Venezia - December 3, 2024

CRIF
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The use of ESG data in SME and credit analysis

WP1 - CRIF Work progress

Finanziato dall'Unione europea NextGenerationEU
Ministero dell'Università e della Ricerca
Italiadomani

Agenda

1. **Introduction**
2. Correlation between ESG and lending
3. ESG profile analysis of the Veneto region SMEs
4. The importance and power of data

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Introduction

Reference context

In a **political** and **regulatory context**, where the concept of **sustainability** is becoming **increasingly relevant**, **different projects** have been launched relating to the **integration** of **ESG factors** into **credit parameters**

The **ESG issue** represents an **important challenge** and it is **reflected** in a **regulatory framework context** (in particular: EBA Report on E&S Risks, CE Proposal ESG Rating 2023/314, EU Parliament Amendment 2023/314, CRR Amendments)

In order to include **sustainability drivers** (ESG) in **business decisions**, it is crucial to have **accurate** and **robust** information

Objectives

Based on **market evidence** and several **use cases**, CRIF presents its study on the **relationship between ESG and loans**, with a focus on the sustainability profile of **Veneto companies**, highlighting the potential of accurate and granular data. Some of these analyses were also made possible thanks to the collaboration of RED RISK

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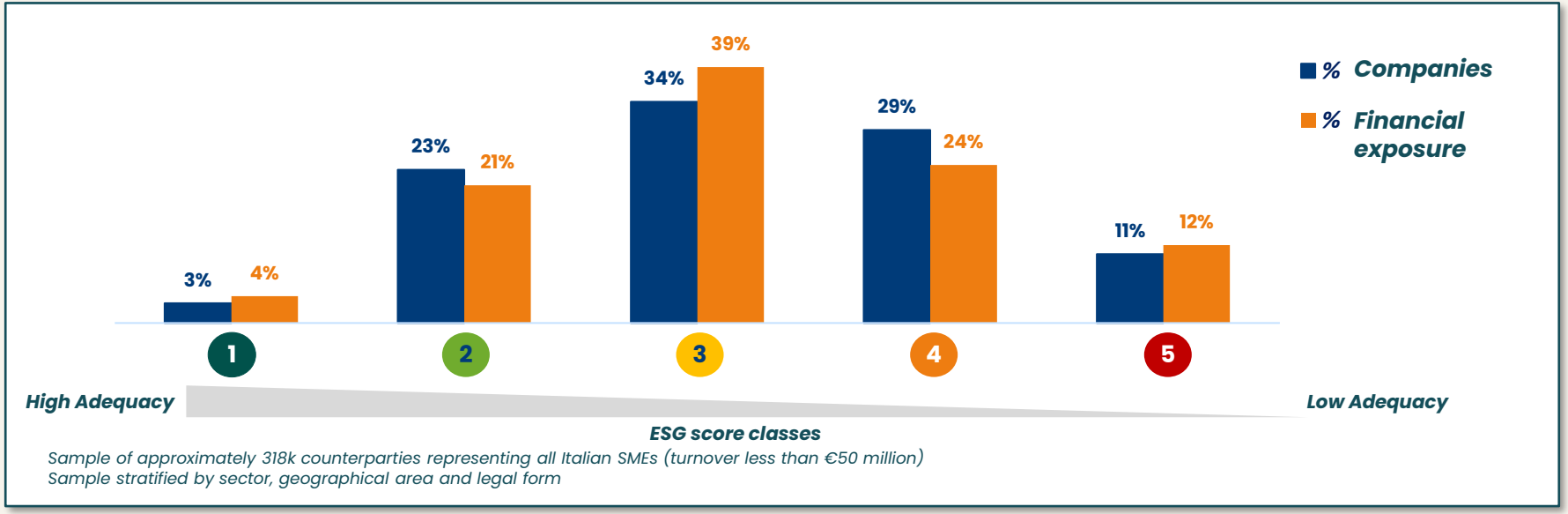
SMEs stock distribution by ESG score classes

Observatory on Italy

In the **distribution** of the **SMEs analyzed**, approximately **26% of companies** are observed in the **low** and **very low ESG score classes** and **40%** in the **high** and **very high ESG score classes**. Moving from the number of companies to the share of loans disbursed, we observe how the **financial exposures are distributed** in an almost **symmetrical manner**



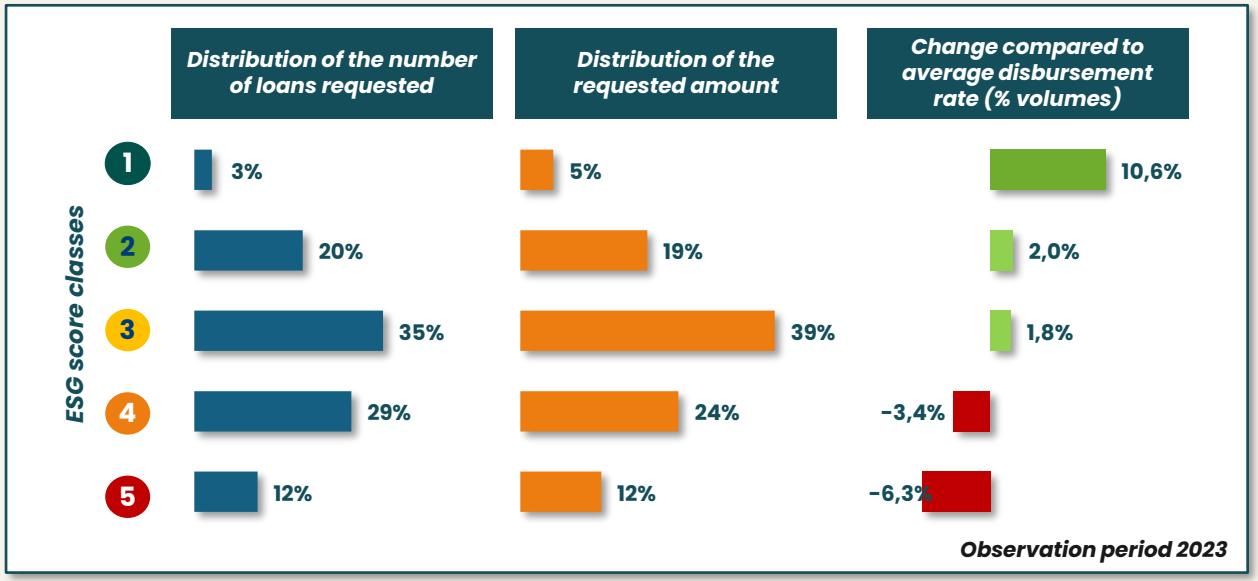
Sample of approximately 318k counterparties representing all Italian SMEs (turnover less than €50 million)
Sample stratified by sector, geographical area and legal form

* These analyses were made possible thanks to the collaboration of RED Risk

Credit policies and ESG score

Observatory on Italy

Observing the **2023 CRIF data** relating to the **disbursement** of **loans** to **Banks** in the Italian system, it is **highlighted** that **companies** with **ESG scores** with **high adequacy** (high or very high score) are more **advantaged** in terms of **access to credit**



