

# An investment in the past

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*12/2/2019*

## I. Problem statement

This project aims to increase transparency on the carbon footprint that students in the various Harvard Schools ‘inherit’ yearly by enjoying the benefits of the Harvard endowment proceeds in financing their schools’ operations. It additionally seeks to visualize the relative magnitude of that additional footprint compared to the average carbon footprint in the US and other potential carbon reduction levers. It furthermore includes an overview of how much carbon is ‘inherited’ annually from each company in the endowment portfolio (that was filed to SEC and could be matched to CDP data). Lastly, it starts to look into the development of carbon consciousness of the endowment overall and for an average company in the portfolio.

## II. Data sources

See About page in App.

## III. Data cleaning

See About page in App.

## IV. Key assumptions

- The 1% of assets from the endowment that are reported, can be used to extrapolate the footprint for the entire 40.9 bn USD endowment portfolio. (For lack of transparency and a better alternative)
- Ownership of a company means ownership of the carbon footprint caused by that company.
- The carbon footprint can be broken down to the level of an individual student via the share of the “endowment income made available for operations” that a particular Harvard school receives and the size of its student body.
- The double counting of carbon in the “Average annual carbon footprint in US per individual” and the “Additional carbon footprint via Harvard Endowment” is of marginal importance for what it seeks to visualize and may therefore be disregarded.
- The Harvard School of Continuing Education is not included because it doesn’t use any Harvard endowment proceeds to finance its operations.
- Radcliffe is not included because it doesn’t have a student structure that compares to the other schools.
- The carbon footprint of a company includes Scope 1, Scope 2 and biologically sequestered carbon.

## V. Key definitions

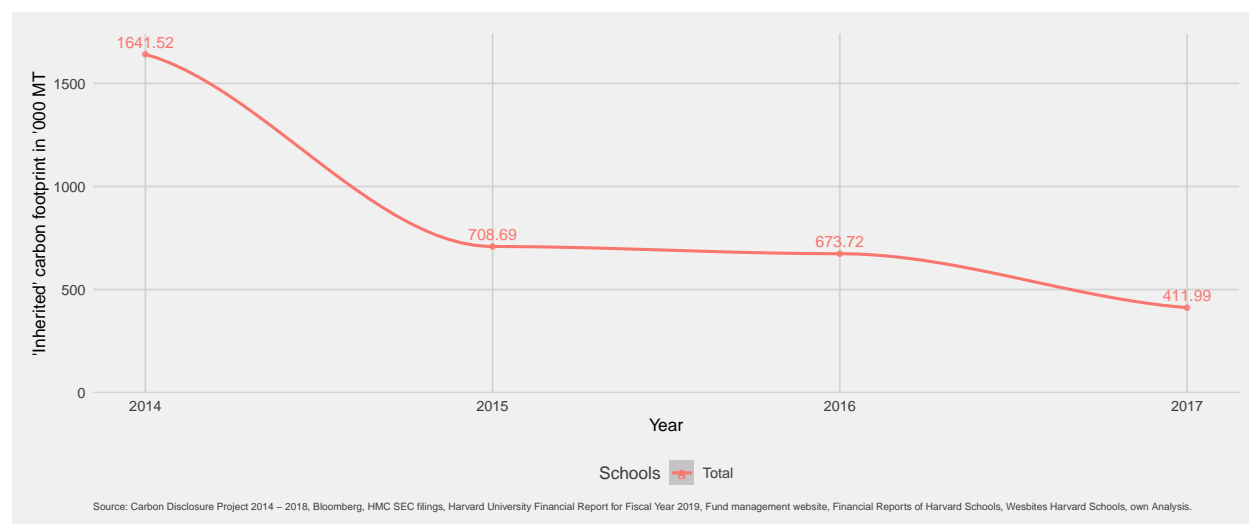
- Carbon footprint: when the graphs refer to the carbon footprint of companies, this includes the sum of scope 1, scope 2 and biologically sequestered carbon as/if reported for a given year in the CDP datasets.

