,195 (3.5%) had information on their ownership structure.

Despite the low number of companies found in Orbis (4% of 115,312 legal persons), **these 4,499 companies owned 53% (504,975) of all the real estate properties** included in the dataset extracted. Moreover, the sample of 504,975 properties was representative in terms of geographical distribution. Table 10 in Annex 2 compares the number of properties in this sample by borough with respect to the total universe of 945,216 properties. It shows similarity between the two groups. Eventually, the analysis of this study focused on these **504,975 properties** and the **4,499 legal persons** owning them (highlighted in green in Figure 6).

For 3,557 companies (out of 4,499), the identity of at least one BO was known; for the remaining 942, information on BO(s) was missing.

Real estate owners without available information on BOs

Overall, we were not able to identify the BO(s) of 111,755 companies out of the initial sample of 115,312 real estate owners (96.9%). This was for the following reasons:

- The company was not associated with a SIREN number (20,992);
- The company was not found in Orbis (83,081);
- The company was found in Orbis but with no information on the ownership structure (6,740);
- The company was found in Orbis with information on the ownership structure, but not on the BOs (942).

Properties without available information on BOs of their owners

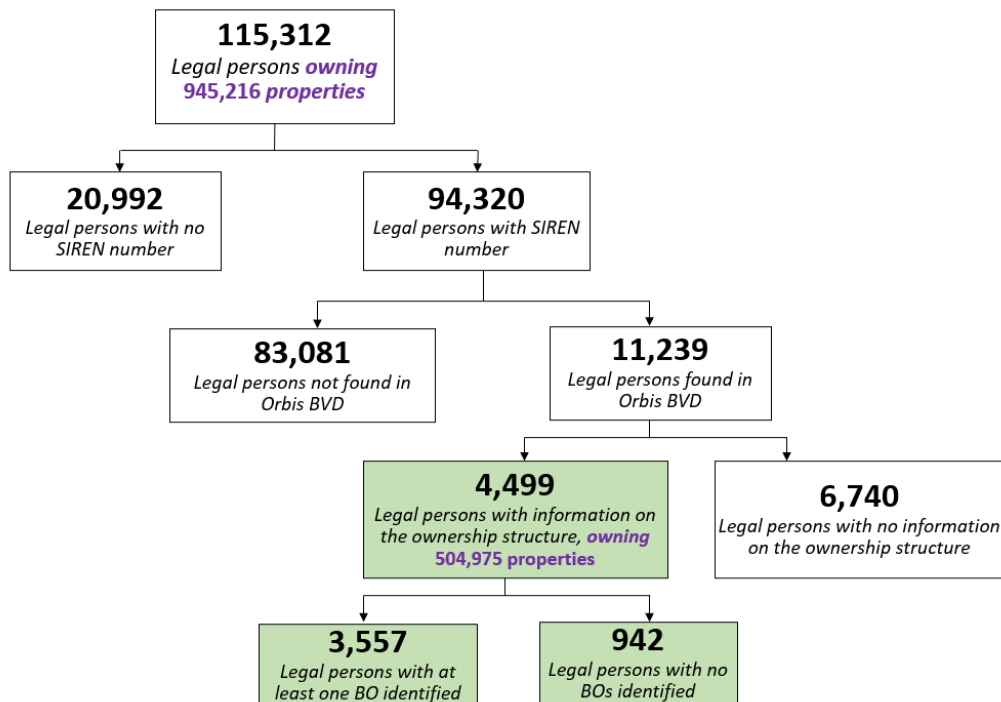
The number of properties for which we were not able to retrieve information on the BO(s) of their owners was 906,548. Of these:

- 440,241 were owned by companies excluded from the analysis for the reasons above.
- 466,307 were owned by at least one company with information on the ownership structure, but not on the BOs (and therefore included in the analysis).

¹³ The remaining 89,821 companies were either not found in ORBIS (83,081) or found in ORBIS but with

no available information on any of their owners, i.e. BOs or intermediate shareholders (6,740).

Figure 6: Identification of the sample



Reconstruction of the full ownership structure

For each of the 4,499 legal persons included in the analysis, the **full ownership structure** connecting the legal person to its BO(s) was reconstructed as follows:

- By relying on Orbis data, legal persons owning **more than 10% of the share capital** at each ownership level were identified, up to any ultimate natural person beneficiary at the top of the chain (i.e. the **BO**). We decided to lower the threshold to 10%, compared to the traditional 25%, for the purpose of a more comprehensive analysis.
- When it was not possible to identify a natural person at the top of a chain, then the top legal person

shareholder was referred to as the ‘other ultimate beneficiary’ (**OUB**).

- All entities separating the legal person from its BOs were labelled as ‘**intermediate owners**’ (**INT**). Intermediaries included OUBs.

It was decided to rely upon Orbis data and not to employ other sources (e.g. the French business registry or BO registry) because the analysis was not limited to the identity of BOs and legal owners, but also extended to the whole ownership structure (also when deployed across borders). This information is not provided by either the local company registry or the BO registry.

Analysis of ownership risk factors and anomalies

The analysis of the anomalies and the risk factors related to the ownership of these 4,499 companies was carried out by **computing an array of risk indicators for each legal person** in the sample. This

approach has been successfully adopted in various Transcrime projects and papers (e.g. Bosisio et al. 2021; Jofre 2022; Jofre et al. 2021). Table 2 below provides a brief description of all the risk indicators calculated (for more details see Table 11 in Annex 2).

Table 2 Ownership risk indicators computed at the company level

Category/risk indicator		Description
Complexity of ownership structures		The indicator shows the extent to which a legal person has a complex ownership structure which is not justified by its size and business sector.
Employment of opaque legal vehicles and missing information on BOs		The indicator shows whether the legal person is ultimately controlled by a trust or other opaque legal vehicle that does not allow for the identification of the BO.
Ownership links with entities in high-risk jurisdictions	<i>Ownership links with blacklisted and grey listed jurisdictions</i>	The indicator shows whether a legal person has ownership links with entities based in jurisdictions which are listed in official black- and grey-lists in the AML/CFT and tax domain.
	<i>Ownership links with top 30 secrecy jurisdictions according to the SS</i>	The indicator shows whether a legal person is linked to the top 30 jurisdictions scoring highest according to the Secrecy Score (SS) 2022.
Employment of nominees	<i>Anomalous age</i>	The indicator shows whether a legal person has BOs who are very young (<18) or very old (>80), and who may therefore be nominees.
Ownership links with politically exposed persons		The indicator shows whether a legal person has a BO who is a Politically Exposed Person (PEP) or a family member or close associate of a PEP.
Ownership links with entities involved in adverse events	<i>Financial enforcement</i>	The indicator shows whether a legal person or one of its owners have been targeted by financial enforcement measures (e.g. arrests, judgements).
	<i>Ownership links with entities mentioned in Offshore Leaks</i>	The indicator shows whether a legal person (or its owners/directors) is mentioned in Offshore Leaks (e.g. Panama Papers, Paradise Papers, etc).

All the risk indicators shown in Table 2 were then **computed at the property level**. The level of risk of each of the 504,975 properties was assigned according to the risk score associated with the legal

person(s) owning them. In the case of multiple legal person owners, the property was assigned the maximum of the risk scores associated with its owners (for more details, see Table 12 in Annex 2).

In order to control for observations that might distort the results, the analysis described above was replicated, removing:

1. Companies owning a very high number of properties (outliers), and the related properties;
2. Companies with local public ownership and the related properties.

With respect to the first point: As shown in Table 3, a few companies in the sample analysed owned a huge number of properties, while the majority owned only one or two. For this reason, the results were influenced by the presence of a few outliers. For example, imagine that company A scores 5 on *Complexity of ownership structures* and owns 160,000 properties, and that all the other companies score 1 on that indicator. In this case, 32% of the properties in the sample would be considered risky, although this result depends entirely on one company. For this reason, the computation of risk indicators was replicated by removing the outliers. All the companies more than 4 standard deviations from the mean were considered outliers. In total, 5 outliers were identified (Table 9 in Annex 2 provides their names and characteristics). Figure 12 in Annex 2 shows the distribution of companies in terms of the number of properties owned, highlighting the observations identified as outliers.