Note

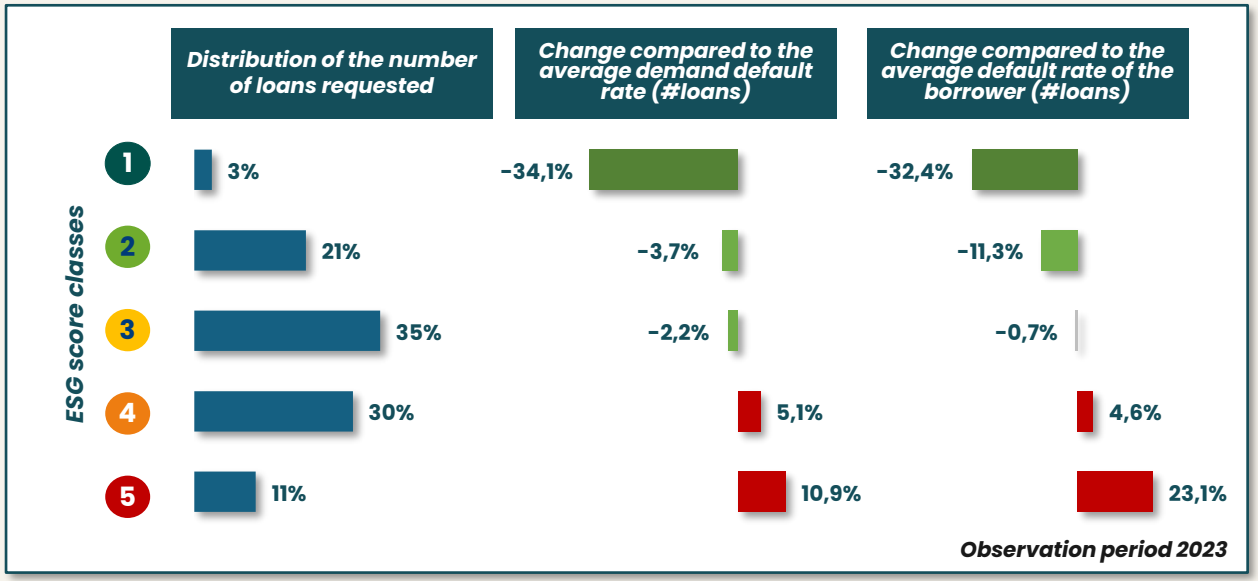
- The **amount requested** is **independent** of the **level** of **ESG adequacy**
- The **amount paid** is **highly dependent** on the **level** of **ESG adequacy**

* These analyses were made possible thanks to the collaboration of RED Risk

Credit risk and ESG score

Observatory on Italy

Analyzing the **default rates** in the **banking system**, **companies** with a **high ESG score adequacy** (high or very high score - classes 1 and 2) **appear less risky than** the **average** of the **sample analyzed**



Note

- **ESG score efficiently discriminates** the **risk level** of **companies requesting credit**
- The **report** is **confirmed** on the **post-acceptance portfolio**

* These analyses were made possible thanks to the collaboration of RED Risk

Correlation between credit risk and ESG score

Observatory on Italy

Below is a **correlation analysis** carried out **between** the **ESG score** and **CRIF credit risk indicator**

Standard risk areas credit risk indicator

Bad Rate (%)	High risk	Medium risk	Low risk
Low Adequacy	28,1%	2,6%	0,9%
Medium	28,6%	2,5%	0,8%
High Adequacy	27,1%	1,9%	0,8%

ESG score

Default rate levels

Note

- **Strong correlation** between **ESG score levels** and **credit risk**
- The **ESG adequacy levels** enable the **improvement** of the **discrimination capacity** by **streamlining** the **sorting** of the **population in line** with the **credit risk**

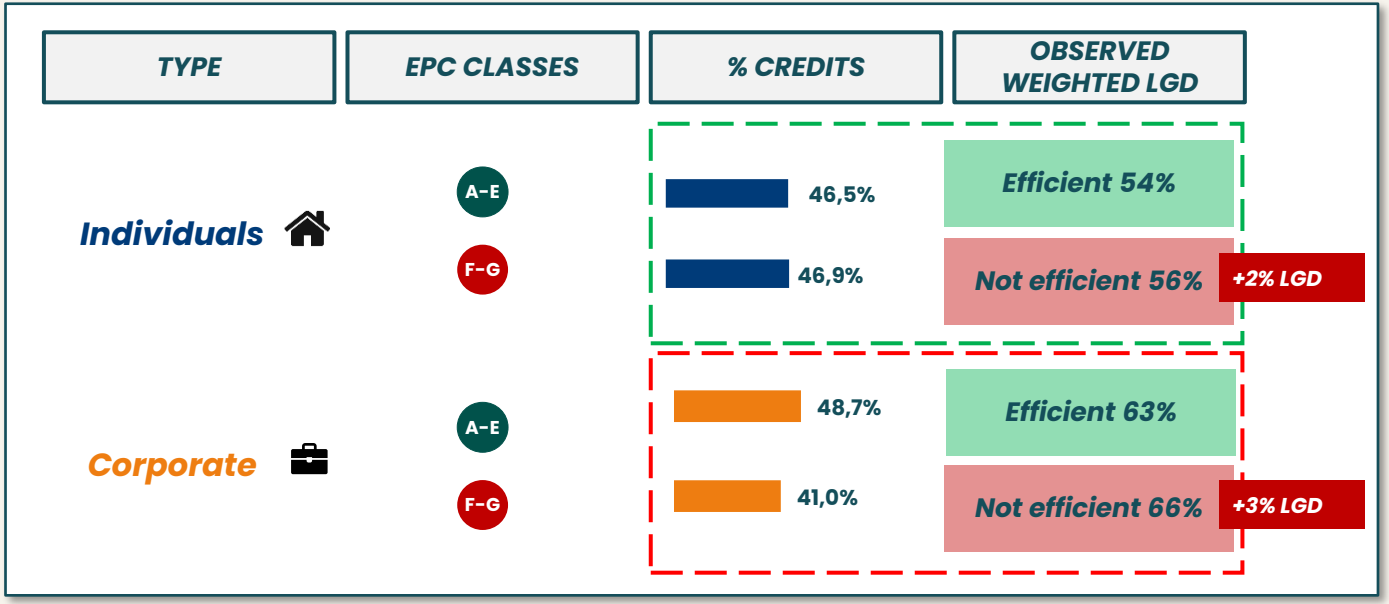
* These analyses were made possible thanks to the collaboration of RED Risk

Some use cases...

Correlation of energy efficiency classes and LGD

USE CASE 1

Among the **counterparties analyzed**, both **individuals** and **businesses**, there is a **strong correlation** between the **levels of energy efficiency** (EPC) and the **estimates of expected losses** (LGD) on the **Bank's NPL portfolio**

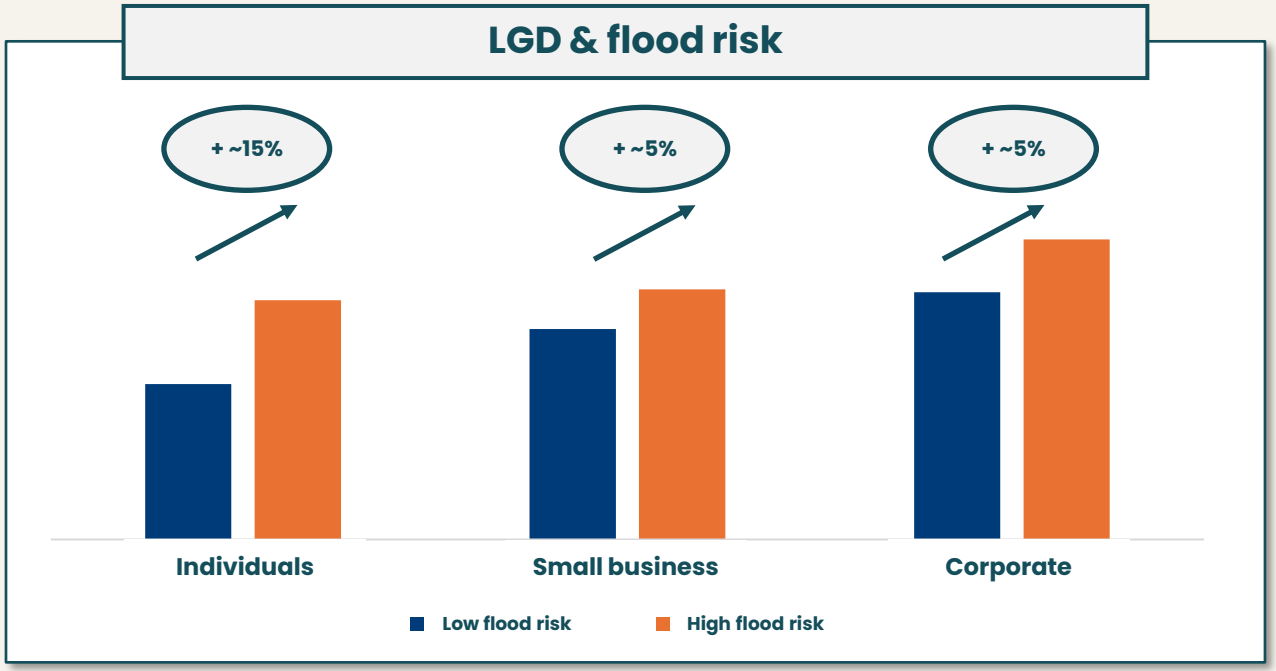


Note

- **Strong correlation** between **estimates** of **expected losses** (LGD) **on credits** and the **energy efficiency levels of collateral**
- **Energy-efficient collateral generates low loss estimates** on the portfolio

