

3<sup>rd</sup> SOCIAL IMPACT INVESTMENTS  
INTERNATIONAL CONFERENCE

ROME, DECEMBER 5-6, 2019

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# Performance of ESG and Machine Learning investment approaches

*Carminé de Franco, PhD*

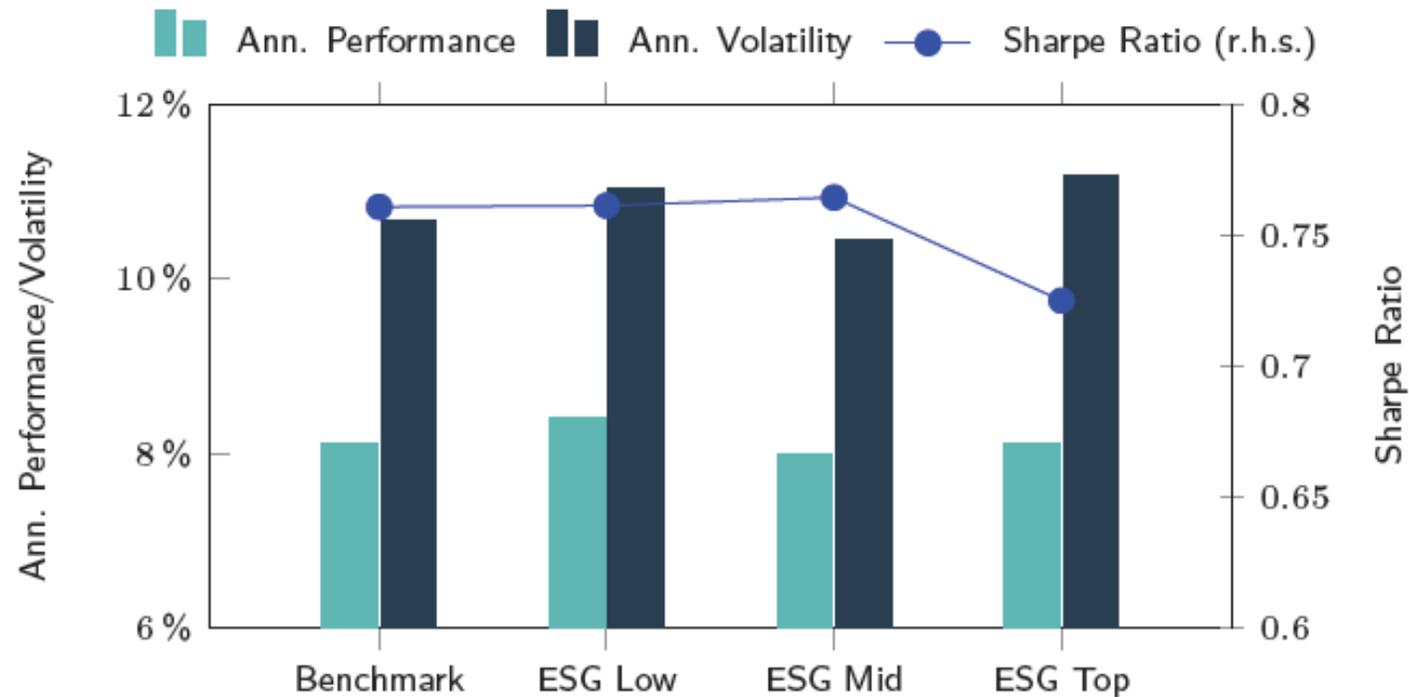
*Head of fundamental research, Ossiam*

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# ESG & Best-In-Class approaches

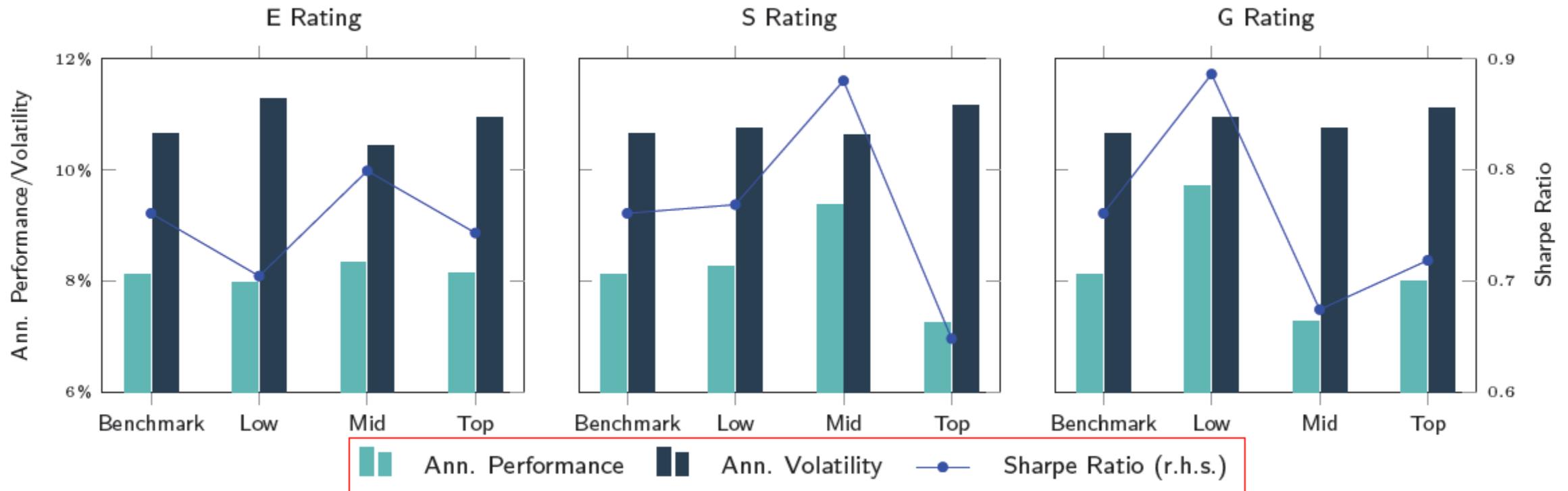
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## Does simple ESG ranking deliver performance?