With respect to the second point: Legal persons ultimately owned by the

municipality of Paris (*Ville de Paris*) or the Region of Paris (*Île-de-France*) were removed from the analysis. Companies controlled by local public bodies are considered less interesting for the purpose of this study because they are usually less anomalous. Indeed, Annex II of the 4th AMLD mentions ‘public administrations or enterprises’ among the factors that require simplified due diligence. Table 13 in Annex 2 shows the risk indicators associated with the latter, as well as the outlier companies.

To summarise, analyses were conducted on:

- 4,499 companies owning 504,975 properties (**main sample**);
- 4,494 companies (**excluding outliers**) owning 176,535 properties; and
- 4,478 companies (**excluding companies with local public ownership**) owning 200,385 properties.

Results

Descriptive statistics

Real estate owners in Paris

The 4,499 legal persons analysed display the following characteristics:

- **Country of registration.** Almost all of them are registered in France, while only three are foreign.
- **Legal form.** 38.8% are private limited liability companies (*société à responsabilité limitée*), 38.2% are simplified limited companies (*société*

par actions simplifiée), 10.7% are public limited companies (*société anonyme*), 4.9% are partnerships (*société en nom collectif*), 4.1% are ‘real estate partnerships’ (*société civile immobilière*),¹⁴ while the rest have other legal forms.

- **Business sector.** Most of these companies operate in the following business sectors (NACE rev. 2 classification):¹⁵ L - real estate activities (45.5%) and K - financial and insurance activities (15.5%).
- **Size:** The majority are small-medium companies (72.2%), while the rest are large and very large (27.8%).¹⁶
- **Average number of BOs.** On average, companies have 1.4 BOs (the maximum is 26).
- **Foreign owners.** 471 of them have at least one foreign BO (13.2% of the 3,557 companies with at least one BO identified), while 654 have at least one foreign intermediate owner (28.8% of the 2,270 companies with at least one INT). This confirms the foreign interest in the real estate market of Paris.
- **Concentration of real estate ownership.** As shown in Table 3, the majority of the companies own very few properties. In contrast, a small number of companies own a large

amount of real estate (see the top 10 in Table 9 in Annex 2). The company that owns the largest number of properties (163,760) is Paris Habitat-OPH, a French Public Housing Office.

- **Local public ownership.** 21 companies (0.5% out of 4,499) are ultimately owned by the municipality of Paris (*Ville de Paris*) or the Region *Île-de-France*. Two of them are outliers in terms of number of properties owned.
- **State ownership.** 182 companies are fully or partially owned by national or foreign governments. Most of them are owned by the French government (116), and others by foreign governments (e.g. Qatar, China, Iran).¹⁷

Table 3 Distribution of the number of properties per company

statistic	value
mean	114
st. dev.	2891
median	2
75 th percentile	6
90 th percentile	27
min	1
max	163,760

¹⁴ These are legal forms which are quite commonly employed in France for holding real estate properties, because they guarantee some tax advantages and management benefits in the case of sale or inheritance of properties (Notaires de France 2017).

¹⁵ See [here](#).

¹⁶ The size of a legal person was defined by considering the operating income, total assets and the number of employees.

¹⁷ See Table 15 in Annex 2.

The owners... of the owners of real estate in Paris

Behind these 4,499 legal persons, analysed above, there are 6,373 BOs and 3,874 INTs, of which 1,042 are OUBs.

The analysis yielded interesting results related to the distribution of **domestic and foreign owners** in the sample analysed:¹⁸

- **BOs.** 79.9% of all BOs are French, while 20.1% are foreign citizens.

- **INTs.** 63.7% are registered in France, while 36.3% is foreign.
- **OUBs.** 62.2% of all OUBs are registered in France, while 37.8% are registered in a foreign jurisdiction.

Table 4 shows the top 15 foreign nationalities (i.e. non-French) among BOs, INTs and OUBs.

Table 4: Top 15 foreign nationalities among BOs, INTs and OUBs

#	BOs (579)	N	INTs (1,349)	N	OUBs (336)	N
1	Italy	95	Luxembourg	282	Belgium	54
2	Germany	63	Germany	146	Luxembourg	45
3	Morocco	57	United Kingdom	129	Germany	34
4	Algeria	43	Belgium	108	United Kingdom	34
5	United Kingdom	38	Netherlands	96	Netherlands	20
6	Spain	34	Italy	85	United States	19
7	China	23	United States	66	Switzerland	15
8	Tunisia	19	Switzerland	51	Japan	12
9	United States	18	Spain	47	Canada	8
10	Luxembourg	16	Hong Kong	27	Italy	8
11	Lebanon	15	Japan	26	British Virgin Islands	7
12	Belgium	14	Singapore	25	Cayman Islands	6
13	Switzerland	13	Cayman Islands	23	Lebanon	5
14	Hong Kong	11	Austria	21	Hong Kong	5
15	Portugal	10	Canada	16	Denmark	5

¹⁸ The percentages presented above were computed considering only the owners with available

information on nationality (2,879 BOs, 888 OUBs and 3,719 INTs).

Anomalies and risk factors

This sub-section presents the results on risk indicators at the company and property levels. Since the results at the company level do not substantially vary between the main and the two sub-samples (see Table 14 in Annex 2), this section presents only those related to the main sample. In contrast, the results at property level are discussed across samples. Table 5 below summarises the latter, showing the percentage of

properties owned by at least one legal person with the highest risk scores on the different indicators. We considered to be anomalous legal persons scoring 5 on all risk indicators, except for ‘*complexity of ownership structures*’, where we flagged as anomalous companies with values equal to or greater than 4 (for more details on the operationalisation of risk indicators see Table 11 in Annex 2).

Table 5 Percentage of properties owned by at legal persons with the highest risk scores, by sample

Risk factor	% Properties – main sample	% Properties – excl. outliers	% Properties – excl. local public ownership
<i>Complexity of the ownership structure</i>	46.5% (out of 504,975)	52.5% (out of 176,535)	49.8% (out of 200,385)
<i>Ownership links with blacklisted and greylisted jurisdictions</i>	0.9% (out of 491,368)	2.6% (out of 162,928)	2.3% (out of 186,778)
<i>Ownership links to top 30 secrecy jurisdictions according to the SS</i>	1.0% (out of 491,344)	3.0% (out of 162,904)	2.6% (out of 186,754)
<i>Employment of opaque legal vehicles and missing information on BOs</i>	3.3% (out of 504,975)	9.5% (out of 176,535)	7.7% (out of 200,385)
<i>Anomalous age</i>	20.8% (out of 25,505)	20.8% (out of 25,493)	20.8% (out of 25,492)
<i>Ownership links with politically exposed persons</i>	9.6% (out of 38,668)	9.6% (out of 38,656)	9.6% (out of 38,655)
<i>Ownership links with entities mentioned in Offshore Leaks</i>	0.5% (out of 504,975)	1.5% (out of 176,535)	1.4% (out of 200,385)
<i>Ownership links with owners subject to enforcement for financial crimes</i>	0.1% (out of 504,975)	0.4% (out of 176,535)	0.4% (out of 200,385)

Note: The percentages presented were computed considering only properties owned by legal persons with available information needed to calculate each indicator, shown in brackets.

Complexity of ownership structures

In the main sample, **18.5%** of the legal persons owning properties in Paris show a **complex ownership structure** which is anomalous when compared to their peers (i.e. companies in the same sector and of the same size). In total, **234,724 properties** are owned by at least one legal person displaying this anomaly, corresponding to 46.5% of the analysed properties in Paris (504,975). This percentage remains high (and increases) after the removal of properties owned by outlier companies and those with local public ownership. As shown in Table 13 in Annex 2, some of the outlier companies and those with local public ownership display an anomalously complex ownership structure, although not all.