Correlation of flood risk and LGD

USE CASE 2



Note

- Exposures with **low physical risk** (flood risk) **generate reduced loss estimates** for the portfolio
- The **correlation** between **ESG risks** and **credit risk** is starting to be **significant**, **enabling integration into regulatory** and **management LGD parameters**

* These analyses were made possible thanks to the collaboration of RED Risk

Correlation of flood risk and PD

USE CASE 3

Delta in default levels in areas affected by flood

Note

- The **correlation** between **ESG risks** and **credit risk** is starting to be **significant**, **enabling integration into regulatory** and **management PD parameters**

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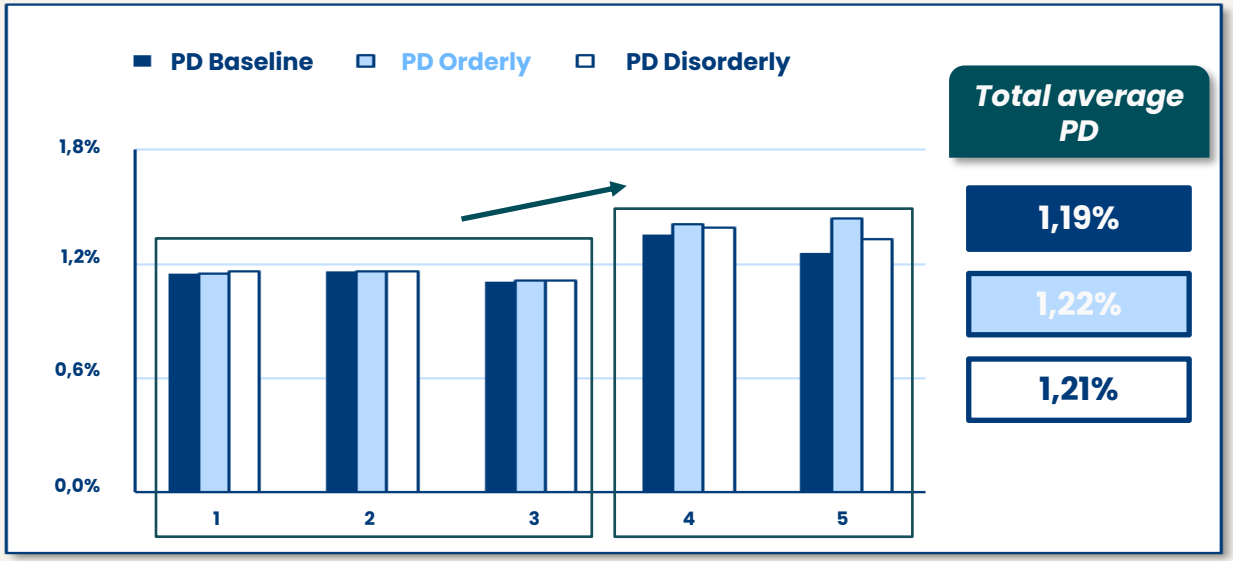
Correlation of transition risk and PD

USE CASE 4

The **discriminatory power** of the **transition risk variable** respect to the **probability of default** of the **Bank's business portfolio** is reported, **comparing** the **impacts** of the **different stress scenarios** on the **Bank's lifetime PDs**



Note

- **Counterparties** in **classes 4-5** present a **higher level** of **default risk**
- **Strong correlation** between **transition score levels** and the **probability of default**
- The **impact** of the **delta scenario** on **PD** is **minimal** in score **classes 1, 2** and **3** while it is **more intense** in **bands 4** and **5**

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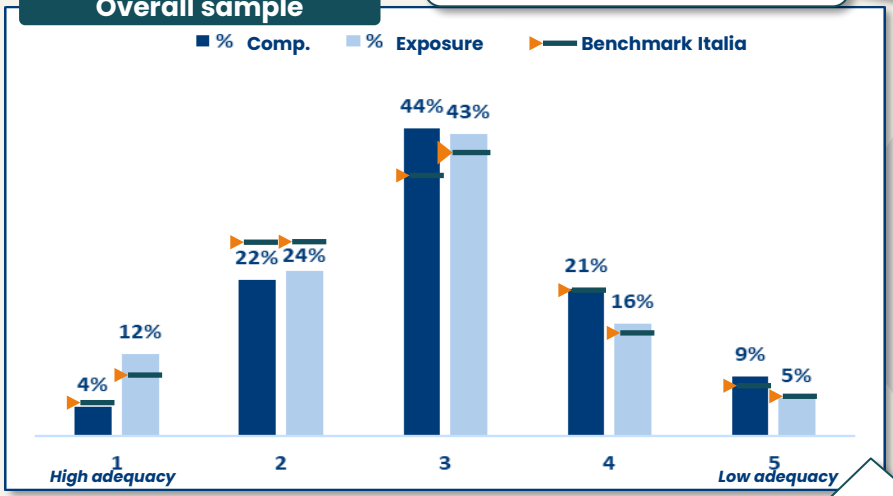
ESG Score

The distribution of the **ESG score** over the **number of companies** and **financial exposure** value is shown below

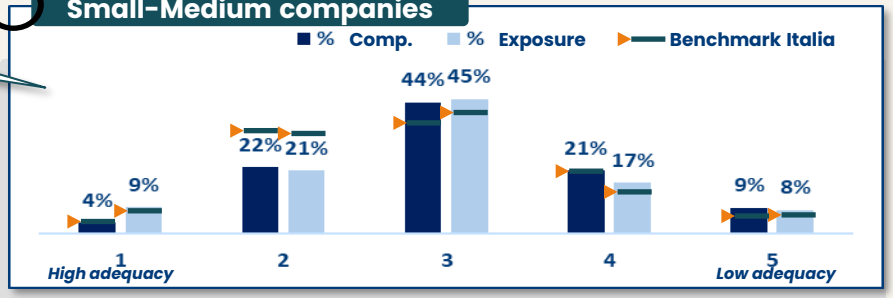
Smaller companies are on average less ESG-friendly

