Social Responsibility Ratings, Returns, Size Effects

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This paper

Measures of social responsibility impact firms' valuations

- Jiao (2010), stakeholder welfare and firms' price/dividend ratios
- Borgers et al (2010), stakeholder relations and expected returns
- Guiso et al (2013), corporate culture and performance (productivity, attractiveness on the job market ...)

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Can we observe an impact on cross-sections of returns?

Small and large firms have different corporate culture

- Sraer and Thesmar (2007), family firms

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Do we find differences across firm sizes?

Our analysis

- Social responsibility performance is potentially linked to ...
  - ... book-to-market ratio
  - ... size
- Verify this is the case
- Size premium and Value premium are well known factors (Fama and French 1992)
- Additional abnormal returns? (i.e. αs?)
- Differences in abnormal returns for small and large firms?

Our method

Social responsibility ratings from KLD (Kinder, Lydenberg, Domini)

- on the S&P500 since 1991
- extended to larger sample post 2003 (analysis on 2550 firms/year on average), all publicly traded on US markets
- social responsibility ratings under categories
  - Community
  - Diversity
  - Employee relations
  - Environment
  - Product
  - Total rating

Our method

Fama-McBeth (1973) cross-sectional analysis

- For each year (July), form portfolios by ranking firms according to their ratings
  - 10 portfolios for each category
  - 3 portfolios for 20% smallest and the 20% largest firms
  - both outright ratings, and industry related ratings ("best in class" analysis)
  - $\rightarrow 96 \times 2$ portfolios
- Obtain returns on value-weighted portfolios entirely sold and re-invested into on a yearly basis

Our method

Fama-McBeth (1973) cross-sectional analysis

- In the time series, obtain loadings on Fama-French (1992) 3-factors, market, value and size (from Ken French website, monthly data)

$$R_t^i - R_{f,t} = \beta_i \left(R_t^m - R_{f,t}\right) + \gamma_i HML_t + \delta_i SMB_t + \epsilon_t^i$$

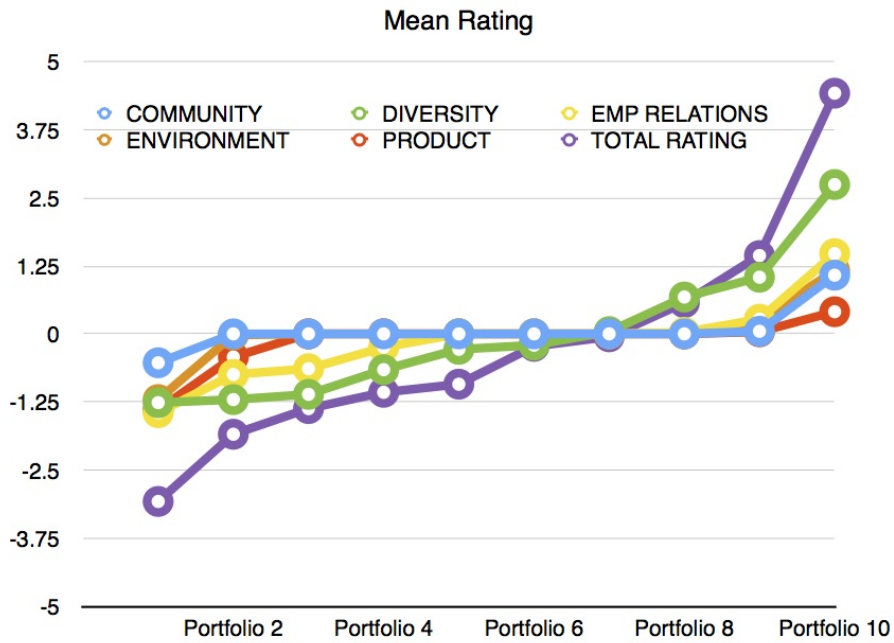
- In the cross-section, for each month t, regress returns R_t^i on the factor loadings $(\beta_i, \gamma_i, \delta_i)$:

$$R_t^i - R_{f,t} = \lambda_{m,t}\beta_i + \lambda_{HML,t}\gamma_i + \lambda_{SMB,t}\delta_i + \alpha_t^i$$

- Do we find significant non-zero αs?