# Single Pillar Best-In-Class approaches

— 3 —



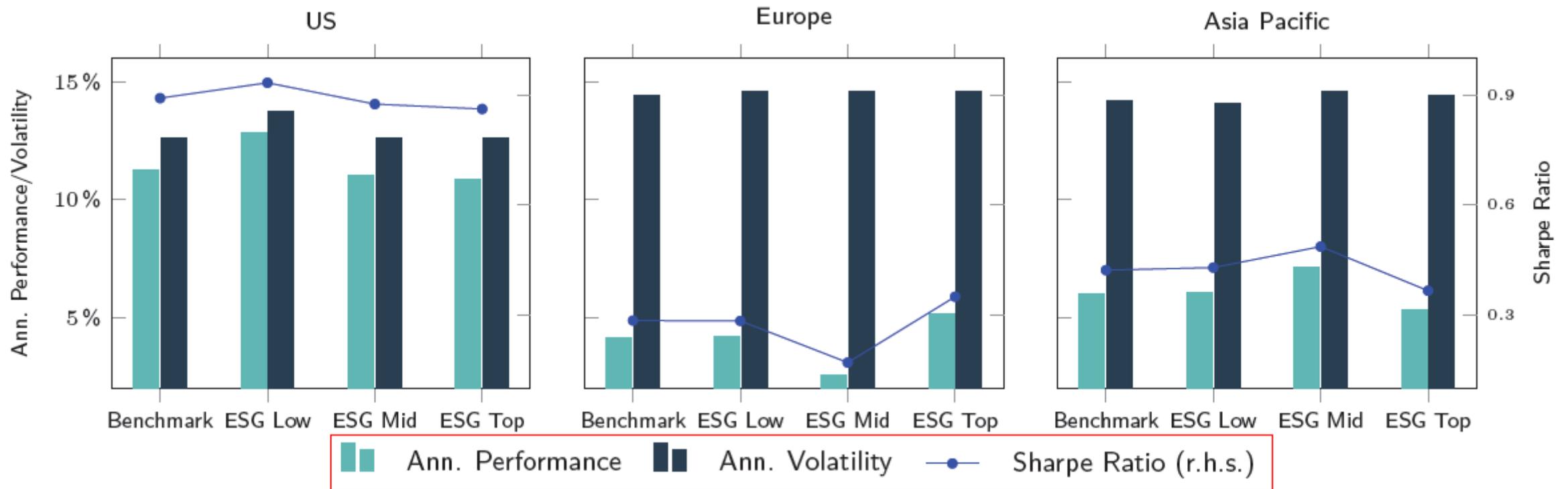
Source : Ossiam – Performance of ESG and Machine Learning investment approaches (De Franco, 2019), available at

[https://ossiam.com/files/research\\_papers/1555312503\\_Performance\\_of\\_ESG\\_and\\_Machine\\_Learning\\_investment\\_approaches.pdf](https://ossiam.com/files/research_papers/1555312503_Performance_of_ESG_and_Machine_Learning_investment_approaches.pdf).

Calculation in USD. Data from October 2012 to December 2018 from Solactive, Datastream and Sustainalytics. Past performance is not a reliable indicator of future performance.

# Country Best-In-Class approaches

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# Investing in leaders from an aggregate point of view

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\*Source: Bloomberg – Calculations by Ossiam in USD. Past performance is not a reliable indicator of future performance