Focus of this document

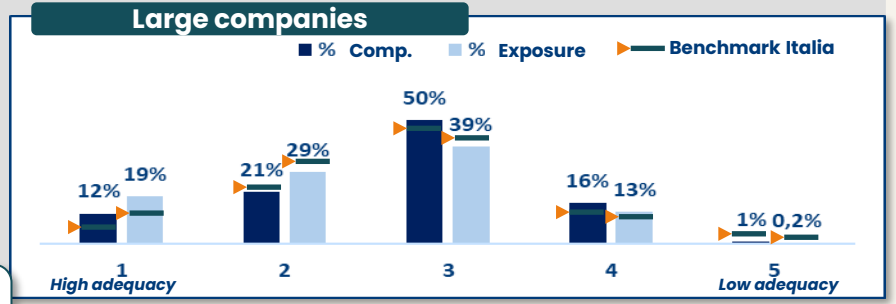
Overall sample



Small-Medium companies



Large companies



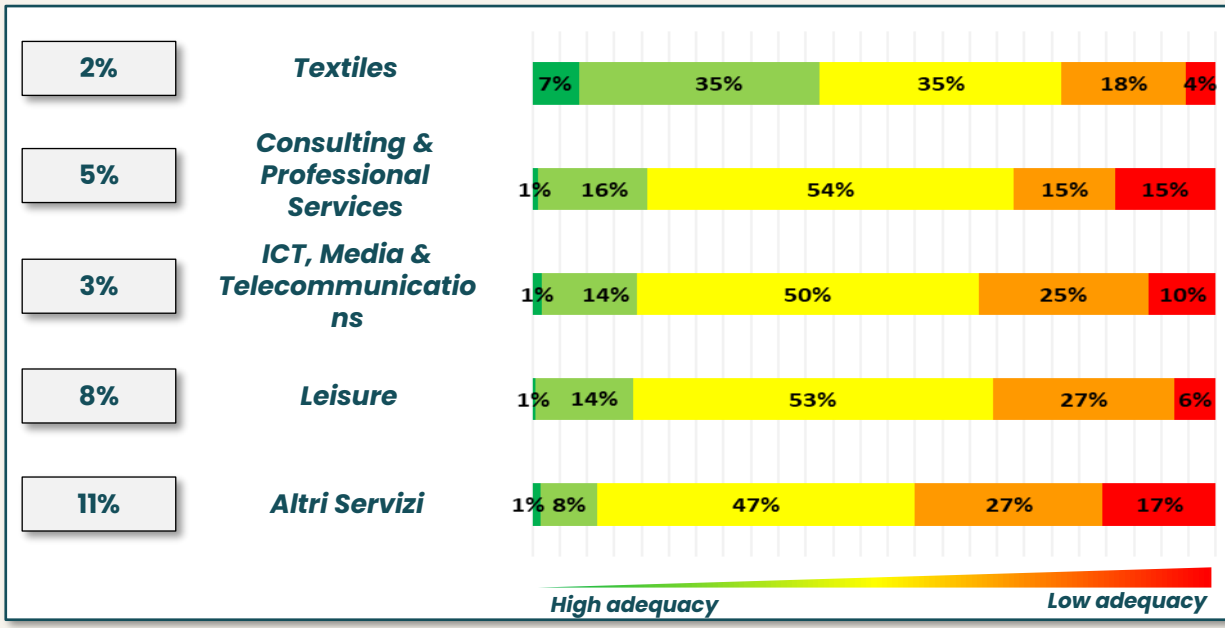
The overall distribution is more influenced by the behaviour of SMEs than large enterprises

* These analyses were made possible thanks to the collaboration of RED Risk

ESG Score - Distribution by Sector

FOCUS SMEs

The **ESG score** distribution of the **five sectors with the best adequacy** profile is shown below



HIGHLIGHTS

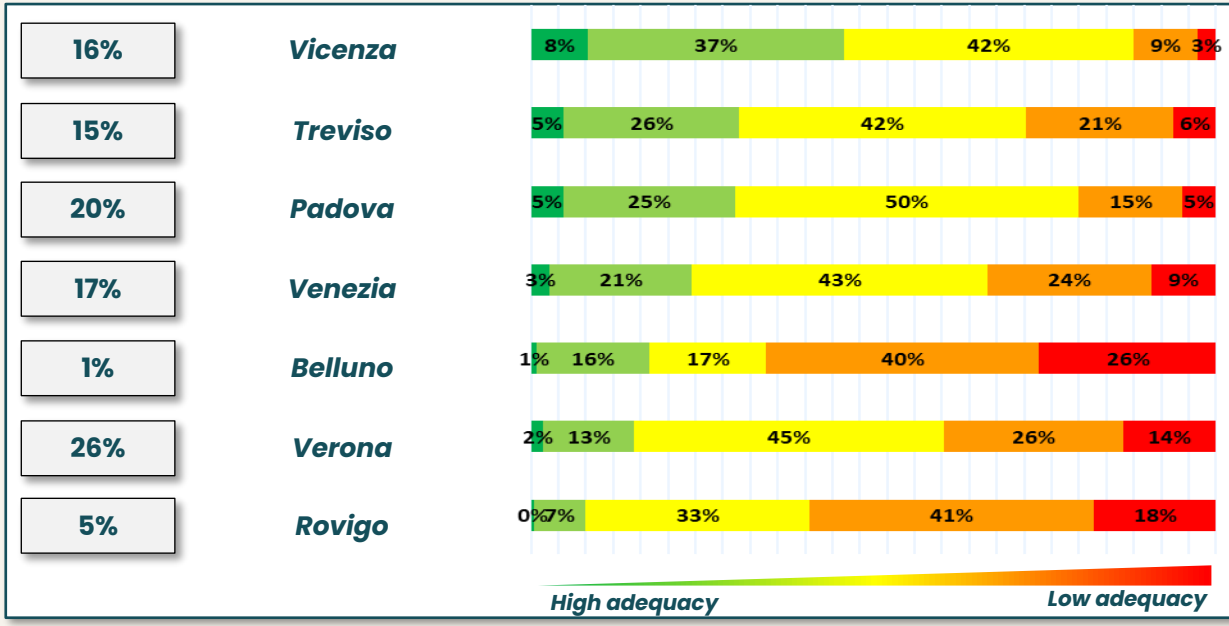
- The **most adequate sectors** from an ESG perspective are mainly related to the sector of **Services**, mainly **due to the Environmental component** having a high degree of adequacy within the mentioned sectors (mainly due to the low transition risk score)
- Among the sectors represented, there is a **lower degree of adequacy** in the **Leisure** sector **driven by the Governance component**

* These analyses were made possible thanks to the collaboration of RED Risk

ESG Score - Province Distribution

FOCUS SMEs

The **ESG score** distribution of the **Veneto provinces** sorted by **highest adequacy** values is shown below



HIGHLIGHTS

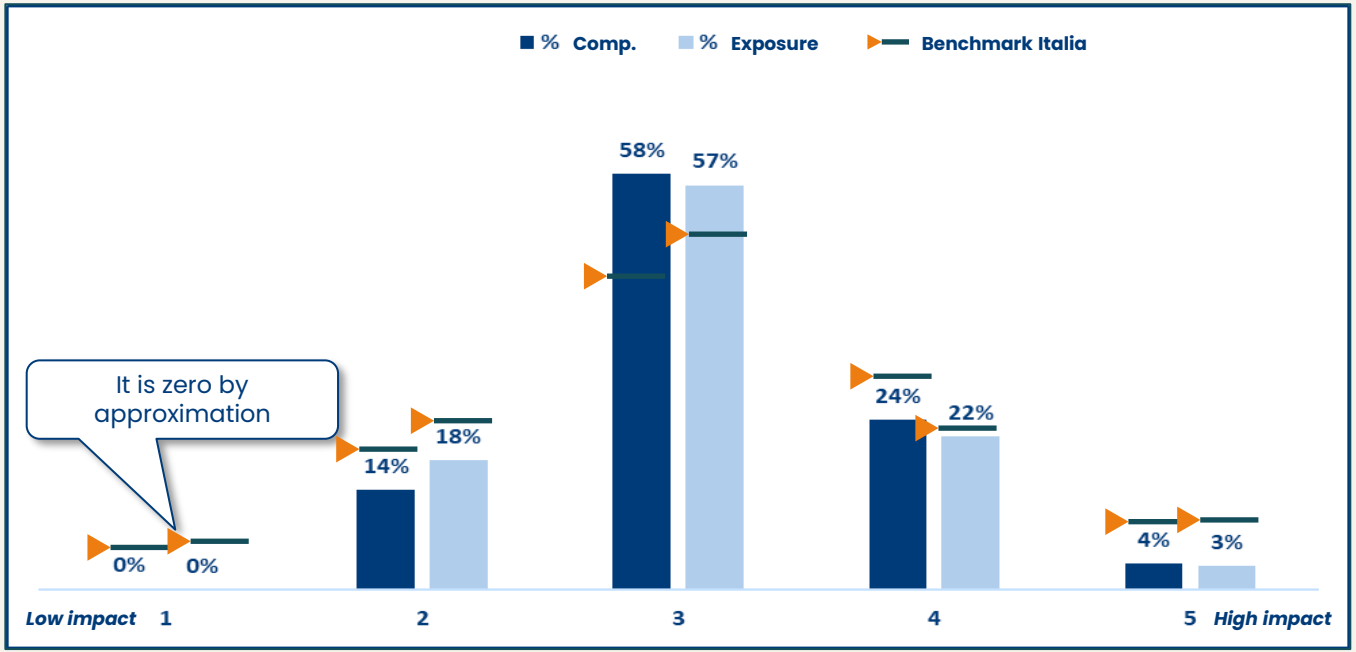
- The provinces with the best ESG profile (classes 1 and 2) are Vicenza, Treviso and Padua
- **The high degree of adequacy depends mainly on a low Environmental component score (physical risk score in particular)**
- The provinces of Belluno and Rovigo appear to have a worse ESG profile (class 4 and 5)
- The latter provinces are **negatively affected by the Environmental component, especially the physical risk**