Ownership links with entities in high-risk jurisdictions

Links to black/greylisted jurisdictions

In the main sample, **1.4% companies** have at least one intermediate shareholder registered in jurisdictions listed in AML/CFT greylists and blacklists (FATF and EU) or in non-cooperative tax jurisdictions. They correspond to **4,268 properties** (0.9% of 491,368 for which information was available).¹⁹

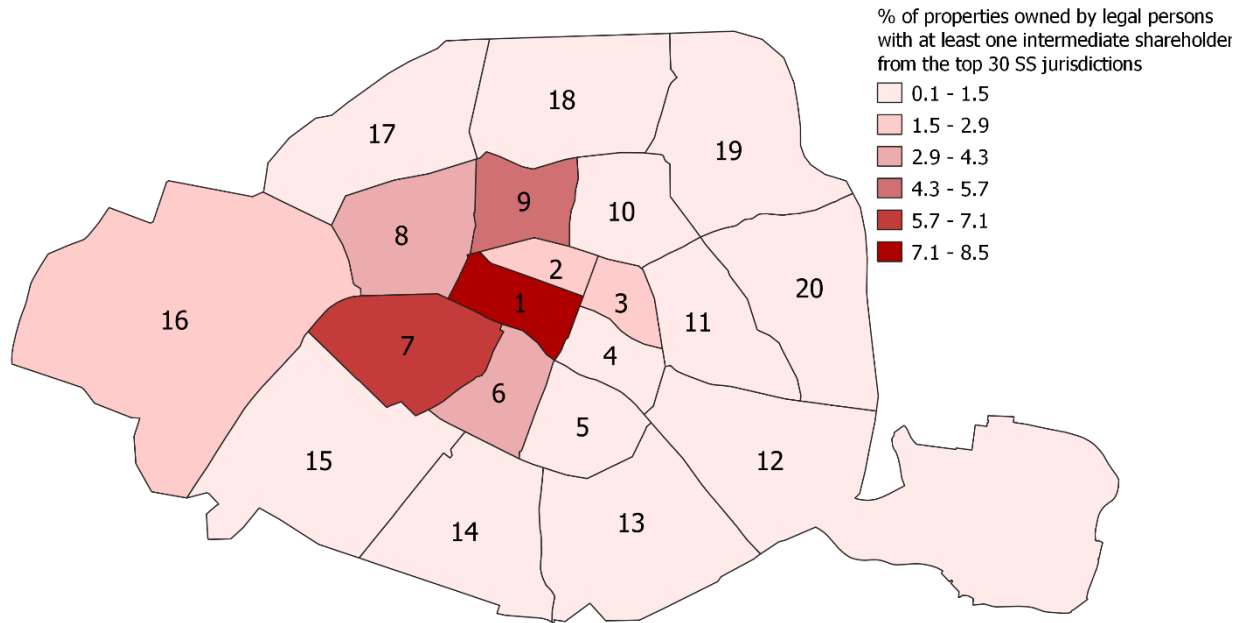
Links to top 30 secrecy jurisdictions according to the SS

If we take as reference the top 30 secrecy jurisdictions of the Tax Justice Network's Secrecy Score (SS), this percentage rises to **1.6% of property owners**, and the number of properties to **4,892** (1.0%²⁰ out of 491,344). Figure 7 shows the prevalence by borough (*arrondissement*) of real estate owned by companies linked to the top 30 secrecy jurisdictions according to the SS. Properties displaying this anomaly are concentrated in central-west *arrondissements*.

¹⁹ The percentage was computed by considering only legal persons with available information on the nationality of their INTs.

²⁰ The percentage was computed by considering only legal persons with available information on the nationality of their INTs.

Figure 7 Prevalence of properties owned by legal persons with at least one INT in the top 30 SS jurisdictions, by borough (main sample)



1. Louvre; 2. Bourse; 3. Temple; 4. Hôtel-de-Ville; 5. Panthéon; 6. Luxembourg; 7. Palais-Bourbon; 8. Elyseo; 9. Opéra ; 10. Entrepôt; 11. Popincourt; 12. Reuilly; 13. Gobelins; 14. Observatoire; 15. Vaugirard; 16. Passy; 17. Batignolles-Monceau; 18. Buttes-Montmartre; 19. Buttes-Chaumont; 20. Ménilmontant.

Note: Percentages are computed by borough based on the total number of properties located there.

Table 6 shows the number of **properties owned by legal persons with intermediate owners registered in SS top 30 countries**. A relatively high number of properties are owned by companies with at least one INT registered in the Cayman Islands (4,190) and Qatar (650).

Table 6: Properties owned by legal persons with intermediate owners in SS top 30 countries

Brunei	3
Bahamas	1
Curacao	5
Algeria	4
Kuwait	16
Cayman Islands	4,190
Oman	1
Panama	1
Qatar	650

SS Country	Number of properties owned by legal persons with INTs registered in SS top 30 countries
United Arab Emirates	21
Anguilla	3
Angola	1

As shown in Table 13 in Annex 2, none of the outlier companies and those with local public ownership had ownership links with entities in high-risk jurisdictions. For this reason, by removing these properties, the

percentage of ‘anomalous’ properties increases (see Table 5).

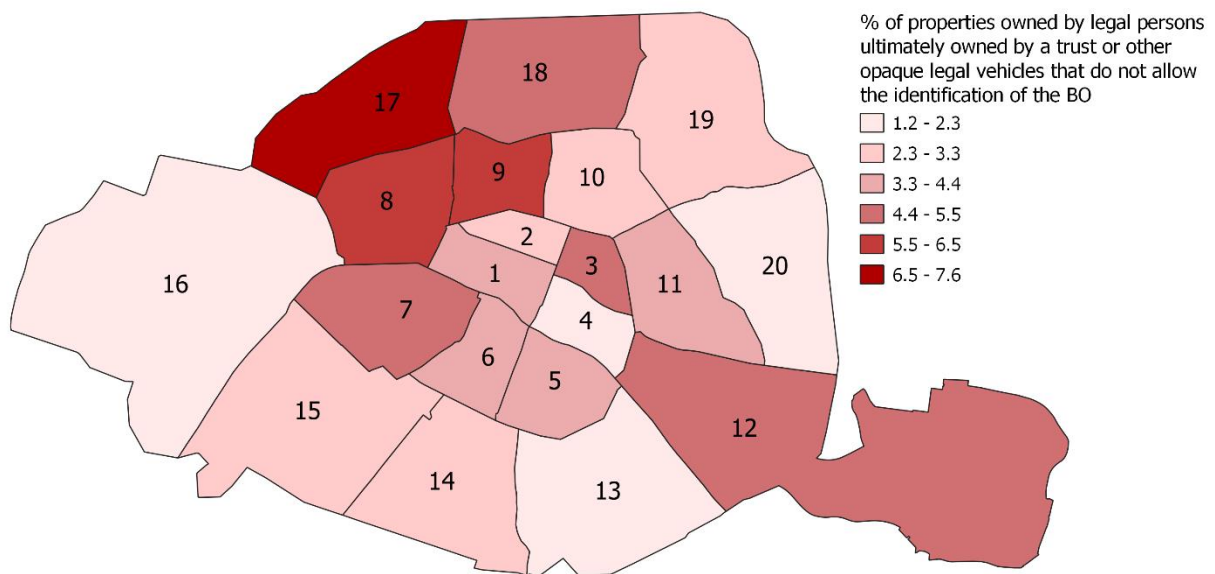
Use of opaque vehicles and missing information on BOs

Overall, in the main sample, out of 4,499 legal persons owning properties in Paris, **4.0%** are ultimately owned by certain opaque vehicles (e.g., mutual and pension funds, trusts) that do not allow for the identification of the BO. Out of 504,975 properties analysed, **16,822** are owned by a

legal person displaying this anomaly (**3.3%**). The results shown in Table 5 confirm that this indicator is still relevant after the removal of properties owned by outlier companies and those with local public ownership.

Figure 8 shows that boroughs with the highest prevalence of properties owned by companies ultimately owned by trusts or other opaque legal vehicles are located in the north of Paris.

Figure 8 Prevalence of properties owned by legal persons ultimately owned by trusts/other opaque legal vehicles that do not allow for the identification of BOs, by borough (main sample)



Note: Percentages are computed by borough based on the total number of properties located there.

Employment of nominees

Anomalous age

Overall, **8.7% legal persons** owning properties have at least one BO with an anomalous age (too old or too young). This might signal the use of nominees acting on the behalf of other people. **5,307 properties** (**20.8%** of 25,505)²¹ are owned by a legal person displaying this anomaly. By combining real estate and ownership data with information on persons deceased in France, we were able to identify at least 8 companies with at least one BO who turned out to be **dead**.²² These 8 companies owned 2,816 properties in Paris.

As shown in Table 5, the results at the property level do not change across the samples.

Ownership links with politically exposed persons

Overall, **6.5% of real estate owners** in Paris have at least one PEP or family members/close associates of a PEP among their BOs. This corresponds to **3,707 properties** (9.6% of 38,668).²³ In this case too, the main results remain the same after the removal of properties owned by outlier companies and those with local public ownership.

