

# ESG Attribution

## Bas Leerink



Investment Performance round table  
CFA Netherlands  
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# What we do & who we are

We enable people to manage the complexity of investment decision making

Ortec Finance is a global technology and solutions provider





# ESG Attribution

Model development

This presentation is based on a *forthcoming article in the Winter edition of VBA Journaal, which will be published in January 2015.*

The development of an ESG attribution model

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# Introduction

- Why ESG Attribution?
- Methodology and data requirements
- Results and Insights
- Future extensions



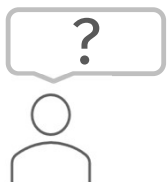


## Why ESG Attribution?



# Why ESG attribution?

Closing the feedback loop



Explain policy effects



Better informed decision making



Insights in intended and unintended effects



Improved client dialogue



Substantiate claims

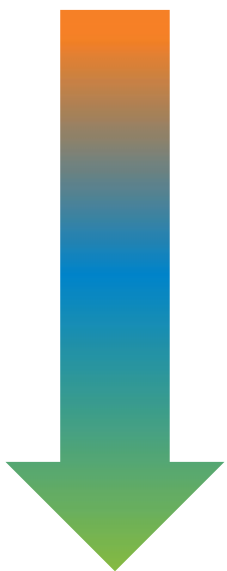




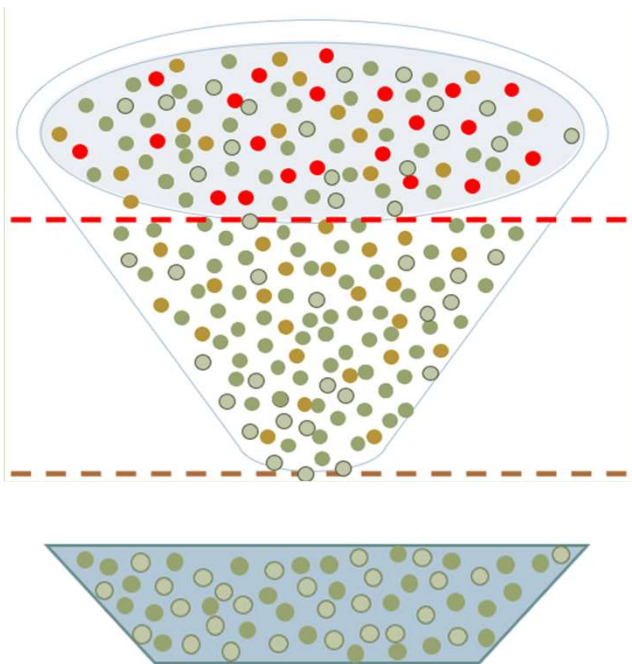
# ESG integration

Example of ESG Integration in an Equity Portfolio

MSCI World



Custom benchmark



Exclusions

- Regulatory
- Inappropriate activities

Screening

- ESG score
- Environmental score
- Financial score

Portfolio construction

- Capped weight





## Methodology and Data Requirements



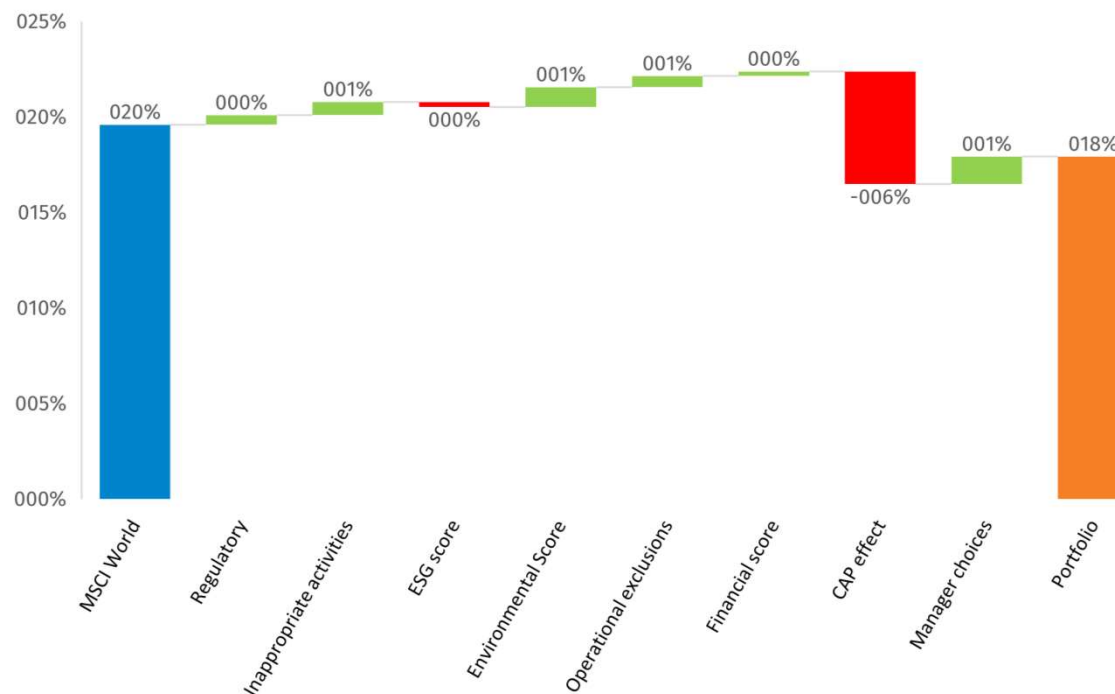


# Financial Performance Attribution

Standard approach to attribution

	Return
<b>MSCI World</b>	<b>19.60%</b>
Regulatory	0.49%
Inappropriate activities	0.69%
ESG score	-0.26%
Environmental Score	1.04%
Operational exclusions	0.58%
Financial score	0.24%
<b>Benchmark with exclusions</b>	<b>22.38%</b>