* These analyses were made possible thanks to the collaboration of RED Risk

Physical Risk Score

FOCUS SMEs

The **ESG score distribution** of the Veneto provinces **sorted by highest adequacy** values is shown below



HIGHLIGHTS

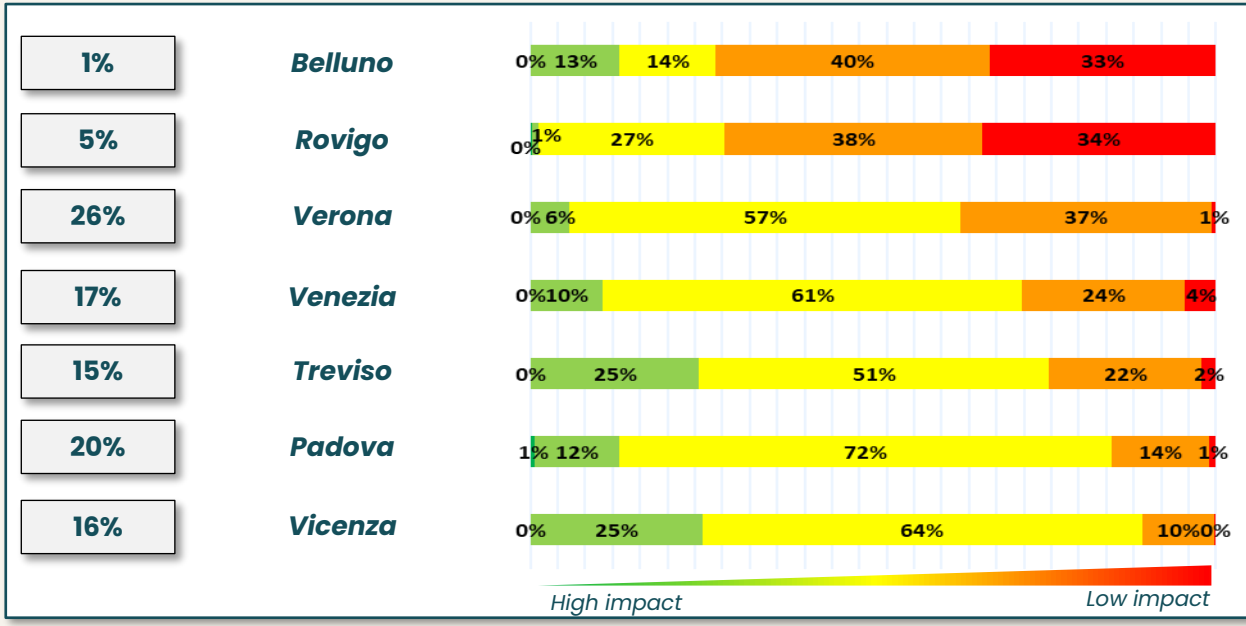
- 28% of counterparties is affected by high physical risk (classes 4 and 5)
- **Compared to the Italian market, companies in the Veneto region are less affected by high physical risk, with a higher concentration in the middle class**
- For those companies most exposed to physical risk, a **path to awareness of these components through adaptation activities must be undertaken**, so making the expected structural impacts less severe

* These analyses were made possible thanks to the collaboration of RED Risk

Physical Risk Score – Province distribution

FOCUS SMEs

The distribution of the **Physical Risk score** per province **sorted by highest risk** values is shown below



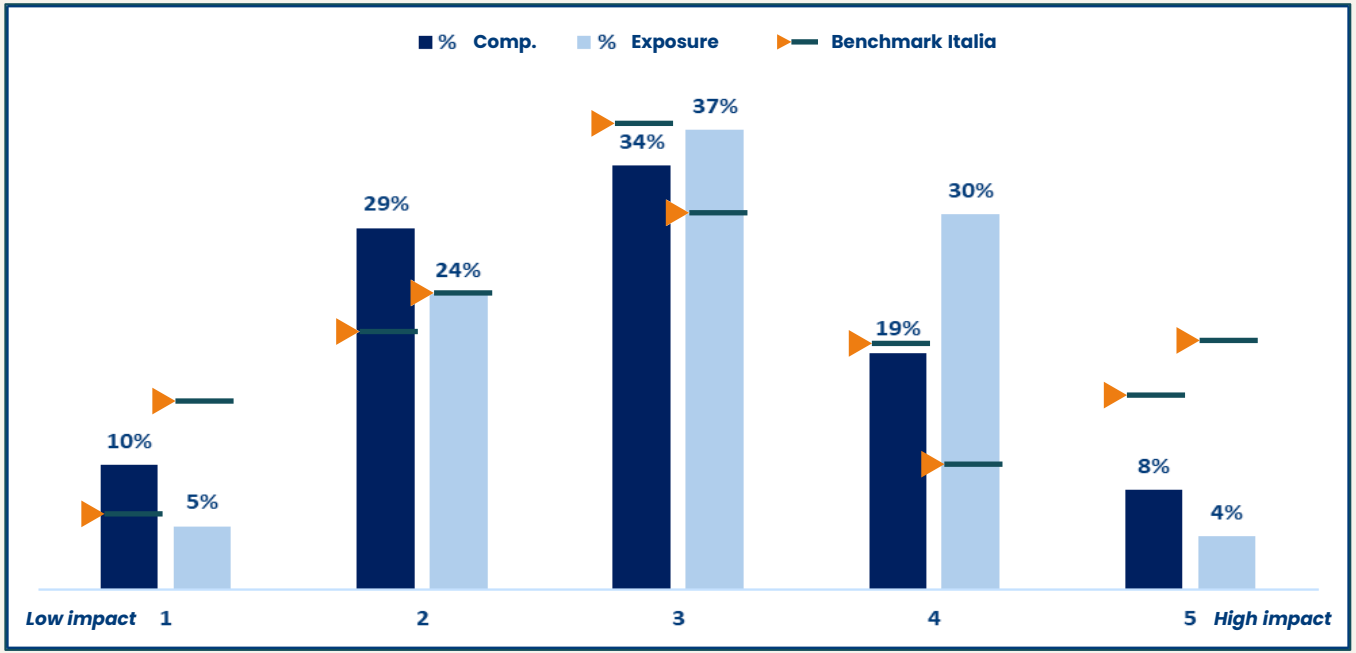
- The provinces most exposed to physical risk are Belluno and Rovigo, where the percentage of companies with physical risk scores in the worst classes (4 and 5) exceeds 70%
- In general, **the Veneto region is exposed to risk factors peculiar to the geographical area**, such as **earthquakes** (Belluno is in a highly seismic zone), **floods**, **heavy rainfall** and **rising sea levels** (especially in the province of Venice and coastal areas)