# Is it a drag on performance?

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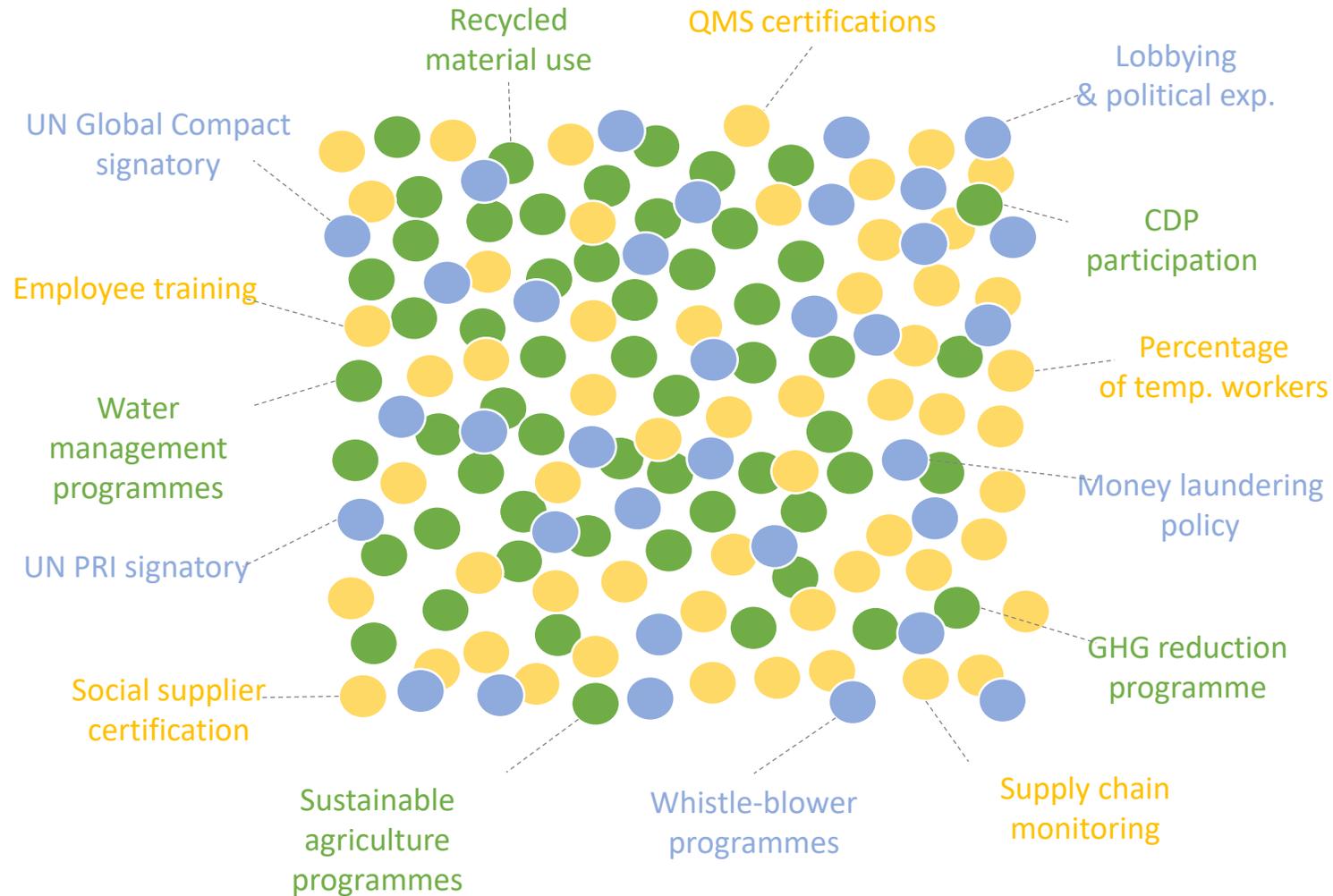
❑ Not a persistent drag. Not a performance boost neither

❑ Possible reasons:

- Non-homogeneous investment universe?
- Mispriced ESG risks?
- Use of aggregated data?
- Non-linear/Digital effects ?
- Uselessness of ESG?

# Standard ESG ratings and loss of information

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**Granularity is key :** The **aggregation** of ESG ratings leads to a **loss of valuable information** in the ESG indicators