Results-Ratings

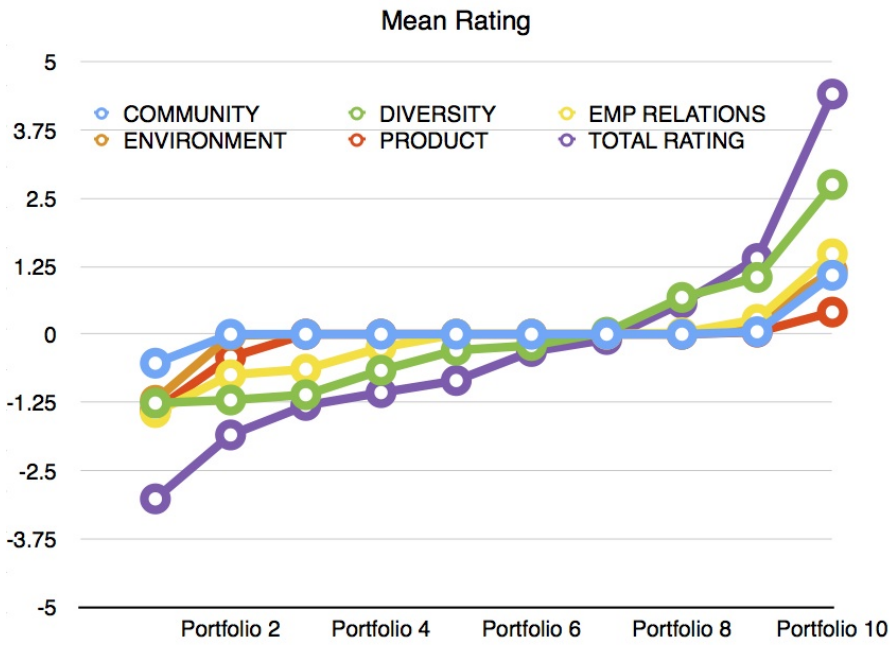
Portfolio mean ratings: absolute ratings



$\rightarrow$ cross-sectional variations in ratings mostly for: employee relations, diversity and total rating.

Results-Ratings

Portfolio mean ratings: relative to industry ratings



$\rightarrow$ cross-sectional variations in ratings mostly for: employee relations, diversity and total rating.

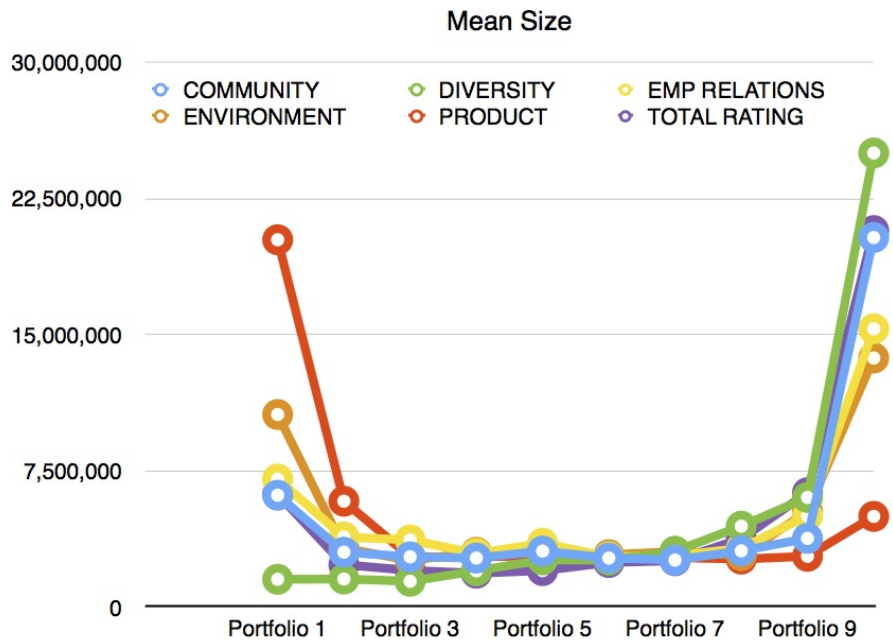
Results-Ratings

Portfolio mean ratings: small firms versus large firms

$\rightarrow$ cross-sectional variations stronger for large firms than for small firms.