<b>Benchmark with exclusions capped</b>	<b>16.48%</b>
<b>Portfolio</b>	<b>17.92%</b>
<b>Total Out performance</b>	<b>-1.67%</b>
<b>Due to exclusions</b>	<b>2.78%</b>
<b>Due to cap</b>	<b>-5.90%</b>
<b>Due to manager choices</b>	<b>1.44%</b>

Results for 2023





# ESG Metric Attribution

The next step - data

- Any ESG metric could be used
  - Emissions Intensity (based on Revenue)
  - Emissions Intensity (based on Enterprise Value)
  - E/S/G Scores
  - Biodiversity, water usage etc.
- Roll up from the security level metrics to calculate benchmark and portfolio level metrics
- Compare the different benchmarks against each other and the portfolio





## Results & Insights



# Expanding attribution with ESG metrics

2023

	Return
<b>MSCI World</b>	<b>19.60%</b>
Regulatory	0.49%
Inappropriate activities	0.69%
ESG score	-0.26%
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Total Outperformance	-1.67%
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Due to cap	-5.90%
Due to manager choices	1.44%





# Expanding attribution with ESG metrics

2023

	Return	Scope 1 & 2 CO <sub>2</sub> e/EV
<b>MSCI World</b>	<b>19.60%</b>	<b>475,602.36</b>
Regulatory	0.49%	-50,226.61
Inappropriate activities	0.69%	3,263.14
ESG score	-0.26%	-17,116.77
Environmental Score	1.04%	-110,925.01
Operational Exclusions	0.58%	10,936.78
Financial score	0.24%	-40,399.17
<b>Benchmark with exclusions</b>	<b>22.38%</b>	<b>273,603.43</b>
<b>Benchmark with exclusions capped</b>	<b>16.48%</b>	<b>326,322.81</b>
<b>Portfolio</b>	<b>17.92%</b>	<b>306,000.03</b>
Total Outperformance	-1.67%	-169,602.33
Due to exclusions	2.78%	-201,998.92
Due to cap	-5.90%	52,719.39
Due to manager choices	1.44%	-20,322.78