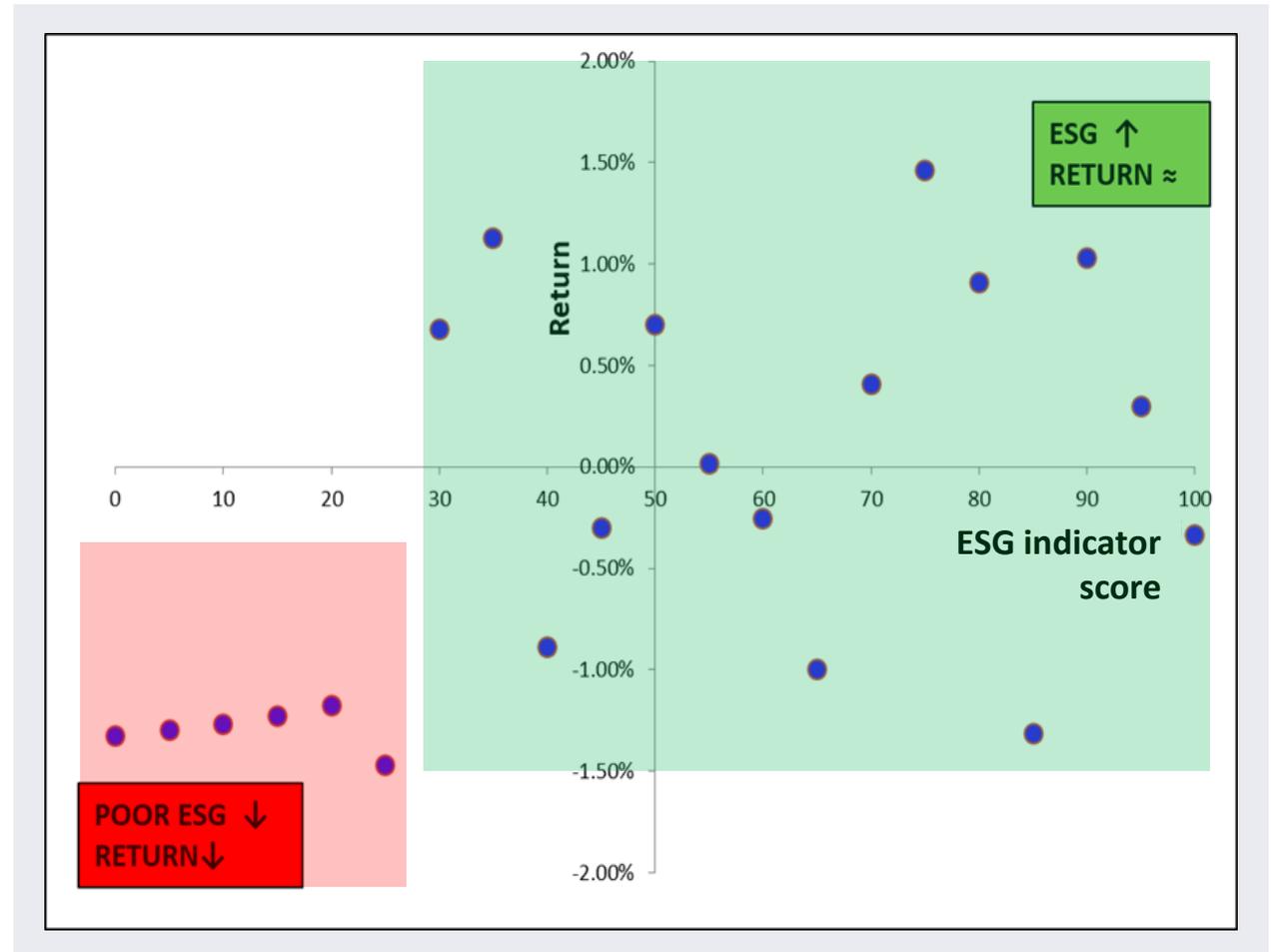
# A complex, non-linear relationship

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The relationship between an ESG indicator and financial performance is **complex** and **not so easy to identify**...

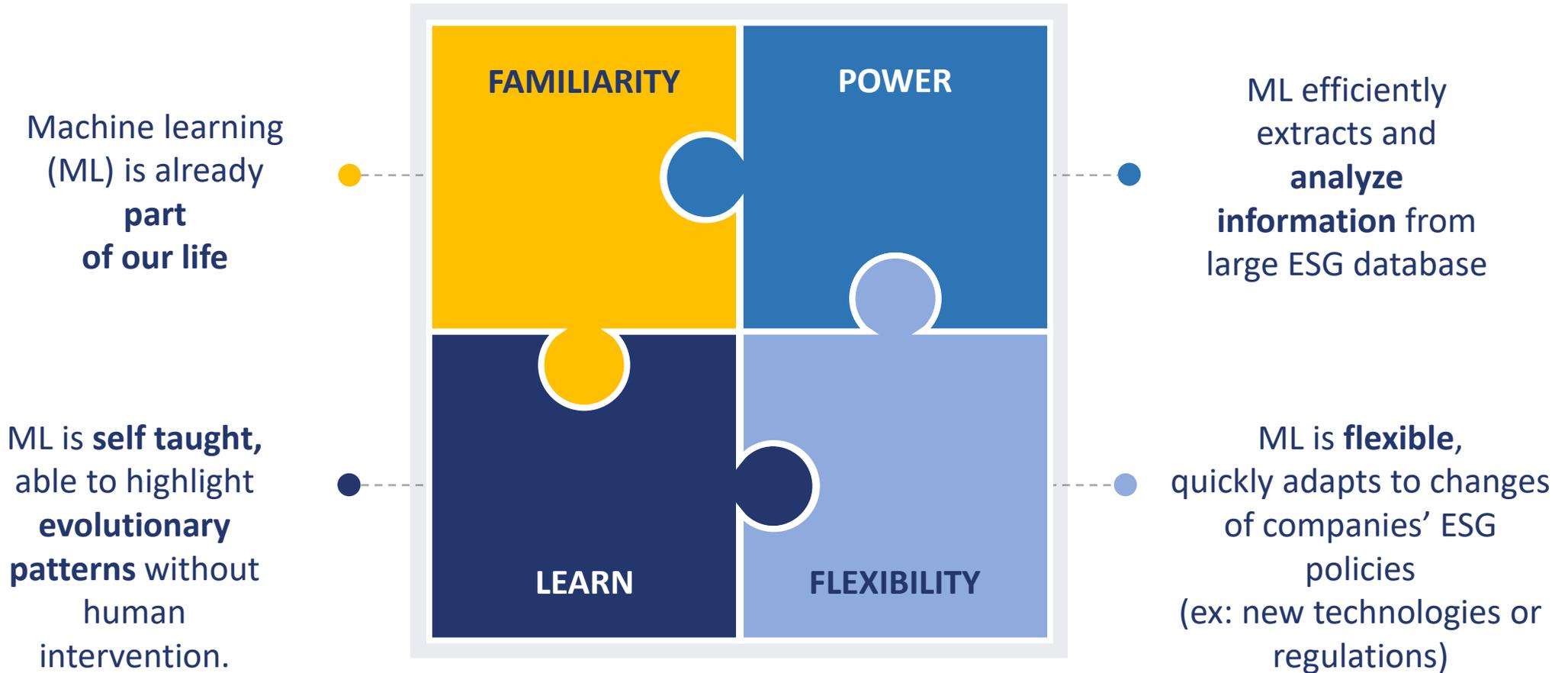
There is little evidence of a direct or linear relationship between the average or high scoring of the ESG indicator and positive financial performance.