Figure 9 shows the prevalence of these properties by borough, which is higher in the city centre. Louvre (1) and Hotel-de-Ville (4) are the boroughs with the highest concentration of real estate properties characterised by this risk factor. These two arrondissements are also among the ones with the highest average square metre price in Paris (respectively 3rd and 4th in the ranking) (Statista 2022).

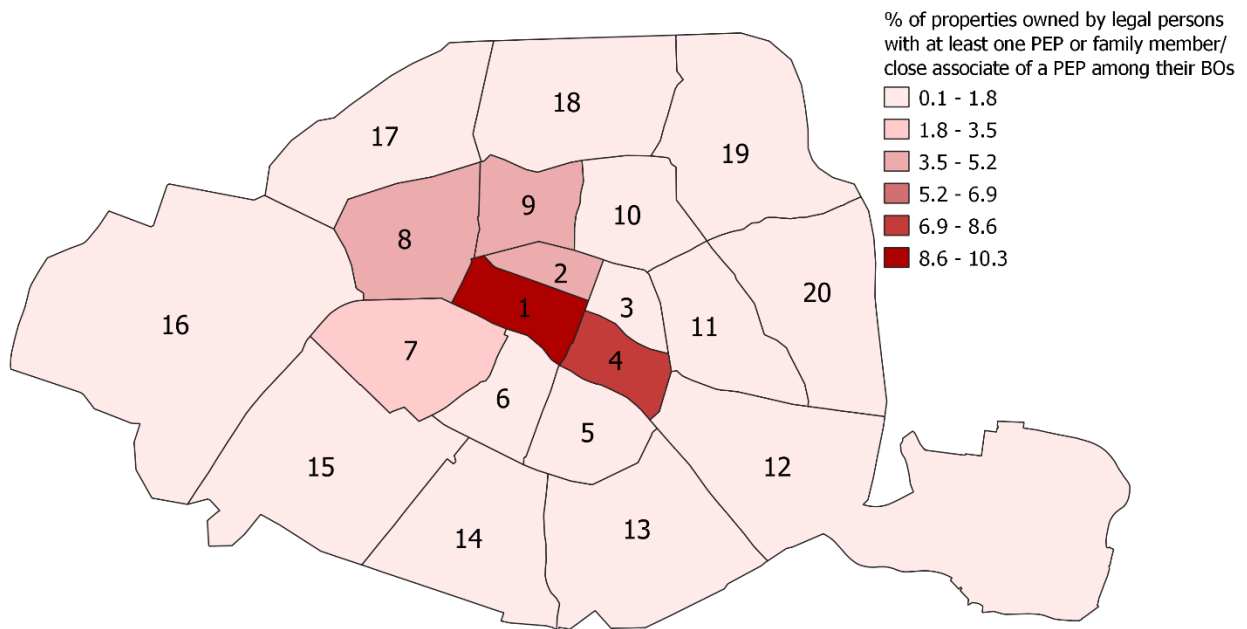
²¹ The percentage was computed by considering only legal persons with available information on BOs and their age.

²² This information was retrieved in July 2022 from a dataset made publicly available by the *Institut National de la Statistique et des Etudes Economiques* at [this link](#). This dataset includes information on the date and place of death of French individuals (death in France or abroad) and foreigners dying in France.

French BOs more than 80 years old were searched in the database to verify whether they were alive as of January 1, 2021 (the date to which the real estate data used in the analysis referred). Due to data limitations, it was not possible to extend the search to foreign BOs.

²³ The percentage was computed by considering only legal persons with available information on BOs.

Figure 9 Prevalence of properties owned by legal persons having at least one PEP or family members/close associates among their BOs, by boroughs (main sample)



1. Louvre; 2. Bourse; 3. Temple; 4. Hôtel-de-Ville; 5. Panthéon; 6. Luxembourg; 7. Palais-Bourbon; 8. Elyseo; 9. Opéra ; 10. Entrepôt; 11. Popincourt; 12. Reuilly; 13. Gobelins; 14. Observatoire; 15. Vaugirard; 16. Passy; 17. Batignolles-Monceau; 18. Buttes-Montmartre; 19. Buttes-Chaumont; 20. Ménilmontant.

Note: Percentages are computed by borough based on the total number of properties located there.

Ownership links with owners subject to adverse events

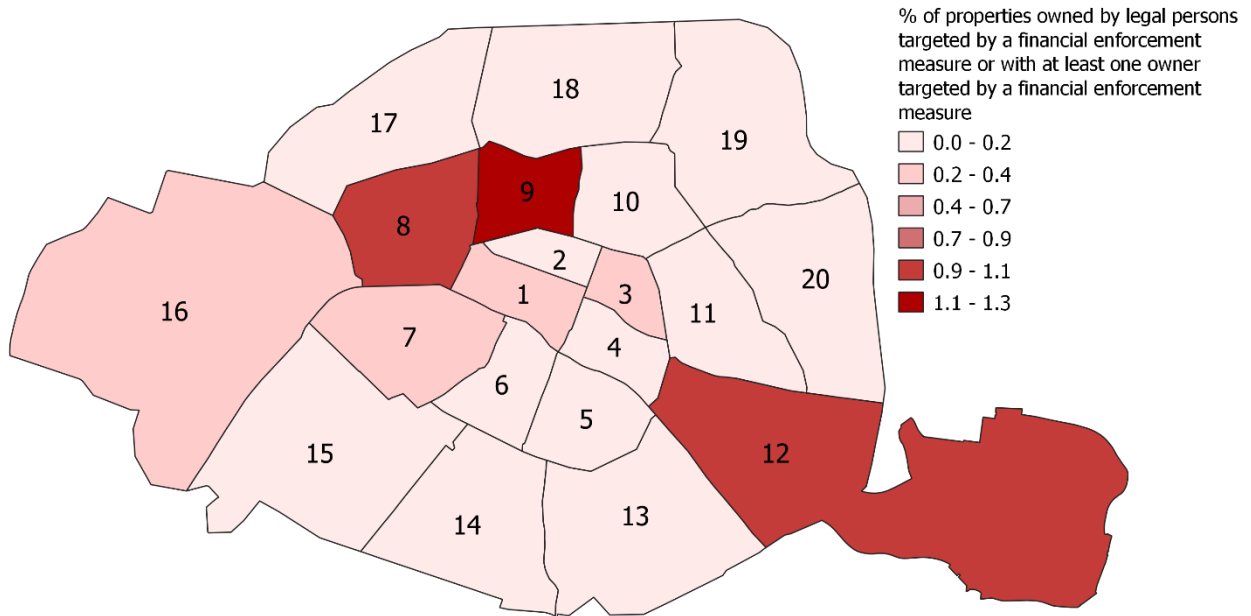
Ownership links with owners subject to financial enforcement

In the main sample, **0.9% of legal persons** have been targeted or have at least one

owner targeted by an enforcement measure for financial crimes (i.e. corruption, embezzlement, fraud or tax evasion).²⁴ This corresponds to 740 properties (0.1% of 504,975). Figure 10 shows the prevalence of the latter by borough: Elysée, Opéra and Reuilly are the *arrondissements* with the highest percentages.

²⁴ None of the companies and their owners had been targeted by enforcement measures for money laundering.

Figure 10: Prevalence of properties owned by legal persons subject to or having at least one owner targeted by enforcement measures for financial crimes, by borough (main sample)



1. Louvre; 2. Bourse; 3. Temple; 4. Hôtel-de-Ville; 5. Panthéon; 6. Luxembourg; 7. Palais-Bourbon; 8. Elyseo; 9. Opéra ; 10. Entrepôt; 11. Popincourt; 12. Reuilly; 13. Gobelins; 14. Observatoire; 15. Vaugirard; 16. Passy; 17. Batignolles-Monceau; 18. Buttes-Montmartre; 19. Buttes-Chaumont; 20. Ménilmontant.

Note: Percentages are computed by borough based on the total number of properties located there.

Ownership links with owners mentioned in *Offshore Leaks*

Overall, **1.7% of real estate owners** were mentioned in *Offshore Leaks* (e.g. Panama Papers, Pandora Papers) or have owners mentioned in these. They owned **2,722 properties** (0.5% of 504,975).

The share of real estate owned by companies targeted by financial enforcement measures or linked to entities mentioned in *Offshore Leaks* increases once outliers and companies with local public ownership are removed.