# Expanding attribution with ESG metrics

2023

	Return	Scope 1 & 2 CO <sub>2</sub> e/EV	Scope 1 & 2 tCO <sub>2</sub> e intensity
<b>MSCI World</b>	<b>19.60%</b>	<b>475,602.36</b>	<b>103.36</b>
Regulatory	0.49%	-50,226.61	-6.22
Inappropriate activities	0.69%	3,263.14	0.41
ESG score	-0.26%	-17,116.77	0.57
Environmental Score	1.04%	-110,925.01	-16.74
Operational Exclusions	0.58%	10,936.78	3.54
Financial score	0.24%	-40,399.17	-6.84
<b>Benchmark with exclusions</b>	<b>22.38%</b>	<b>273,603.43</b>	<b>78.08</b>
<b>Benchmark with exclusions capped</b>	<b>16.48%</b>	<b>326,322.81</b>	<b>92.78</b>
<b>Portfolio</b>	<b>17.92%</b>	<b>306,000.03</b>	<b>92.97</b>
Total Outperformance	-1.67%	-169,602.33	-10.39
Due to exclusions	2.78%	-201,998.92	-25.29
Due to cap	-5.90%	52,719.39	14.71
Due to manager choices	1.44%	-20,322.78	0.19





# Expanding attribution with ESG metrics

2023

	Return	Scope 1 & 2 CO <sub>2</sub> e/EV	Scope 1 & 2 tCO <sub>2</sub> e intensity	Climate emission reported trust	Total weight missing data
<b>MSCI World</b>	<b>19.60%</b>	<b>475,602.36</b>	<b>103.36</b>	<b>80.95%</b>	<b>2.04%</b>
Regulatory	0.49%	-50,226.61	-6.22	-0.31%	0.02%
Inappropriate activities	0.69%	3,263.14	0.41	0.62%	-0.01%
ESG score	-0.26%	-17,116.77	0.57	0.25%	-0.36%
Environmental Score	1.04%	-110,925.01	-16.74	-0.40%	0.03%
Operational Exclusions	0.58%	10,936.78	3.54	0.47%	-0.88%
Financial score	0.24%	-40,399.17	-6.84	-0.35%	-0.04%
<b>Benchmark with exclusions</b>	<b>22.38%</b>	<b>273,603.43</b>	<b>78.08</b>	<b>81.23%</b>	<b>0.81%</b>
<b>Benchmark with exclusions capped</b>	<b>16.48%</b>	<b>326,322.81</b>	<b>92.78</b>	<b>84.75%</b>	<b>0.97%</b>
<b>Portfolio</b>	<b>17.92%</b>	<b>306,000.03</b>	<b>92.97</b>	<b>84.38%</b>	<b>0.69%</b>
Total Outperformance	-1.67%	-169,602.33	-10.39	3.43%	-1.35%
Due to exclusions	2.78%	-201,998.92	-25.29	0.28%	-1.22%
Due to cap	-5.90%	52,719.39	14.71	3.52%	0.16%
Due to manager choices	1.44%	-20,322.78	0.19	-0.37%	-0.28%



# Expanding attribution with ESG metrics

2023

	Return	Scope 1 & 2 CO <sub>2</sub> e/EV	Scope 1 & 2 tCO <sub>2</sub> e intensity	Climate emission reported trust	Total weight missing data	Environment	Social	Governance
<b>MSCI World</b>	<b>19.60%</b>	<b>475,602.36</b>	<b>103.36</b>	<b>80.95%</b>	<b>2.04%</b>	<b>6.61</b>	<b>5.64</b>	<b>5.03</b>
Regulatory	0.49%	-50,226.61	-6.22	-0.31%	0.02%	0.05	0.00	-0.01
Inappropriate activities	0.69%	3,263.14	0.41	0.62%	-0.01%	0.05	0.00	0.08
ESG score	-0.26%	-17,116.77	0.57	0.25%	-0.36%	-0.02	0.06	0.11
Environmental Score	1.04%	-110,925.01	-16.74	-0.40%	0.03%	0.06	-0.04	-0.05
Operational Exclusions	0.58%	10,936.78	3.54	0.47%	-0.88%	-0.06	0.01	0.03
Financial score	0.24%	-40,399.17	-6.84	-0.35%	-0.04%	0.01	0.00	0.01
<b>Benchmark with exclusions</b>	<b>22.38%</b>	<b>273,603.43</b>	<b>78.08</b>	<b>81.23%</b>	<b>0.81%</b>	<b>6.68</b>	<b>5.68</b>	<b>5.21</b>
<b>Benchmark with exclusions capped</b>	<b>16.48%</b>	<b>326,322.81</b>	<b>92.78</b>	<b>84.75%</b>	<b>0.97%</b>	<b>6.69</b>	<b>5.88</b>	<b>5.16</b>
<b>Portfolio</b>	<b>17.92%</b>	<b>306,000.03</b>	<b>92.97</b>	<b>84.38%</b>	<b>0.69%</b>	<b>6.93</b>	<b>6.06</b>	<b>5.33</b>
Total Outperformance	-1.67%	-169,602.33	-10.39	3.43%	-1.35%	0.32	0.42	0.30
Due to exclusions	2.78%	-201,998.92	-25.29	0.28%	-1.22%	0.07	0.04	0.17
Due to cap	-5.90%	52,719.39	14.71	3.52%	0.16%	0.01	0.20	-0.05
Due to manager choices	1.44%	-20,322.78	0.19	-0.37%	-0.28%	0.24	0.18	0.17