**However**, a poor scoring of the ESG indicator tends to be strongly correlated to negative financial performance.



# Why ESG and machine learning are a perfect match

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# Dataset for Ossiam's machine learning algorithm

## ESG data



ENVIRONMENT

56 indicators



SOCIAL

56 indicators



GOVERNANCE

34 indicators

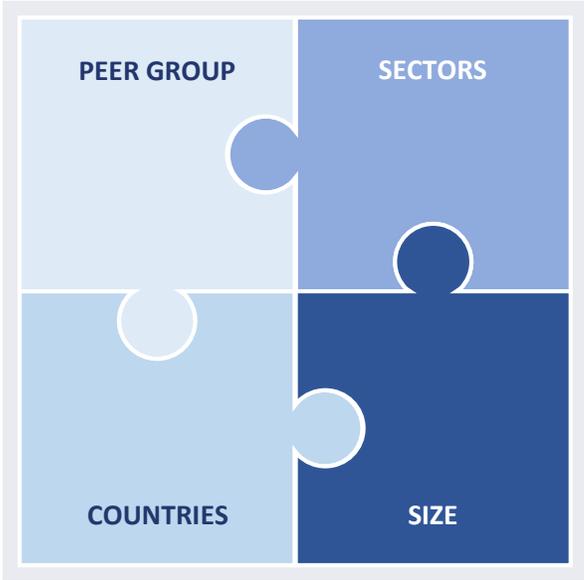


INCIDENTS

10 indicators

Approx. 600 granular and derived ESG scores  
(from ESG data provider Sustainalytics)

## Classification



Approx. 600 relative ESG scores  
(vs country, vs sector, vs peer group...)

## Market data



# Overview of Ossiam's machine learning algorithm

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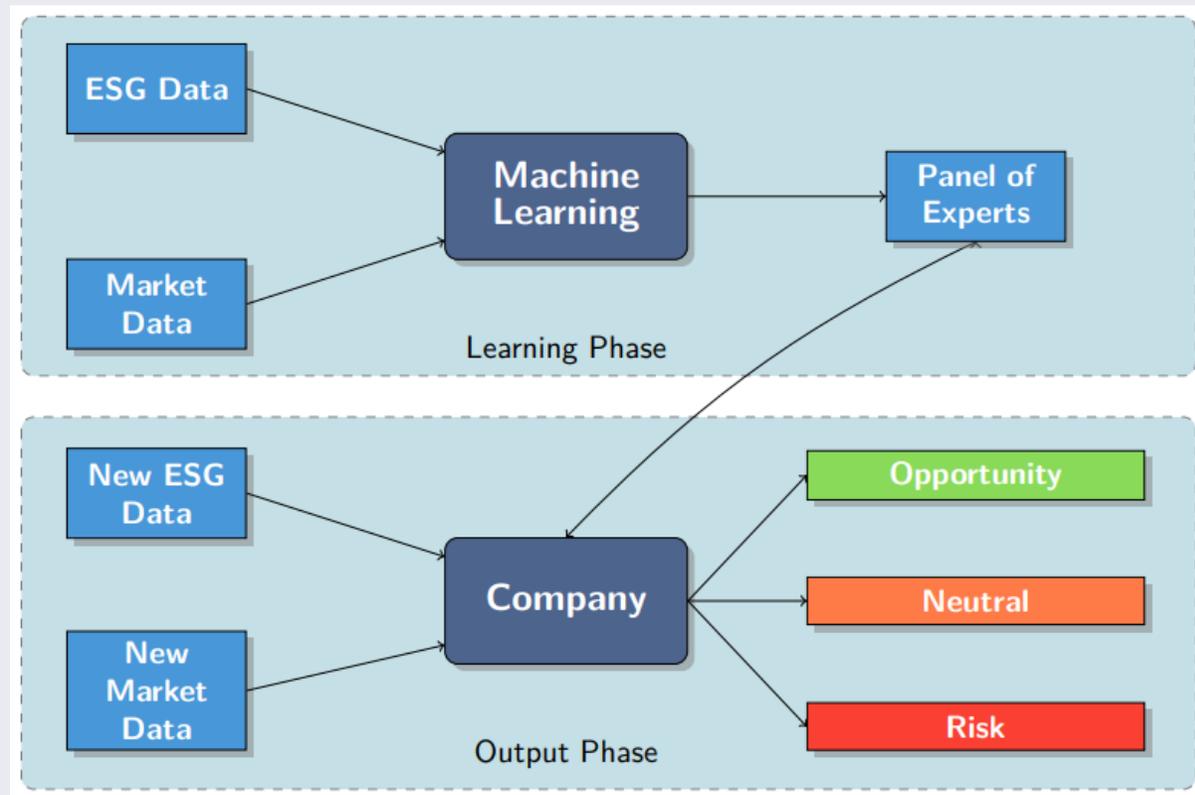
The algorithm looks for *experts* that link ESG profiles with financial outlook and determines whether these stocks represent **Opportunities** or **Risks** from a financial perspective.