Combination of risk indicators

Table 7 shows the percentage of properties owned by companies with at least 1 risk factor as well as those with more.²⁵ As discussed in Section 1, the presence of a certain anomaly in the ownership structure of a company is generally not sufficient to indicate a high-risk company and may generate a large amount of false positives. To identify companies at higher risk it is important to **combine multiple indicators** and consider the companies which display **more than one anomaly at the same time**. In the sample of properties analysed, we found that more than 45% are owned by a company with at least one risk factor in all samples. In contrast, a much smaller set of

properties could be considered particularly risky because they were owned by legal persons with **several ownership anomalies**. In all samples, less than 3% of properties are held by owners with more than 3 risk factors; less than 0.04% are owned by companies with more than 4 risk factors.

Figure 11 shows the prevalence of the properties owned by companies with at least three risk indicators. These properties are concentrated in the central and western boroughs of Paris. The 7th *arrondissement* is one of the boroughs of Paris with the highest average square metre price in the city.

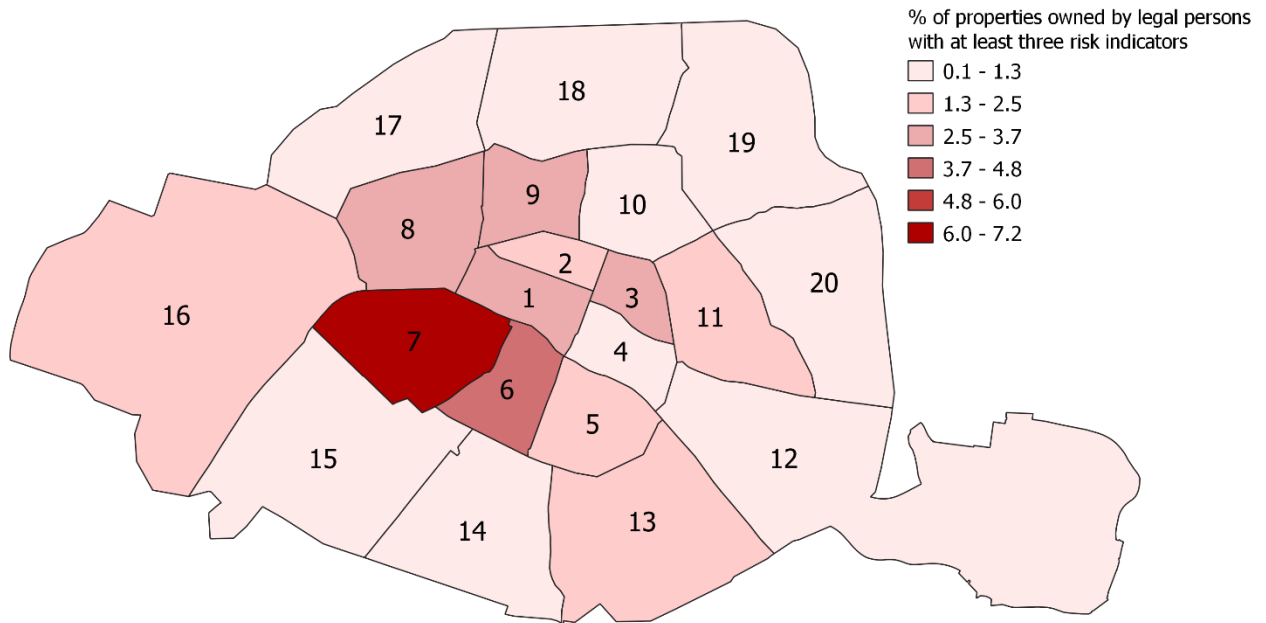
Table 7: Percentage of properties owned by legal persons with one or more risk factors (excl. financial enforcement), by sample

Risk factor	% Properties – main sample (N=504,975)	% Properties – excl. outliers (N=176,535)	% Properties – excl. local public ownership (N=200,385)
<i>At least one risk indicator</i>	48.0%	56.7%	53.6%
<i>At least two risk indicators</i>	4.9%	14.0%	11.7%
<i>At least three risk indicators</i>	1.0%	2.9%	2.6%
<i>At least four risk indicators</i>	0.01%	0.03%	0.03%

²⁵ All the risk factors presented in previous sub-sections were combined, except for *Ownership links with owners subject to financial enforcement*. This was because being subject to an enforcement

measure for a financial crime or being linked via ownership to entities targeted by such measures is suspicious in itself, even if the company does not display any other risk indicator.

Figure 11 Prevalence of properties owned by legal persons that have at least three risk indicators, by borough (main sample)



1. Louvre; 2. Bourse; 3. Temple; 4. Hôtel-de-Ville; 5. Panthéon; 6. Luxembourg; 7. Palais-Bourbon; 8. Elyseo; 9. Opéra ; 10. Entrepôt; 11. Popincourt; 12. Reuilly; 13. Gobelins; 14. Observatoire; 15. Vaugirard; 16. Passy; 17. Batignolles-Monceau; 18. Buttes-Montmartre; 19. Buttes-Chaumont; 20. Ménilmontant.

Note: Percentages are computed by borough based on the total number of properties located there.

Section 3. Conclusions and recommendations

This paper has reviewed and consolidated the knowledge produced to date by **empirical studies in the field of company (beneficial) ownership**, and it has discussed how to improve the **assessment of the related financial crime risks**. Some conclusions and considerations may be drawn, and they are discussed in the following subsections.

The lack of empirical research (but a promising future)

To date, few empirical analyses have been conducted in this domain. However, the number is increasing, primarily because of the growing accessibility and quality of data available from business registers, BO registers, and third-party providers. In other words, transparency of registers may benefit not only the activity of law enforcement agencies, FIUs, journalists and civil society watchdogs, but also scientific research by academic scholars, especially when registers are equipped with data feed and bulk data web-services.

The utility of empirical research in this field

What has been published to date demonstrates that the empirical study of

company ownership is useful for a variety of purposes:

- First, to gain better understanding of *who the owners of our economies are*, identify the **trends in terms of foreign investments and geopolitical influence** across sectors and regions, and the fiscal strategies employed by jurisdictions and companies, especially multinational ones;
- Second – which is crucial for the purposes of the CSABOT project – to **assess the risks of money laundering/terrorist financing, corruption and financial crimes**, and the possibility that companies may be exploited for criminal purposes.

In this latter domain, empirical research on company ownership can significantly help to identify how risks distribute across sectors, regions, and legal forms; it may also eventually provide empirical evidence to support national and supranational risk assessment exercises and regulatory developments in the AML/CFT field. It supports the intelligence of AML supervisory authorities, investigations by law enforcement and FIUs, and the watchdog activity of journalists and civil society organisations.

Risk indicators and the need for validation

The availability of lists of risk indicators related to company ownership is very useful for all the aforementioned stakeholders in this field. They enable the **early detection of companies at high risk** of being involved in financial crime, and of other illicit companies. Risk indicators are suggested by various sources, such as regulations, guidelines, police reports, and academic studies.

This paper has attempted to **rationalise and systematise these indicators**. However, it has also shown that only some of them have been empirically validated. Most of them have not been subjected to empirical tests, although they are universally adopted. In most cases, validation has been limited to selected countries or a few case studies. Future research in this field should pay more attention to testing the extent to which these red flags are in fact associated with criminal instances, for example by validating indicators against judicial or police evidence. This would not only serve to reduce the volume of false positives in investigations and customer due diligence, but would also make the AML activity of both public authorities and the private sector more efficient, fair and sustainable.

Innovative application of risk indicators

In an attempt to further expand the empirical analysis of company ownership anomalies, this paper has applied in an

innovative manner some of the risk indicators suggested by the literature to a selected sector (real estate) and region (the city of Paris) in Europe. The results of the analysis, presented in Section 3, confirm that:

- **The transparency of registers and their interoperability are very useful:** The analysis combined in an innovative manner the data from the French land registry (recently made public) and those from company and BO registers, as processed by a business information provider. Improving the accessibility of registers would further expand the possibility of data fusion and innovative analytics.
- **Analysing the ownership of companies is also useful for assessing the risk of other assets:** By analysing anomalies in the ownership structure of companies which own real estate properties, the paper has identified the risks associated with the real estate properties themselves. This paper is the first – at least to our knowledge – large-scale empirical assessment of the risks of real estate in Europe. While many publications (including National Risk Assessments [NRAs]) have stressed the vulnerability of this sector, empirical analyses are almost non-existent.