* These analyses were made possible thanks to the collaboration of RED Risk

Transition Risk Score

FOCUS SMEs

The distribution of **Transition Risk score** over the **number of companies** and **financial exposure** is shown below



HIGHLIGHTS

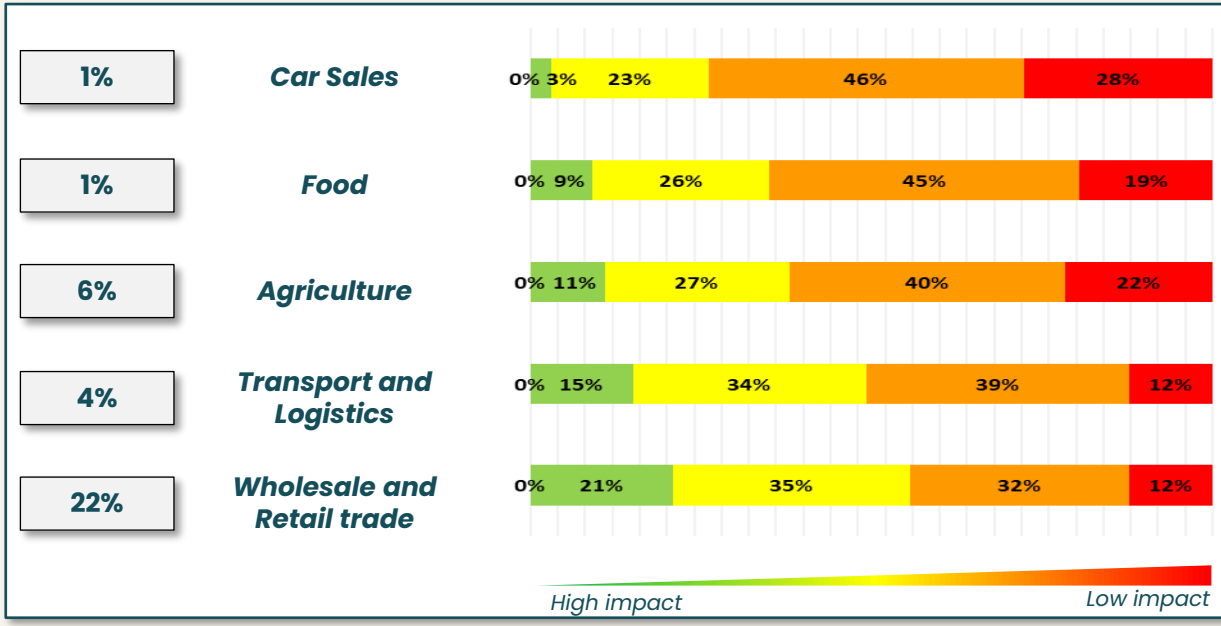
- The transition score shows a mostly counterparty and exposure in the lowest impact classes (1,2,3)
- **Compared to the market, Veneto has fewer companies in the highest impact classes (4, 5)**
- As expected, **companies most exposed to transition risk need more investment to cope with the sustainable transition process**
- From the figure, it can be seen that financial debt is one of the ways taken to deal with this type of investment

* These analyses were made possible thanks to the collaboration of RED Risk

Transition Risk Score – Distribution by Sector

FOCUS SMEs

The distribution of **Transition Risk score** of the **five most exposed sectors** is shown below



- The sectors most vulnerable to transition risk are «**car sales**», «**food**» and «**agriculture**»
- The high impact on these sectors can be identified under several drivers:

➢ For the agricultural sector in the increased costs of **switching from the use of chemicals to less polluting products**

➢ In car sales in the **adaptation of fossil-fueled automotive assets**

➢ In the food sector in the **change of available raw materials that will lead to new eating habits**

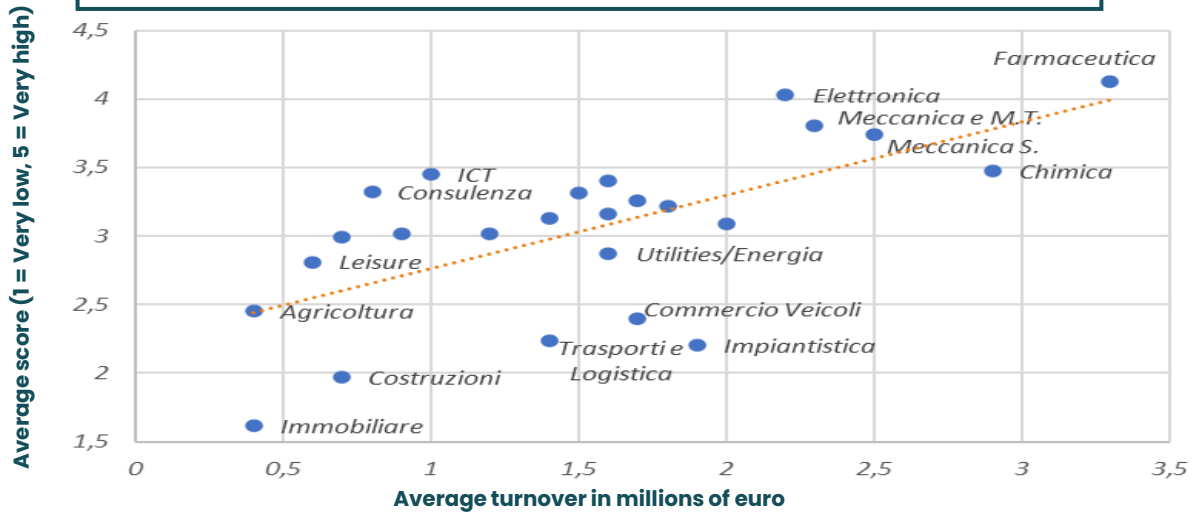
* These analyses were made possible thanks to the collaboration of RED Risk

Social factor vs. Size

FOCUS SMEs

The **Social factor** seems to go **in parallel** with the **size of SMEs**: as the size increases, the focus on social issues increases

Sector distribution:
Average turnover vs. Average Social score



HIGHLIGHTS

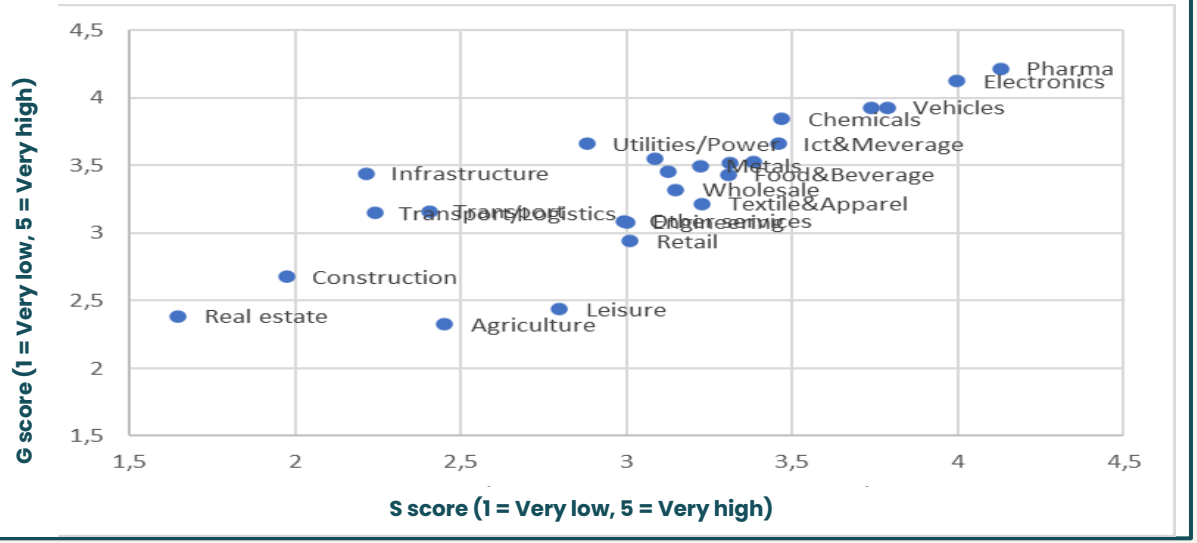
- Sectors such as **ICT** (Information and Communications Technology), **Consulting** and **Electronics** are **more socially aware than average**
- Sectors such as **Utilities** and **Transport**, although on average larger, **tend not to have developed targeted actions on social issues**