The algorithm's output consists in a *set of experts*, activated by ESG and financial data.

An *expert* can combine **one or more indicators**.

In real situations combining more ESG indicators increases substantially the “**knowledge**” of the *experts* and then their **predictive strength**.

Schematic diagram of the machine learning algorithm\*



# Examples of patterns

## Positive pattern

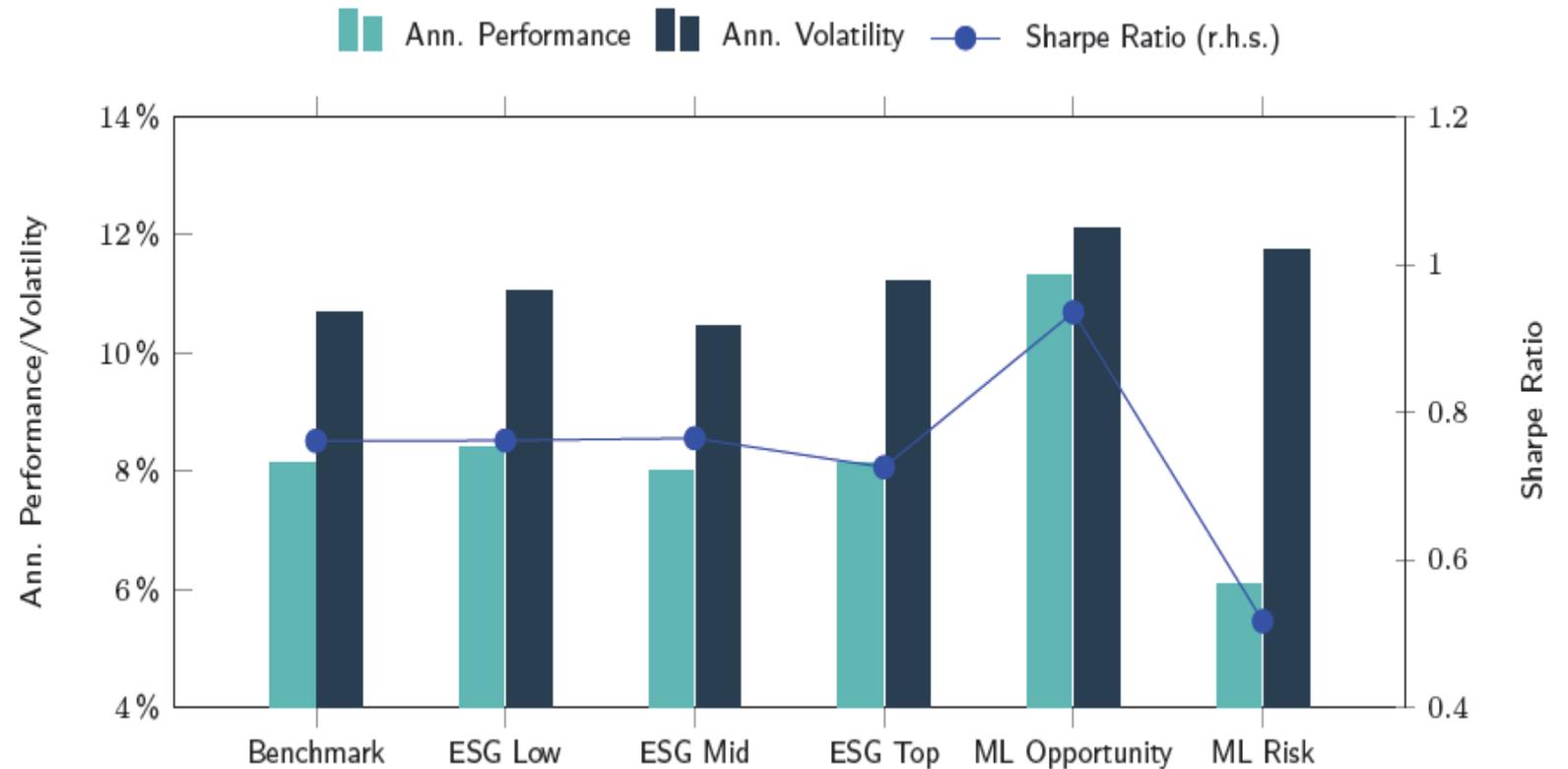
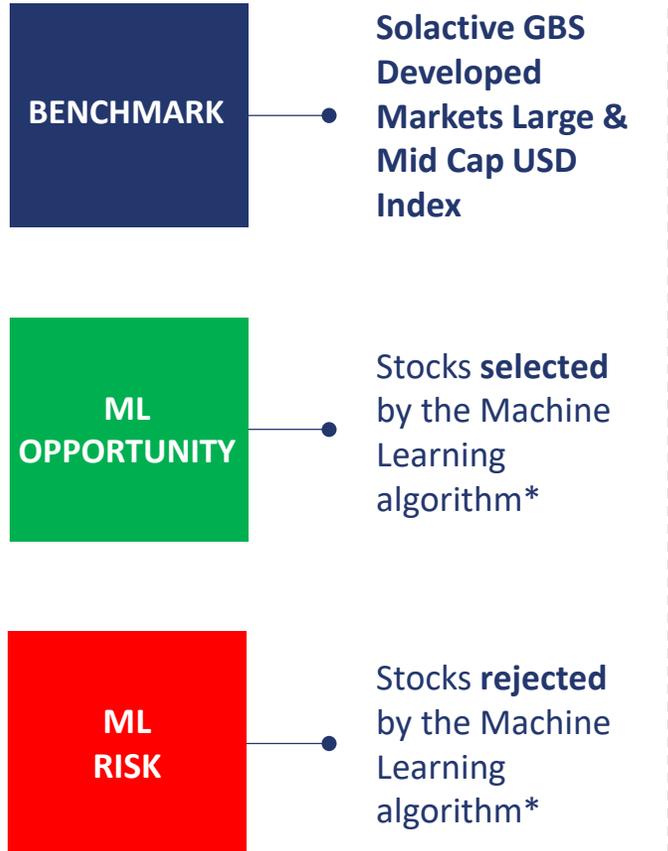