- Scope 1 emissions: Companies report GHG emissions from sources they own or control as scope 1 (See GHG protocol scope 1).
- Scope 2 emissions: Companies report the emissions from the generation of purchased electricity that is consumed in its owned or controlled equipment or operations as scope 2 (See GHG protocol scope 2). When available, I used location-based scope 2 emissions. If location-based scope 2 was not reported, but market-based scope 2 emissions were reported, I used them.
- MT: Metric tonnes of CO2 equivalents.

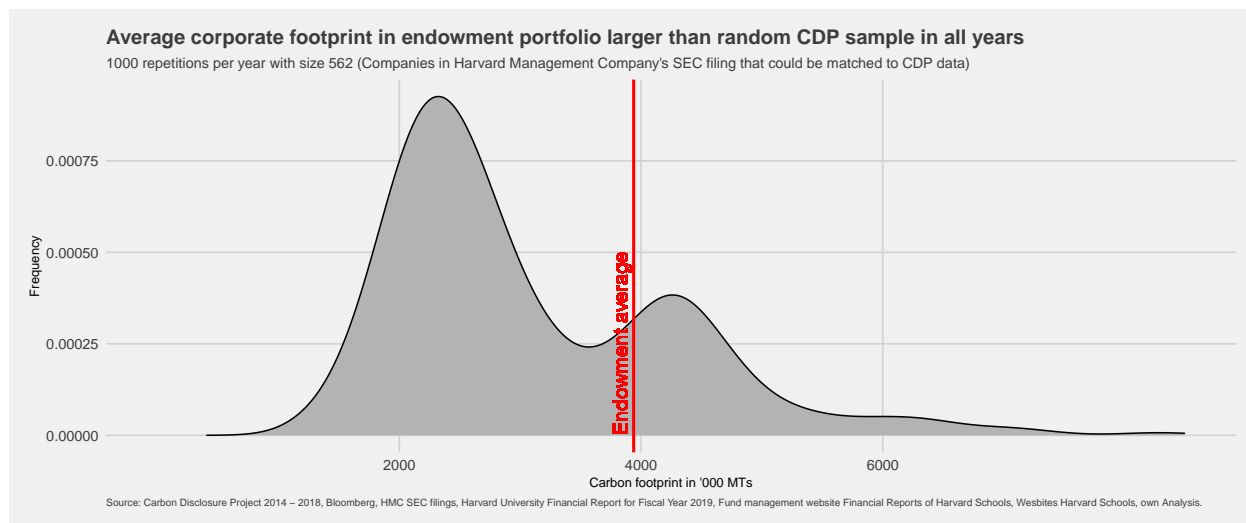
## VI. Key take-aways

### 1. Conclusions on the overall portfolio

The overall carbon footprint of the portfolio that is publicly accessible has been decreasing rapidly over recent years. This is primarily due to an increase of investments in large tech companies that now make up ~2/3 of the reported portfolio. Because of the intransparency around 99% of the portfolio, this hypothesis can only be an extrapolation based on the available data.



While the relative weight of the portfolio was adjusted to reduce the carbon footprint, the average footprint of a company Harvard is invested in decreased much less rapidly from ~4.6 million MT to ~3.9 million MT between 2014 and 2017. Comparing this with a random sample of CDP companies in a given year, indicates that it remains significantly above what we would expect on average. This is true for all years between 2014 and 2017.



## 2. Conclusions on the additional footprint per student

The carbon footprint ‘inherited’ via the endowment has to be understood as the carbon footprint inherited by enjoying the operations of the Harvard Schools in addition to the average annual carbon footprint we cause through our daily activities like food consumption, heating, flights, etc. The size of the carbon footprint ‘inherited’ via the endowment for every student is larger than the average annual carbon footprint per individual in the US for 8 of the 10 Harvard schools. Only students at the Design School land significantly below that. Because of the small student population and the large share of the operating revenue stemming from “Endowment Income made available for operations” (74%) the ‘inherited’ footprint for divinity school students is especially large (4.5x the average individual footprint). For students at all schools a significant reallocation of assets into companies with smaller carbon footprints is by far the largest potential lever on the individual carbon footprint (except having one fewer child, which would reduce the footprint by -117.7 MT p.a.). If the Harvard endowment were invested in assets with half the current carbon footprint, this would remain true by a factor of between 39.2 (Divinity School) and 8.5 (Design School) compared to giving up all meat consumption (- 0.91 MT p.a.).

