Replication instructions for "Dissecting green returns"

This document contains instructions for replicating the paper's figures and tables using the provided code and data.

All provided code and data should be saved in the same directory.

Much of our data are proprietary. For those data, we include in the code's comments a description of the raw data and how to obtain them to be able to run the code successfully.

Below, we list the provided code and data, and we explain which code should be executed to produce each specific figure and table.

Code files provided:

- Dissecting_green_results.do
- estimate_rolling_mkt_betas2.do
- fig2_twins.m
- GMB_size_regs.do
- icc_analysis.do
- make_size_GMBs.do
- prob_wrong2.m

Description of data file "facrets_JFE":

- One observation per month
- Provided in Stata (.dta) and .csv formats
- Runs from Jan 2009 to Dec 2020
- monthdate = monthly date
- facret_E_V1 = green factor return
- facret_E_V4 = GMB return
- facret_E_green_V4 = return on GMB's green leg
- facret_E_brown_V4 = return on GMB's brown leg
- facret_E_green_V4ex = return on GMB's green leg, market-adjusted (see Table 5)
- facret_E_brown_V4ex = return on GMB's brown leg, market-adjusted (see Table 5)
- facret_E_V4ind = industry-adjusted GMB return

Fig. 1. German twin bonds

- Execute "fig2_twins.m" using Matlab
- Figure 1 is saved on line 327

Fig 2. MSCI coverage

- Execute "Dissecting_green_results.do" using Stata
- Figure 2 is saved on line 41

Fig. 3. Returns on value-weighted green and brown portfolios

- Execute "Dissecting_green_results.do" using Stata

- Figure 3 is saved on line 1109

Fig. 4. Implied costs of capital

- Execute "icc_analysis.do" in Stata
- Figure 4 Panel A is saved on line 175
- Figure 4 Panel B is saved on line 180

Fig. 5. Comparing estimators of expected return

- Execute "prob_wrong2.m" using Matlab
- Figure 5 is saved on line 80

Fig. 6. Climate concerns and GMB

- Execute "Dissecting_green_results.do" using Stata
- Figure 6 is saved on line 553

Fig. 7. Counterfactual GMB performance

- Execute "Dissecting_green_results.do" using Stata
- Panel A is saved on line 728
- Panel B is saved on line 820

Fig. 8. Effect of industry adjustment

- Execute "Dissecting_green_results.do" using Stata
- Figure 8 is saved on line 1145

Fig. 9. Weekly response of GMB to climate news: Large versus small stocks

- Execute "estimate_rolling_mkt_betas2.do" using Stata
- Then execute "make_size_GMBs.do" using Stata
- Then execute "GMB_size_regs.do" using Stata
- Figure 9 is saved on line 238

Fig. 10. Green factor

- Execute "Dissecting_green_results.do" using Stata
- Figure 10 is saved on line 1131

Table 1. German government bond yields and returns

- Execute "fig2_twins.m" using Matlab
- Table 1 is created interactively using results throughout the program

Table 2. Industries ranked by environmental scores

- Execute "Dissecting_green_results.do" using Stata
- Table 2 is created on line 88

Table 3. GMB performance

- Execute "Dissecting_green_results.do" using Stata
- Table 3 is created on line 1074

Table 4. Source of GMB performance

- Execute "Dissecting_green_results.do" using Stata
- Table 4 is created on line 619

Table 5. The roles of ESG flows and assets

- Execute "Dissecting_green_results.do" using Stata
- Table 5 is created on line 635

Table 6. Greenness and individual stock returns

- Execute "Dissecting_green_results.do" using Stata
- Table 6 is created on line 968

Table 7. Greenness and individual stock returns: Effects within and across industries

- Execute "Dissecting_green_results.do" using Stata
- Table 7 is created on line 981

Table 8. Stock size and the response to climate news

- Execute "estimate_rolling_mkt_betas2.do" using Stata
- Then execute "make_size_GMBs.do" using Stata
- Then execute "GMB_size_regs.do" using Stata
- Table 8 is created on lines 83-84

Table 9. Explaining value and momentum with the green factor

- Execute "Dissecting_green_results.do" using Stata
- Table 9 is created on line 1057