# Expanding attribution with ESG metrics

2023

	Return	Total Scope 1 & 2 tCO <sub>2</sub> e	Scope 1 & 2 tCO <sub>2</sub> e i
<b>MSCI World</b>	<b>19.60%</b>	<b>475,602.36</b>	
Regulatory	0.49%	-50,226.61	
Inappropriate activities	0.69%	3,263.14	
ESG score	-0.26%	-17,116.77	
<b>Environmental Score</b>	<b>1.04%</b>	<b>-110,925.01</b>	
Operational exclusions	0.58%	10,936.78	
Financial score	0.24%	-40,399.17	
<b>Benchmark with exclusions</b>	<b>22.38%</b>	<b>273,603.43</b>	
<b>Benchmark with exclusions capped</b>	<b>16.48%</b>	<b>326,322.81</b>	
<b>Portfolio</b>	<b>17.92%</b>	<b>306,000.03</b>	
<b>Total Out performance</b>	<b>-1.67%</b>	<b>-169,602.33</b>	



# Expanding attribution with ESG metrics

2023

	Return	Total Scope 1 & 2 tCO <sub>2</sub> e	Scope 1 & 2 tCO <sub>2</sub> e i
<b>MSCI World</b>	<b>19.60%</b>	<b>475,602.36</b>	
Regulatory	0.49%	-50,226.61	
Inappropriate activities	0.69%	3,263.14	
ESG score	-0.26%	-17,116.77	
<b>Environmental Score</b>	<b>1.04%</b>	<b>-110,925.01</b>	
Operational exclusions	0.58%	10,936.78	
Financial score	0.24%	-40,399.17	
<b>Benchmark with exclusions</b>	<b>22.38%</b>	<b>273,603.43</b>	
<b>Benchmark with exclusions capped</b>	<b>16.48%</b>	<b>326,322.81</b>	
<b>Portfolio</b>	<b>17.92%</b>	<b>306,000.03</b>	
<b>Total Out performance</b>	<b>-1.67%</b>	<b>-169,602.33</b>	