## Negative pattern



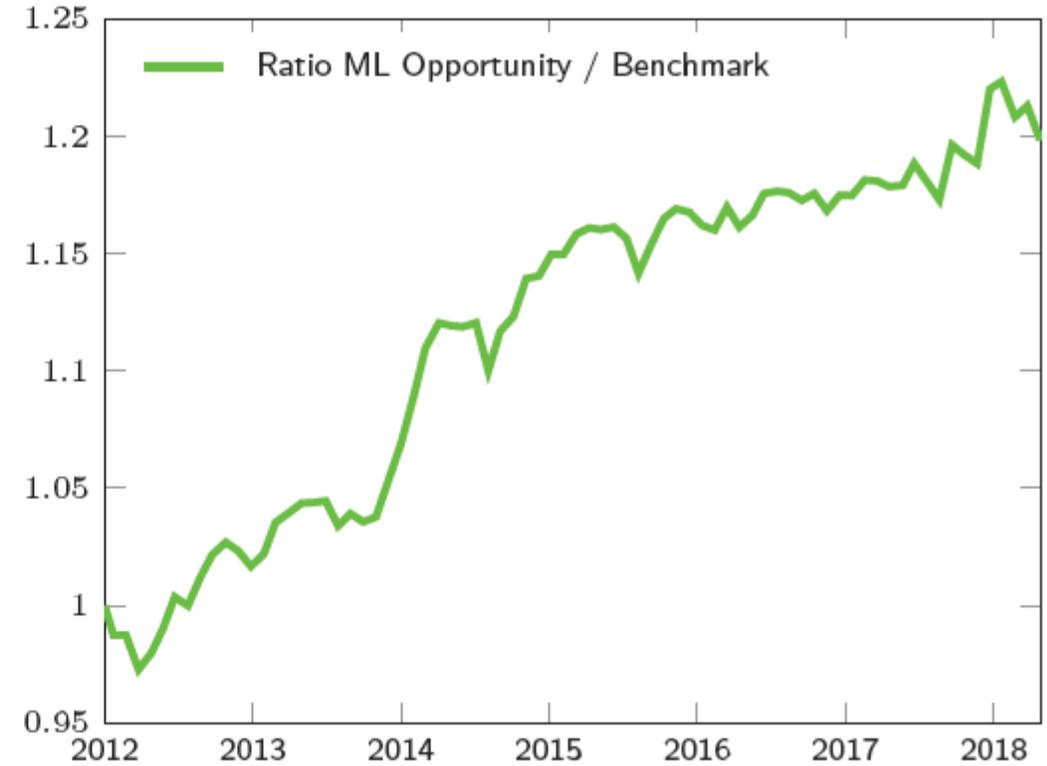
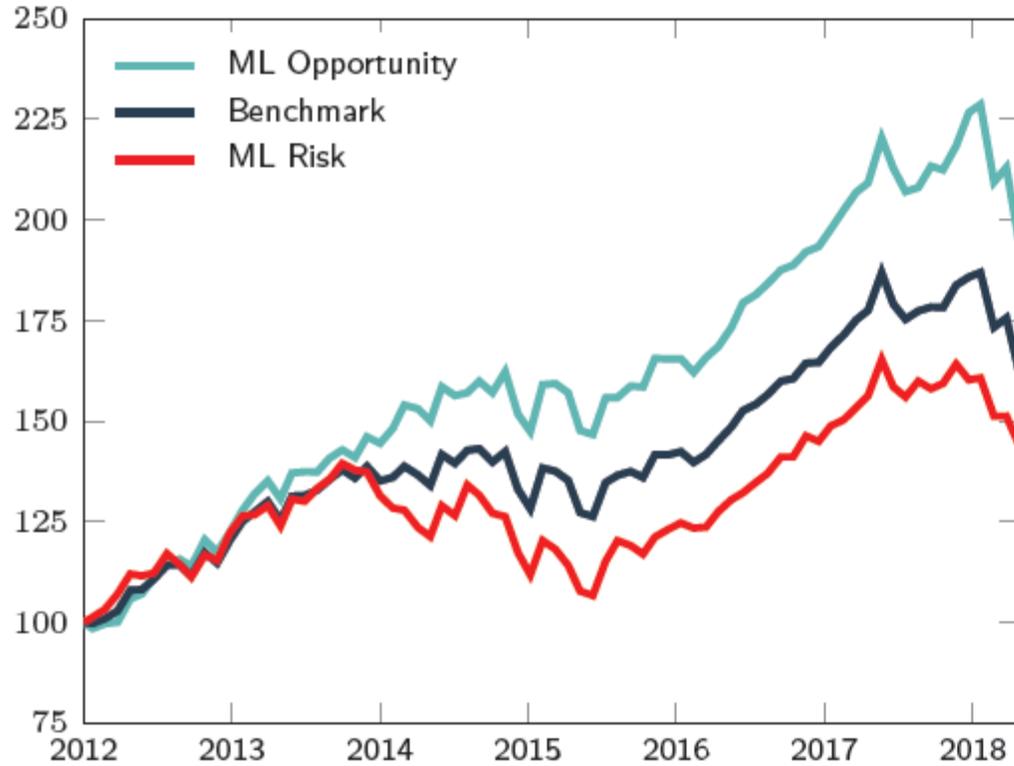
# Ossiam's machine learning algorithm applied to a developed universe