- **Analysing the ownership of companies is also useful to understand criminal risks (and socio-economic trends) of a particular geographical area:** By assessing the risk of properties (through analysis of the companies owning them), this paper has been able to highlight how risks are distributed across the 20 Paris *arrondissements*. For example, it has shown which are the boroughs with the highest prevalence of investments by PEPs, individuals and entities already targeted by enforcement measures, and entities registered in secrecy jurisdictions. This is crucial not only for improving monitoring and supervision by local AML authorities and tax agencies, but also for designing better urban and socio-economic policies. This is because, as already demonstrated in other countries (e.g. the UK) and European metropolitan cities (e.g. London, Berlin), the injection of foreign money of unknown origin may exert an inflationary effect on the real estate market prices, which may eventually have an impact in terms of the relocation of local inhabitants, especially elderly or less affluent residents.

Future research directions

An array of future research directions can be identified. First, as mentioned, it would be necessary to enrich the analysis by

accessing a wider range of sources. Specifically, in the case study of real estate in Paris, it would be useful to integrate data from the French BO registry to reduce the number of legal persons for which it was not possible to identify a BO.

Second, the analysis would benefit from combining company and real estate ownership data with local census information. This would make it possible to check the relationship between certain ownership and local socio-economic conditions, or whether foreign investments have generated certain positive or negative effects.

Third, it could be useful to test the indicators analysed here by drawing on criminal and justice statistics, for example the evidence provided by local law enforcement or FIUs.

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Annex 1. Anomalies related to BO and ownership structures

Table 8 List of anomalies related to BO and ownership structures

Anomaly	Soft law instruments, recommendations and institutional guidelines	Research studies				
		Reference	Empirical study	Geographical scope	Validation	
			Case Studies	Aggregate data		
COMPLEXITY OF OWNERSHIP STRUCTURES						
Anomalously complex ownership structure	FATF (2022a)	Bosisio et al. (2022)		✓	IT (Lombardy)	✗
	IADB and OECD (2019)	Knobel (2022)	✓		-	
	FATF (2014)	Riccardi (2022)		✓	Worldwide	✗
		Bosisio et al. (2021)		✓	EU, CH, UK	✓
		Jofre et al. (2021)		✓	BE, CY, ES, FR, UK, IT, LU, MT, NL	✓
		Knobel and Seabarron (2020)		✓	UK	✗
		European Commission (2019c)	✓		EU	
		FATF – Egmont Group (2018)	✓		Worldwide	

Anomaly	Soft law instruments, recommendations and institutional guidelines	Research studies				
		Reference	Empirical study	Geographical scope	Validation	
			Case Studies	Aggregate data		
		Savona and Riccardi (2018)	✓	✓	EU, UK, SM, GI, AD, BY, MC, LI, XK, TR, ME, BA, CH, MD, AL, RS, UA, MK, RU, IS, NO	✗
		Savona and Riccardi (2017)		✓	IT, NL, UK	✓
		Riccardi and Savona (2013)	✓		-	
		Does de Willebois et al. (2011)	✓		Worldwide	
		OECD (2001)	✓		-	
Circular ownership	✗	Knobel (2022)	✓		-	
		Jofre (2022)		✓	MT	✓
		Global Witness (2019)		✓	UK	✗
		T-Rank AS (2017)	✓		-	
Fragmented ownership	✗	Knobel (2022)	✓		-	
		Bosisio et al. (2022)		✓	IT (Lombardy)	✗
		FATF – Egmont Group (2018)	✓		Worldwide	
		Savona and Riccardi (2018)	✓		-	
		T-Rank AS (2017)	✓		-	
OWNERSHIP LINKS WITH ENTITIES IN HIGH-RISK JURISDICTIONS						
Ownership links with high-risk jurisdictions	FATF (2022a)	Knobel (2022)	✓		-	
	European Banking Authority (2021)	Bosisio et al. (2022)		✓	IT (Lombardy)	✗
		EBOCS Consortium (2021)		✓	EE, ES, IE, IT, LV, RO	✗

Anomaly	Soft law instruments, recommendations and institutional guidelines	Research studies				
		Reference	Empirical study		Geographical scope	Validation
			Case Studies	Aggregate data		
		Aziani et al. (2021)		✓	EU, UK, BY, TR, ME, BA, CH, MD, AL, RS, UA, MK, RU, IS, NO	✗
		Jofre et al. (2021)		✓	BE, CY, ES, FR, UK, IT, LU, MT, NL	✓
		Bosisio et al. (2021)		✓	EU, CH, UK	✓
		Janský et al. (2021)		✓	Worldwide	✗
		ICIJ (2021)	✓		Worldwide	
		Tax Justice Network (2020)		✓	Worldwide	✗
		Global Witness (2019)		✓	UK	✗
		FATF – Egmont Group (2018)	✓		Worldwide	
		Savona and Riccardi (2018)	✓	✓	EU, UK, SM, GI, AD, BY, MC, LI, XK, TR, ME, BA, CH, MD, AL, RS, UA, MK, RU, IS, NO	✗
		Savona and Riccardi (2017)		✓	IT, NE, UK	✓
		Angélico (2017)		✓	Sao Paulo (Brazil)	✗
		Garcia-Bernardo et al. (2017)		✓	Worldwide	✗
		ICIJ (2017a)	✓		Worldwide	
		ICIJ (2017b)	✓		Worldwide	
		Transparency International UK (2015)		✓		✗
		Ferwerda and Unger (2013)		✓	NL	✓
		Does de Willebois et al. (2011)	✓		Worldwide	

Anomaly	Soft law instruments, recommendations and institutional guidelines	Research studies				
		Reference	Empirical study	Geographical scope	Validation	
			Case Studies	Aggregate data		
EMPLOYMENT OF OPAQUE LEGAL VEHICLES AND MISSING INFORMATION ON BOs						
Ownership links with opaque corporate vehicles	European Banking Authority (2021)	Bosisio et al. (2022)		✓	IT (Lombardy)	✗
	IADB and OECD (2019)	Knobel (2022)	✓		-	
	FATF (2010)	Riccardi (2022)		✓	Worldwide	✗
	FATF (2006)	Jofre et al. (2021)		✓	BE, CY, ES, FR, UK, IT, LU, MT, NL	✓
		Bosisio et al. (2021)		✓	EU, CH, UK	✓
		Global Witness (2019)		✓	UK	✗
		Knobel (2019)	✓		-	
		FATF – Egmont Group (2018)	✓		Worldwide	
		Global Witness (2017)	✓		-	
		Knobel (2017)	✓		-	
		Transparency International UK (2015)		✓	UK	✗
		Riccardi and Savona (2013)	✓		-	
		Does de Willebois et al. (2011)	✓		Worldwide	
	OECD (2001)	✓		-		
Unavailability of BO information	European Banking Authority (2021)	Bosisio et al. (2022)		✓	IT (Lombardy)	✗
		Bosisio et al. (2021)		✓	EU, CH, UK	✓
		Jofre et al. (2021)		✓	BE, CY, ES, FR, UK, IT, LU, MT, NL	✓

Anomaly	Soft law instruments, recommendations and institutional guidelines	Research studies				
		Reference	Empirical study	Geographical scope	Validation	
			Case Studies	Aggregate data		
		Trautvetter (2021)		✓	DE (Berlin)	✗
		Szakonyi and Martini (2021)		✓	LU	✗
		Global Witness (2019)		✓	UK	✗
Use of bearer shares	FATF (2022a)	Knobel (2022)	✓		-	
	IADB and OECD (2019)	Martini and Murphy (2018)	✓		G20 countries	
		FATF – Egmont Group (2018)	✓		Worldwide	
		Does de Willebois et al. (2011)	✓		Worldwide	
		OECD (2001)	✓		-	
EMPLOYMENT OF NOMINEES						
Use of nominee shareholders and directors	FATF (2022a)	Knobel (2022)	✓		-	
	IADB and OECD (2019)	Martini and Murphy (2018)	✓		G20 countries	
		Savona and Riccardi (2018)	✓		Selected European countries	
		FATF – Egmont Group (2018)	✓		Worldwide	
		Does de Willebois et al. (2011)	✓		Worldwide	
		Soudijn (2010)	✓		NL	
		OECD (2001)	✓		-	
Anomalous age	European Banking Authority (2021)	Bosisio et al. (2022)		✓	IT (Lombardy)	✗
		Wrate et al. (2022)	✓		-	
		Global Witness (2019)	✓		UK	
		FATF – Egmont Group (2018)	✓		Worldwide	