# Unintended Effect of Cap on Emissions

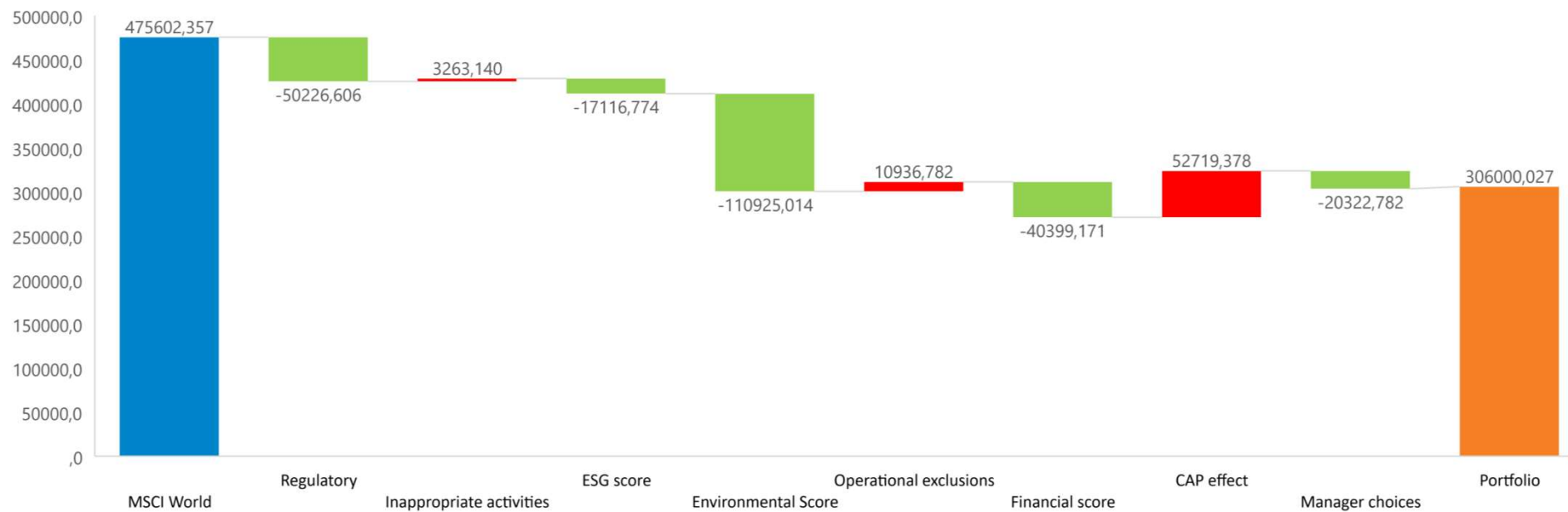
2022 vs 2023

	2022		2023	
	Return	Total Scope 1 & 2 tCO <sub>2</sub> e	Return	Total Scope 1 & 2 tCO <sub>2</sub> e
<b>MSCI World</b>	<b>-12.78%</b>	<b>593,670.96</b>	<b>19.60%</b>	<b>475,602.36</b>
Regulatory	-0.73%	-25,469.17	0.49%	-50,226.61
Inappropriate activities	-0.77%	6,100.26	0.69%	3,263.14
ESG score	0.60%	-15,913.53	-0.26%	-17,116.77
Environmental Score	-0.72%	-106,543.47	1.04%	-110,925.01
Operational exclusions	-0.05%	17,128.09	0.58%	10,936.78
Financial score	-0.15%	-44,465.29	0.24%	-40,399.17
<b>Benchmark with exclusions</b>	<b>-14.60%</b>	<b>428,756.00</b>	<b>22.38%</b>	<b>273,603.43</b>
<b>Benchmark with exclusions capped</b>	<b>-12.19%</b>	<b>511,459.87</b>	<b>16.48%</b>	<b>326,322.81</b>
<b>Portfolio</b>	<b>-12.57%</b>	<b>451,129.57</b>	<b>17.92%</b>	<b>306,000.03</b>
<b>Total Out performance</b>	0.21%	-142,541.39	-1.67%	-169,602.33
<b>Due to exclusions</b>	-1.83%	-164,914.96	2.78%	-201,998.93
<b>Due to cap</b>	<b>2.42%</b>	<b>82,703.87</b>	<b>-5.90%</b>	<b>52,719.38</b>
<b>Due to manager choices</b>	-0.38%	-60,330.29	1.44%	-20,322.78





# Emission Decomposition (tCO<sub>2</sub>e)





# Future Extensions



# Model Extensions

## Investigating Inflation

- Emissions intensity is calculated from total emissions and a financial denominator, typically revenue or market capitalisation
- In periods of high inflation, emissions intensity could appear to be reducing when it is increasing or static in real terms

Year	Total Emissions	Revenue (millions)	Emissions Intensity	% Change
2019	10,000	500.00	20.00	
2020	10,000	525.00	19.05	-4.76%
2021	10,000	575.00	17.39	-8.70%
2022	10,000	625.00	16.00	-8.00%
2023	10,000	650.00	15.38	-3.85%