Governance factor vs. Social factor

FOCUS SMEs

The **Governance factor** goes **hand in hand** with the **Social factor**

Sector distribution: S score vs G score



HIGHLIGHTS

- **Companies with higher turnover have more structured governance**
- **Larger companies are often structured to provide external disclosure**, including through legality ratings, certifications and financial declarations on a voluntary basis

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The importance and power of data

*In order to make **informed choices and effective actions to include ESG drivers in business decisions**, it is critical **to rely on accurate, robust, and granular data analysis** (as in the examples above).*
The following slides provide some explanatory examples of the importance of these features

*To contribute to the study of the phenomena and related economic relationships, **CRIF is working to provide** the project with **a** complete and **granular sample** (including **ESG and Business Information**)*

*The **sample** will consist of the following*

- *Approximately **150,000 SMEs***
- ***Representative of the Italian framework***
  stratified to respect Italian distribution according to the drivers
  i. *Sector (NACE)*
  ii. *Geographical Area*
  iii. *Turnover Size*

Comparison with open data - Physical Risk

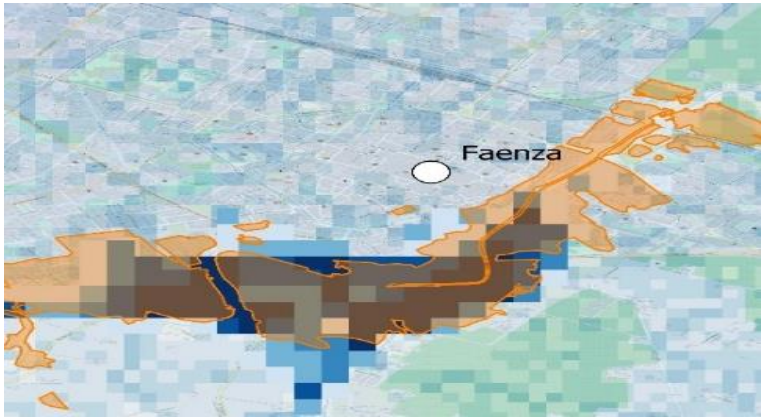
Evidence on the **riskiness of the Romagna territory** from other **public** (ISPRA) and **non-public data sources** is reported. The data reported refer to the **municipalities analysed** (Alfonsine, Cesena, Cervia and Faenza)

Other providers

Source: ISPRA data Medium risk High risk

~67% properties at **High/Medium risk**

CRIF Data 90X90



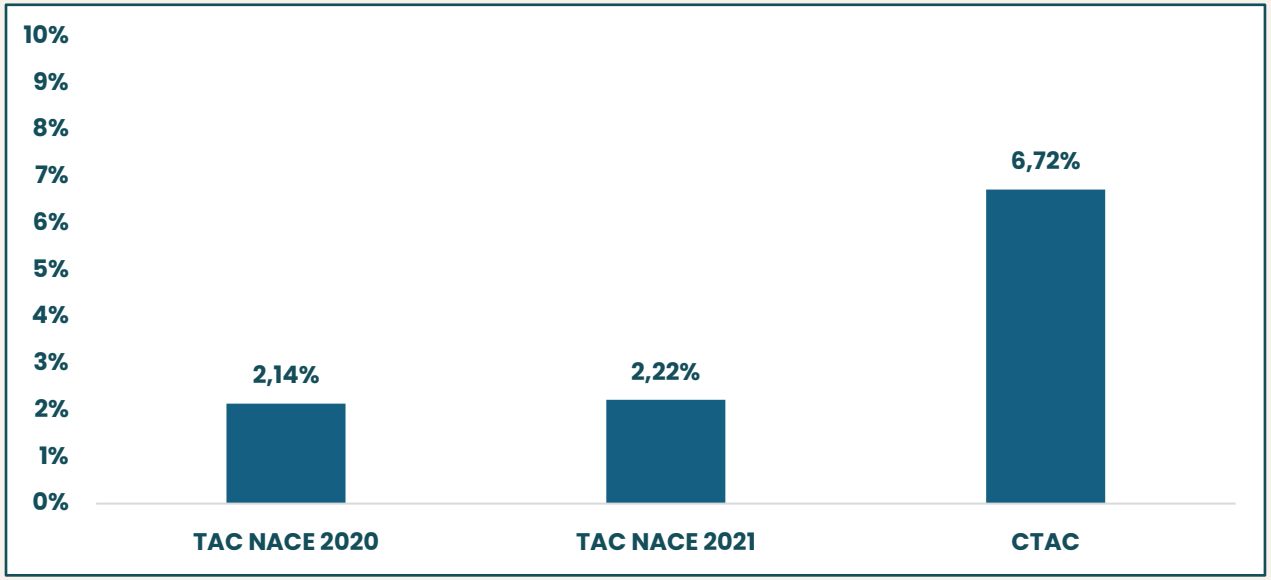
Illustrative image. The % is for the 5 municipalities

~8% properties at **High/Medium risk**

* These analyses were made possible thanks to the collaboration of RED Risk

Comparison with open data - Taxonomic alignment (1/3)

A **comparison** of the **average alignment** calculated on the sample **of Italian SMEs** with the **CRIF TAC** (Estimated Taxonomic Single Name Alignment Value), **TAC NACE 2020 and 2021** is shown below

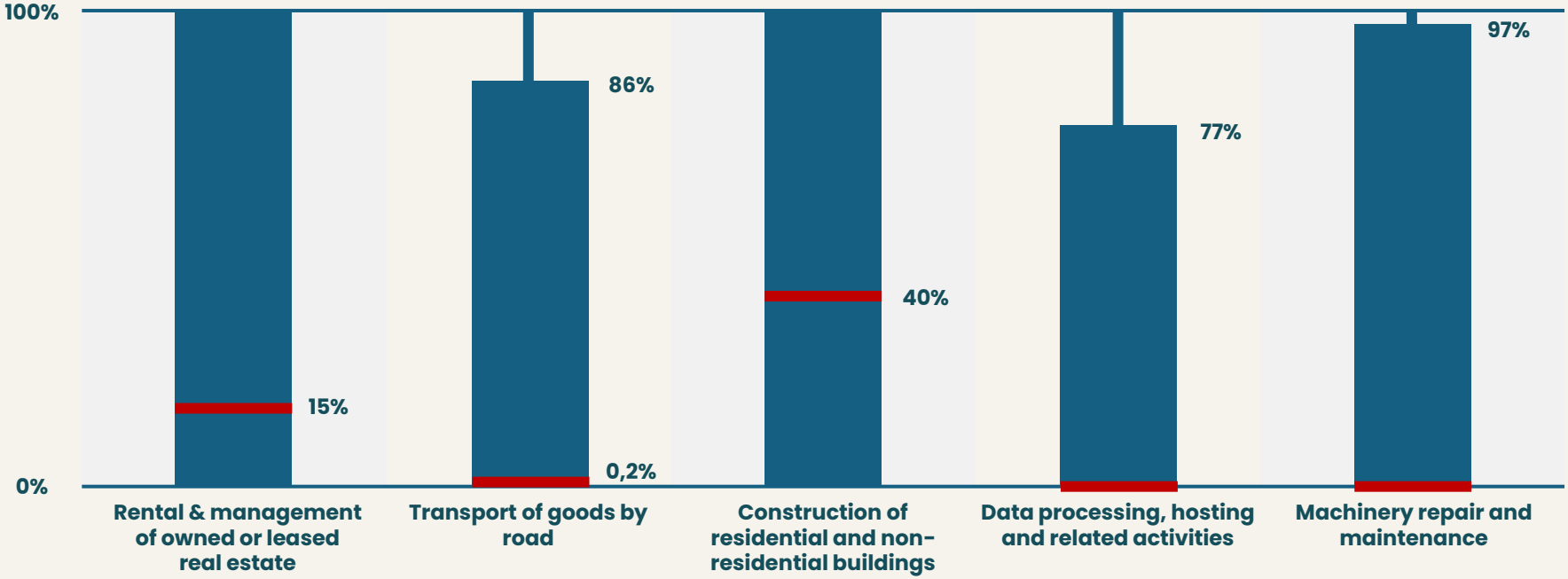


HIGHLIGHTS

- **Applying C-TAC** results in an average alignment of SMEs **three times higher than using the NACE 2020 and 2021 TACNB**: the analysis does not take into account the exposure associated with special purpose technical forms (i.e. mortgages)