Anomaly	Soft law instruments, recommendations and institutional guidelines	Research studies				
		Reference	Empirical study	Geographical scope	Validation	
			Case Studies	Aggregate data		
		Fazekas et al. (2016)	✓	-		
Anomalous gender distribution across owners	✗	Bosisio et al. (2022)		✓	IT (Lombardy)	✗
		Savona and Riccardi (2018)	✓	✓	IT	✗
		Fazekas et al. (2016)	✓		-	
		Soudijn (2010)		✓	NL	✗
Owner with an anomalous number of companies incorporated	✗	Bosisio et al. (2022)		✓	IT (Lombardy)	✗
		Global Witness (2019)		✓	UK	✗
		FATF – Egmont Group (2018)	✓		Worldwide	
Frequent ownership changes	European Banking Authority (2021)	Bosisio, Nicolazzo, and Riccardi (2021)		✓	IT	✗
		Italian Ministry of Interior (2021)		✓	IT	✗
		Fazekas et al. (2016)	✓		-	
OWNERSHIP LINKS WITH POLITICALLY EXPOSED PERSONS						
Presence of Politically Exposed Persons (PEP) in the ownership chain	FATF (2022a)	Bosisio et al. (2022)		✓	IT (Lombardy)	✗
	European Banking Authority (2021)	Bosisio et al. (2021)		✓	BE, CY, ES, FR, IT, LU, MT, NL	✗
	FATF (2013)	ICIJ (2021)	✓		Worldwide	
		Haberly (2020)		✓	Worldwide	✗
		Global Witness (2019)		✓	UK	✗

Anomaly	Soft law instruments, recommendations and institutional guidelines	Research studies			
		Reference	Empirical study	Geographical scope	Validation
			Case Studies	Aggregate data	
		FATF – Egmont Group (2018)	✓	Worldwide	
		ICIJ (2017a)	✓	Worldwide	
		ICIJ (2017b)	✓	Worldwide	
		Does de Willebois et al. (2011)	✓	Worldwide	
		Choo (2008)	✓	-	
OWNERSHIP LINKS WITH ENTITIES INVOLVED IN ADVERSE EVENTS					
Company or owners or linked entities subject to sanctions, enforcements or investigations	European Banking Authority (2021)	Bosisio et al. (2022)		IT (Lombardy)	✗
		Bosisio et al. (2021)		BE, CY, ES, FR, IT, LU, MT, NL	✗
		Baquero et al. (2021)	✓	LU	
		FATF – Egmont Group (2018)	✓	Worldwide	
Presence of adverse media	European Banking Authority (2021)	FATF – Egmont Group (2018)	✓	Worldwide	
Owner mentioned in Offshore Leaks	✗	Bosisio et al. (2022)		IT (Lombardy)	✗

Annex 2. Methodological details and additional results

Figure 12 Distribution of companies in terms of number of properties owned (outliers circled in red)

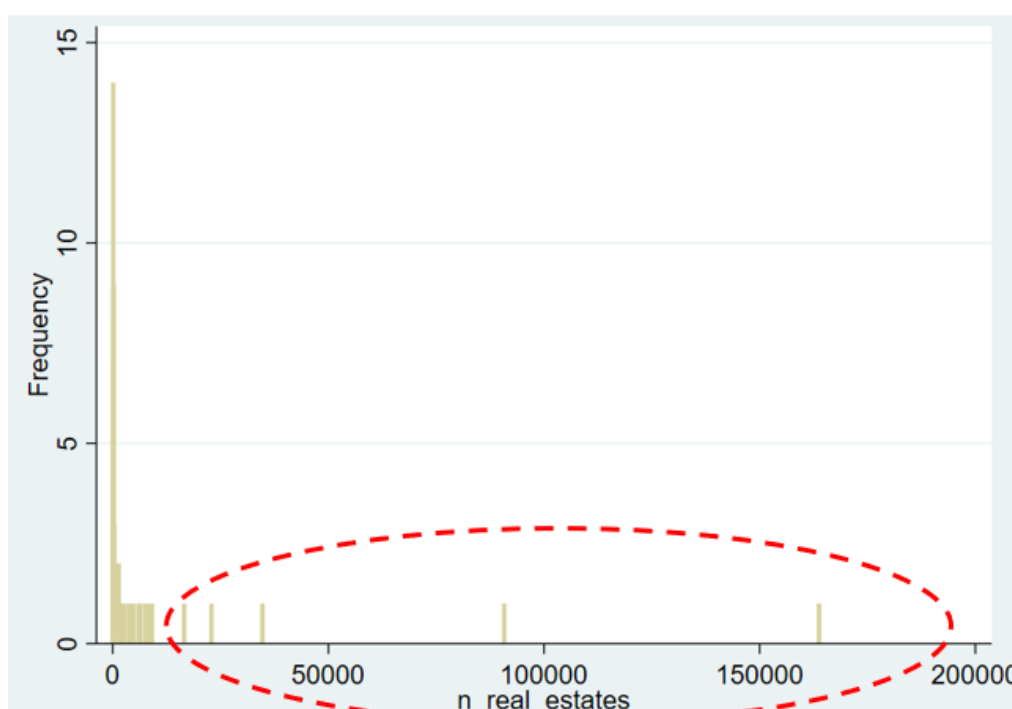


Table 9 Top 10 legal persons in terms of number of real estate (identified among the initial sample of 115,312 companies)

Name	Legal form	N. real estate	Included in the main sample (4,499 companies)	Outlier
PARIS HABITAT-OPH	Établissement public à caractère industriel et commercial	163,760	✓	✓
VILLE DE PARIS	Collectivité territoriale/Région	123,654	x	
REGIE IMMOBILIERE DE LA VILLE DE PARIS	société anonyme	90,757	✓	✓
ELOGIE - SIEMP	société anonyme	34,719	✓	✓
IMMOBILIERE 3F	société anonyme	22,880	✓	✓
ICF LA SABLIERE SA DHLM	société anonyme	16,558	✓	✓
INLI	société anonyme	9,088	✓	x

Name	Legal form	N. real estate	Included in the main sample (4,499 companies)	Outlier
1001 VIES HABITAT	société anonyme	8,241	✓	x
CDC HABITAT	Société d'économie mixte	8,175	✓	x
GEC 25	société par actions simplifiée	7,775	✓	x

Table 10 Distribution of real estate properties by borough

Borough	All real estate (N=945,216)		Real estate analysed in this study (N=504,975)	
	Freq.	% (on total of 945,216 real estate)	Freq.	% (on total of 504,975 real estate)
Louvre (1)	12,496	1.3%	4,744	0.9%
Bourse (2)	15,193	1.6%	3,685	0.7%
Temple (3)	14,838	1.6%	4,317	0.9%
Hôtel-de-Ville (4)	12,849	1.4%	4,895	1.0%
Panthéon (5)	18,688	2.0%	6,177	1.2%
Luxembourg (6)	19,920	2.1%	3,933	0.8%
Palais-Bourbon (7)	24,007	2.5%	4,609	0.9%
Elysée (8)	36,817	3.9%	8,154	1.6%
Opéra (9)	28,188	3.0%	8,617	1.7%
Entrepôt (10)	37,783	4%	17,561	3.5%
Popincourt (11)	52,591	5.5%	24,031	4.8%
Reuilly (12)	56,963	6.0%	35,844	7.1%
Gobelins (13)	92,160	9.8%	70,305	13.9%
Observatoire (14)	56,562	6.0%	34,126	6.8%
Vaugirard (15)	98,254	10.4%	55,035	10.9%
Passy (16)	63,226	6.7%	16,585	3.3%
Batignolles-Monceau (17)	63,368	6.7%	29,448	5.8%
Buttes-Montmartre (18)	67,993	7.2%	40,696	8.1%
Buttes-Chaumont (19)	87,589	9.3%	66,689	13.2%
Ménilmontant (20)	85,731	9.1%	65,524	13.0%
Total	945,216	100%	504,975	100%

Table 11 Risk indicators computed at company level (detailed description)