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# Creating value over time

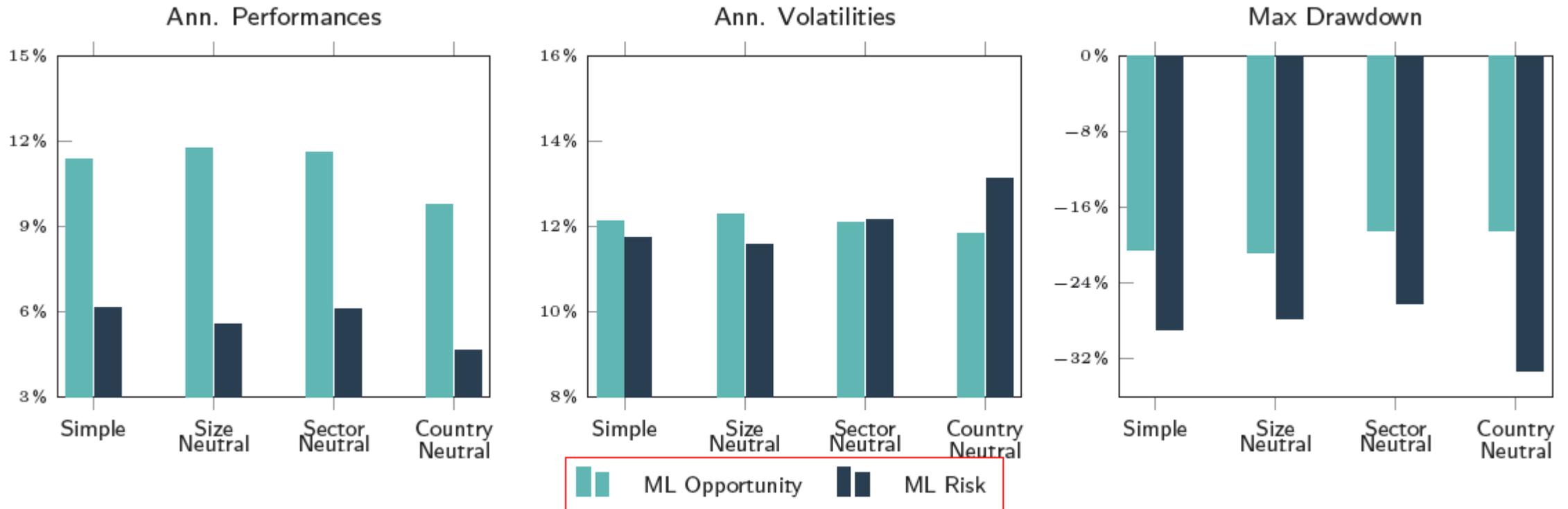
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# Controlling for unintended exposures

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Cap-weighted portfolios based on the ML selection but neutral in one feature (size, sector or country)



# Risks and considerations

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Being exposed to the equity market, the strategy may be volatile. It must be made clear that investors may lose their investment entirely.

Given the underlying market of the strategy, investors could be exposed to geographical concentration risk and ESG investment risk.

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