Comparison with open data - Taxonomic alignment (2/3)

A **comparison** of **NACE 2021** and **CTAC** (range between minimum and maximum) for **some specific sectors**



Comparison with open data - Taxonomic alignment (3/3)

Regulatory TAC (left) and **CTAC** (right) associated with **SMEs** in the **Construction** sector in the **different Italian regions**

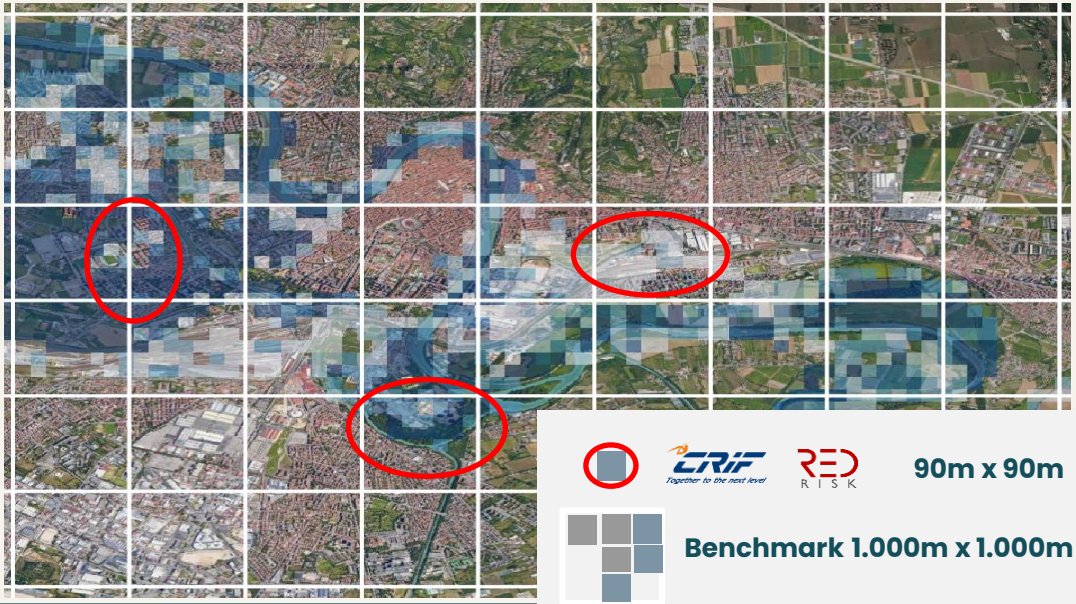
Con tecnologia Bing
© GeoNames, Microsoft, TomTom

CTAC
84%
40%

Con tecnologia Bing
© GeoNames, Microsoft, TomTom

Comparison with less granular benchmark - e.g. flood risk (1/2)

VERONA



90m x 90m

Benchmark 1.000m x 1.000m

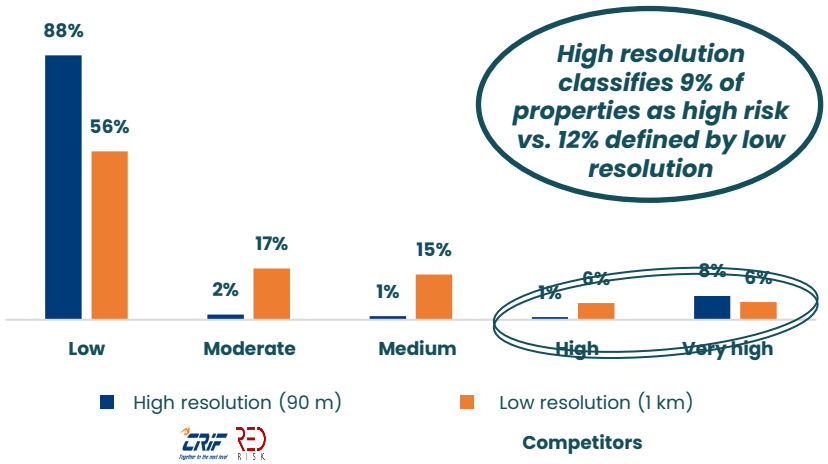
RESOLUTION

The map represents **water heights associated with a flood** with a 100-year return period. The **white pixel** represents **water heights of a few cm** (associated with minor damage to the property), **the dark blue heights of more than 3 m** (associated with major damage, such as damage to the house installations, ...). The 1,000m x 1,000m resolution grid incorporates micro-areas with very heterogeneous risk levels. Moreover, **within the 'pixel' properties tend to be concentrated in the areas of lowest risk**, accentuating the distortion associated with average ratings

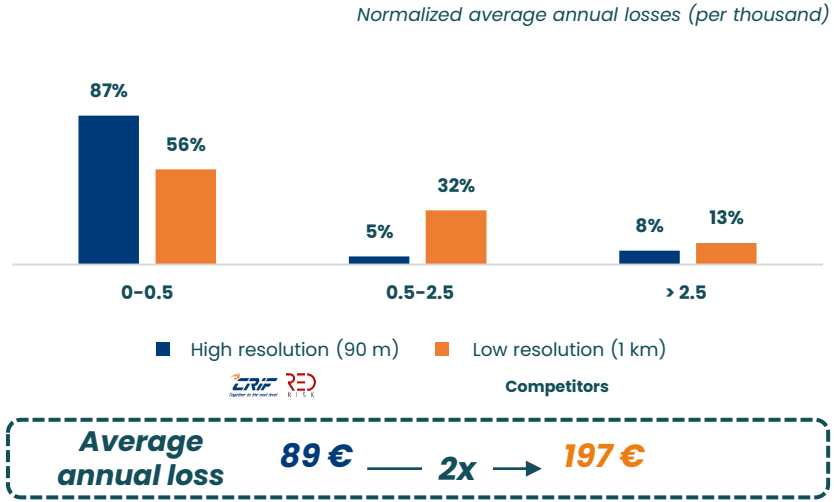
Comparison with less granular benchmark - e.g. flood risk (2/2)

On the analysed portfolio, the application of a high-resolution model is estimated to result in a **reduction in expected losses of between €30k and €60k*.**

Distribution by Physical Risk classes



Loss distribution



* These analyses were made possible thanks to the collaboration of RED Risk

**Guaranteed portfolio of about EUR 1m EAD, PD at 0.7% and LGD at about 14%. Simulation conducted by stressing only LGD for the impact of physical risk*

Closing remarks

- Data quality evolves compliance in «effective» risk management
- The ESG profile of SMEs affects credit risk
- It is a long journey, but we have shown that there is room for improvement

Venezia - December 3, 2024

Thank you

Contacts:

m.macellari@crif.com
+39 334 693 9684

G.Longobardiespositocesariello@crif.com
+39 345 994 5045

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Ministero dell'Università e della Ricerca

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