Category/risk indicator	Description	Type (range)	Data source
Complexity of ownership structures	The indicator shows the extent to which a legal person has a vertically or horizontally complex ownership structure. The indicator is computed by adopting as reference the distribution of	Ordinal (from 1 to 5)	Bureau Van Dijk (Orbis)

Category/risk indicator	Description	Type (range)	Data source
	vertical/horizontal complexity observed in all European companies of similar size and engaged in a similar economic activity. Vertical complexity is defined as the distance separating the legal person from its furthest ultimate control (the threshold used to identify the beneficial ownership is 10% at any level). Horizontal complexity is defined as the number of intermediaries in the ownership structure (the threshold used to identify relevant intermediaries is 10% at any level). The indicator varies from 1 to 5, where 5 indicates highest risk, and 1 the lowest.		
Employment of opaque legal vehicles and missing information on BOs	The indicator equals 5 if at least one OUB of the legal person is a trust or some other opaque legal vehicle (e.g., mutual, pension fund) for which no BO are identified; 1 otherwise.	Binary (1;5)	Bureau Van Dijk (Orbis)
Ownership links with entities from high-risk jurisdictions	<i>Ownership links with blacklisted and grey listed jurisdictions</i> The indicator equals 5 if at least one of the intermediate shareholders of the legal person is registered in a jurisdiction included in official black- or greylists issued by FATF and the EU; 1 otherwise. The FATF lists considered include “High-Risk Jurisdictions subject to a Call for Action” (blacklist), and “Jurisdictions under Increased Monitoring” (greylist), last updated in March 2022. The EU black/greylists considered include non-cooperative jurisdictions for tax purposes and were last updated on 24 February 2022.	Binary (1; 5)	Bureau Van Dijk (Orbis), FATF (black/grey list), EU (black/grey list)
	<i>Ownership links with top 30 secrecy jurisdictions according to SS</i> The indicator equals 5 if at least one of the intermediate shareholders of the legal person is registered in a jurisdiction included in the top 30 countries of the Secrecy Score Index 2022 developed by Tax Justice Network; 1 otherwise.	Binary (1;5)	Tax Justice Network (FSI), Bureau Van Dijk (Orbis)
Employment of nominees	<i>Anomalous age</i> The indicator equals 5 if at least one BO of the legal person was born before 1942 or after 2004, thus flagging the risks of the presence of too young or too old BOs or directors. In all other cases, the indicator takes the value of 1.	Binary (1; 5)	Bureau Van Dijk (Orbis)
Ownership links with politically exposed persons	The indicator equals 5 if at least one BO of a legal person is a PEP, family member or close associate of the PEP as defined by WorldCompliance; 1 otherwise. WorldCompliance adopts a definition of PEP in line with FATF standards, including individuals who are currently entrusted or who were previously entrusted with prominent public functions within their national governments or who are or were tasked with representing their	Binary (1; 5)	Lexis Nexis (WorldCompliance), Bureau Van Dijk (Orbis)

Category/risk indicator	Description	Type (range)	Data source
	governments in foreign relations. Family members are relatives, as well as individuals who are related to PEPs by heredity, marriage, or civil partnership. Close associates are individuals who are socially or politically connected to the PEP, members of state-owned enterprises, members of sovereign wealth funds and businesses that are controlled by the PEP.		
Ownership links with entities involved in adverse events	<i>Financial enforcement</i>	Binary (1; 5)	Lexis Nexis (World Compliance, Bureau Van Dijk (Orbis)
	<i>Ownership links with entities mentioned in Offshore Leaks</i>	Binary (1; 5)	ICIJ (Offshore Leaks Database), Bureau Van Dijk (Orbis)

Table 12 Risk indicators computed at the property level

Case	Computation of the indicator at the property level	Example
Case A: the property is owned by one legal person only	The level of risk of the property is equal to the value of the indicator attributed to the legal person.	For example, imagine that property A is owned by company Alpha and that the latter scores 5 on <i>Ownership structure complexity</i> . Property A is thus attributed a score of 5.
Case B: the property is owned by more than one legal person²⁶	The level of risk of the property is equal to the maximum value of the indicator attributed to the legal persons.	Imagine that property B is owned by companies Beta and Gamma. The companies respectively score 5 and 3 on <i>Ownership structure complexity</i> . Property B is thus attributed a score of 5.

²⁶ Out of 504,975 properties, 68.7% are owned by a single legal person; the remaining 31.3% by more than one legal person (up to 6).

Table 13 Risk indicators related to outlier companies (N=5) and those with local public ownership (N=21)

Name of the company ('anonymised')	Outlier	With local public ownership	Risk indicators
Company 1	✓	✓	Complexity of ownership structure
Company 2	✓	✓	None
Company 3	✓	✓	Complexity of ownership structure
Company 4	✓	✗	Complexity of ownership structure
Company 5	✓	✗	None
Company 6	✗	✓	Complexity of ownership structure, Employment of opaque legal vehicles and missing information on BOs
Company 7	✗	✓	Complexity of ownership structure
Company 8	✗	✓	Complexity of ownership structure
Company 9	✗	✓	None
Company 10	✗	✓	None
Company 11	✗	✓	Complexity of ownership structure
Company 12	✗	✓	Complexity of ownership structure
Company 13	✗	✓	None
Company 14	✗	✓	Complexity of ownership structure
Company 15	✗	✓	Complexity of ownership structure
Company 16	✗	✓	None
Company 17	✗	✓	Complexity of ownership structure
Company 18	✗	✓	Complexity of ownership structure
Company 19	✗	✓	Complexity of ownership structure
Company 20	✗	✓	None
Company 21	✗	✓	None
Company 22	✗	✓	None
Company 23	✗	✓	Complexity of ownership structure

Table 14 Percentage of companies with the highest risk factors, by sample

Risk factor	% Companies – main sample	% Companies – excl. outliers	% Companies – excl. local public ownership
Single indicators			
Complexity of the ownership structure	18.5% (out of 4,499)	18.4% (out of 4,494)	18.3% (out of 4,478)
Ownership links with blacklisted and greylisted jurisdictions	1.4% (out of 4,294)	1.4% (out of 4,289)	1.4% (out of 4,273)
Ownership links to top 30 secrecy jurisdictions according to the SS	1.6% (out of 4,292)	1.6% (out of 4,287)	1.6% (out of 4,271)

Risk factor	% Companies – main sample	% Companies – excl. outliers	% Companies – excl. local public ownership
<i>Employment of opaque legal vehicles and missing information on BOs</i>	4.0% (out of 4,499)	4.0% (out of 4,494)	4.0% (out of 4,478)
<i>Anomalous age</i>	8.7% (out of 2,314)	8.7% (out of 2,314)	8.7% (out of 2,314)
<i>Ownership links with politically exposed persons</i>	6.5% (out of 3,557)	6.5% (out of 3,557)	6.5% (out of 3,557)
<i>Ownership links with entities mentioned in Offshore Leaks</i>	1.7% (out of 4,499)	1.7% (out of 4,494)	1.7% (out of 4,478)
<i>Ownership links with owners subject to enforcement for financial crimes</i>	0.9% (out of 4,499)	0.9% (out of 4,494)	0.9% (out of 4,478)
Combination of risk indicators (excl. financial enforcement)			
<i>At least one risk indicator</i>	26.0% (out of 4,499)	26.0% (out of 4,494)	25.9% (out of 4,478)
<i>At least two risk indicators</i>	8.2% (out of 4,499)	8.2% (out of 4,494)	8.2% (out of 4,478)
<i>At least three risk indicators</i>	2.0% (out of 4,499)	2.0% (out of 4,494)	2.0% (out of 4,478)
<i>At least four risk indicators</i>	0.3% (out of 4,499)	0.3% (out of 4,494)	0.3% (out of 4,478)

Note: The percentages presented were computed considering only legal persons with available information needed to calculate each indicator, shown in brackets.

Table 15 No. of real estate owners ultimately owned by national or foreign governments

Government owner - nationality	No. companies owned
France	116
Canada	19
Singapore	14
Qatar	12
China	8
Norway	4
The Netherlands	3
Sweden	3
Iran	2
Kuwait	2
Angola	1
Algeria	1
Finland	1
Italy	1
Luxembourg	1
Morocco	1
Pakistan	1
Tunisia	1
South Africa	1

Civil Society Advancing Beneficial Ownership Transparency

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