# Model Extensions

## Investigating Inflation

- Emissions intensity is calculated from total emissions and a financial denominator, typically revenue or market capitalisation
- In periods of high inflation, emissions intensity could appear to be reducing when it is increasing or static in real terms

Year	Total Emissions	Revenue (millions)	Emissions Intensity	% Change	Nominal Growth	Inflation	Real Growth	Real Revenue
2019	10,000	500.00	20.00					500.00
2020	10,000	525.00	19.05	-4.76%	5.00%	3.00%	2.00%	510.00
2021	10,000	575.00	17.39	-8.70%	9.52%	8.00%	1.52%	517.77
2022	10,000	625.00	16.00	-8.00%	8.70%	10.00%	-1.30%	511.02
2023	10,000	650.00	15.38	-3.85%	4.00%	4.00%	0.00%	511.02





# Model Extensions

## Investigating Inflation

- Emissions intensity is calculated from total emissions and a financial denominator, typically revenue or market capitalisation
- In periods of high inflation, emissions intensity could appear to be reducing when it is increasing or static in real terms

Year	Total Emissions	Revenue (millions)	Emissions Intensity	% Change	Nominal Growth	Inflation	Real Growth	Real Revenue	Real Intensity	Real % Change
2019	10,000	500.00	20.00					500.00	20.00	
2020	10,000	525.00	19.05	-4.76%	5.00%	3.00%	2.00%	510.00	19.61	-1.96%
2021	10,000	575.00	17.39	-8.70%	9.52%	8.00%	1.52%	517.77	19.31	-1.50%
2022	10,000	625.00	16.00	-8.00%	8.70%	10.00%	-1.30%	511.02	19.57	1.32%
2023	10,000	650.00	15.38	-3.85%	4.00%	4.00%	0.00%	511.02	19.57	0.00%







# Model Extensions

Decomposition over time

- To understand why emissions change over time we need to create a decomposition. Various effects can be included:
  - Inflation Effect
  - Data Coverage Effect
  - Trading Effects
    - Impact of new investments
    - Impact of divestments
    - Impact of changing allocations
  - Security Effects
    - Changes in absolute emissions
    - Changes in revenue/EV due to exchange rate changes
    - Changes in revenue/EV (nominal)

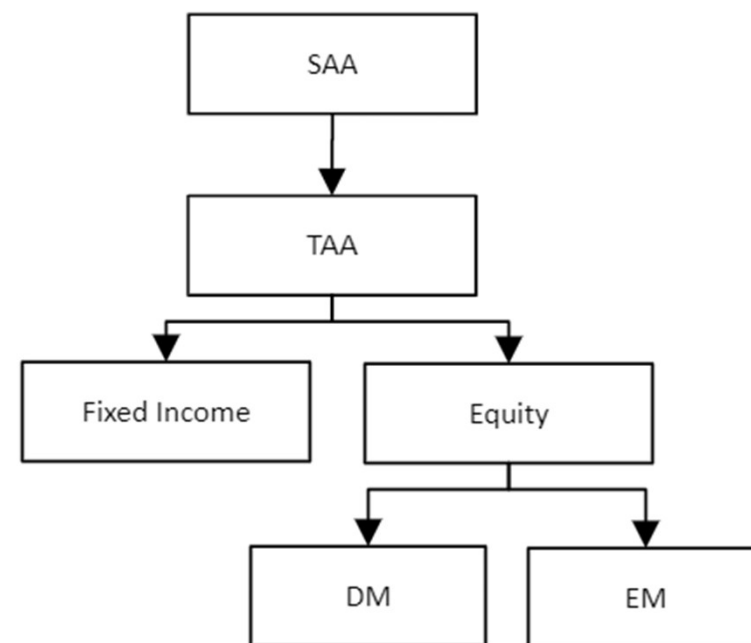




# Model Extensions

Decisions along the investment hierarchy

- The investment decision process contains many decisions not just exclusions at the portfolio level
- Understanding the impact of decisions made within each portfolio is only a part of the story
- Extend the analysis to cover all investment decisions whether they are taken for financial or non-financial reasons; e.g. SAA vs TAA, Regional tilts etc.
- Could be the case a strategic decision counteracts all the gains made via exclusions at portfolio level





Questions?