Results-Size

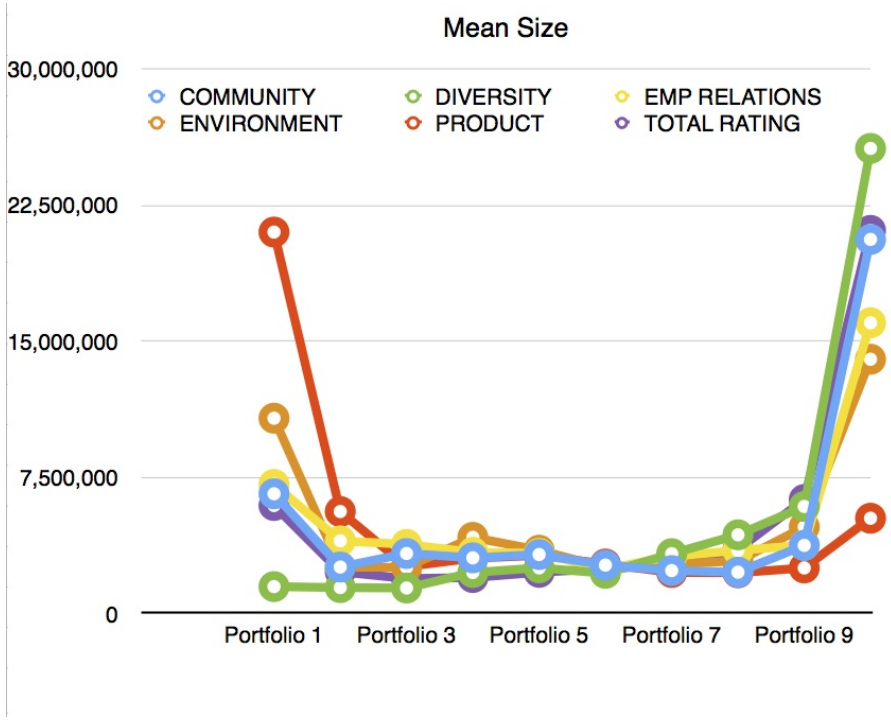
Portfolio mean size: absolute ratings



$\rightarrow$ U-shaped relation between ratings and size (except diversity: the larger the firm the better the score).

Results-Size

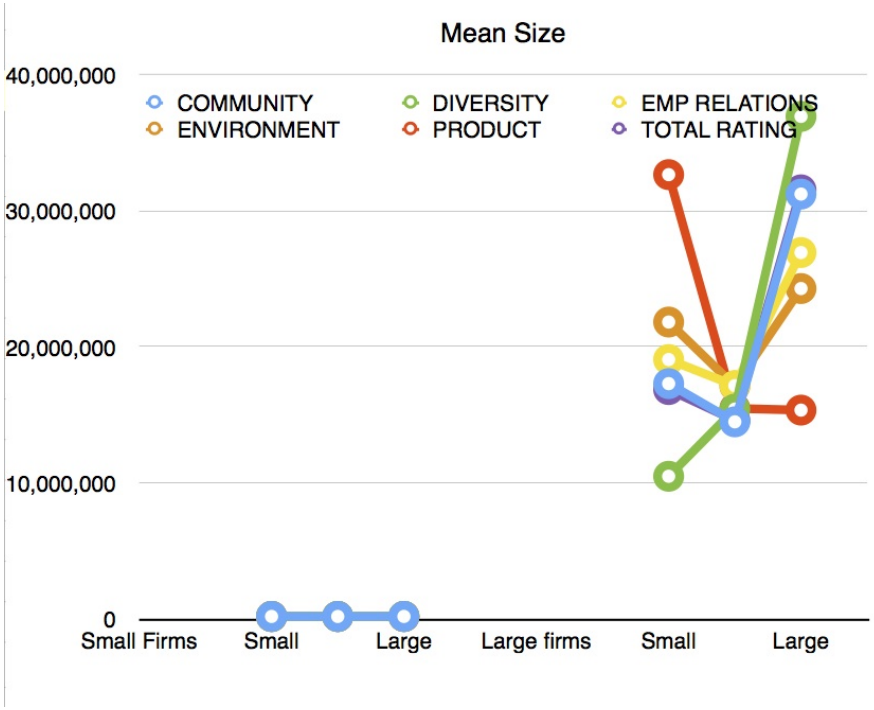
Portfolio mean size: relative to industry ratings



$\rightarrow$ U-shaped relation between ratings and size (except diversity: the larger the firm the better the score).

Results-Size

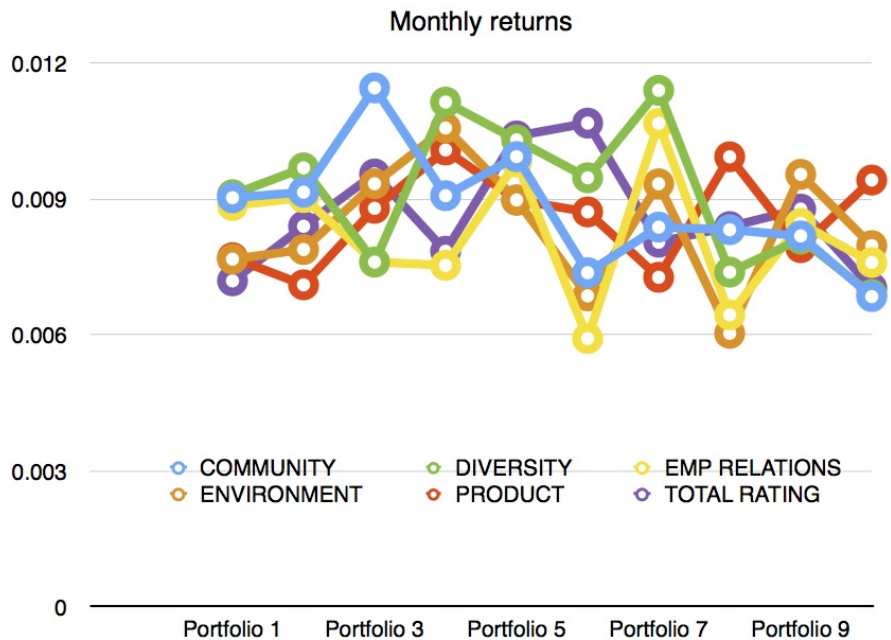
Portfolio mean size: small firms versus large firms



$\rightarrow$ Firms in the small group are on average 2% the size of those in the large firms group. Among the large firms, the U-shaped relation obtains (except diversity: the larger the firm the better the score).

Results-Average Returns

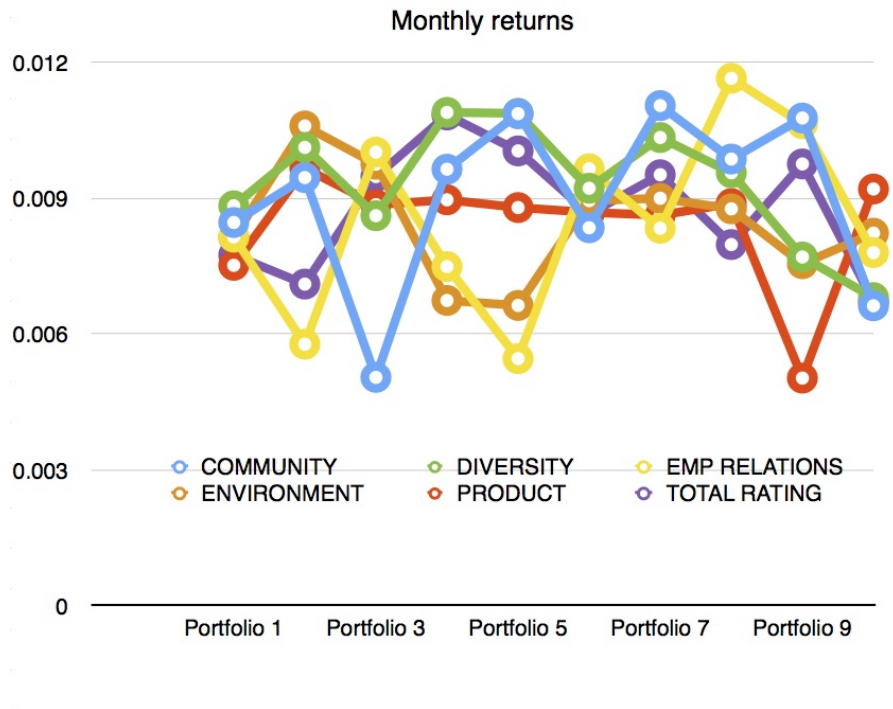
Portfolio mean returns: absolute ratings



$\rightarrow$ No clear pattern.

Results-Average Returns

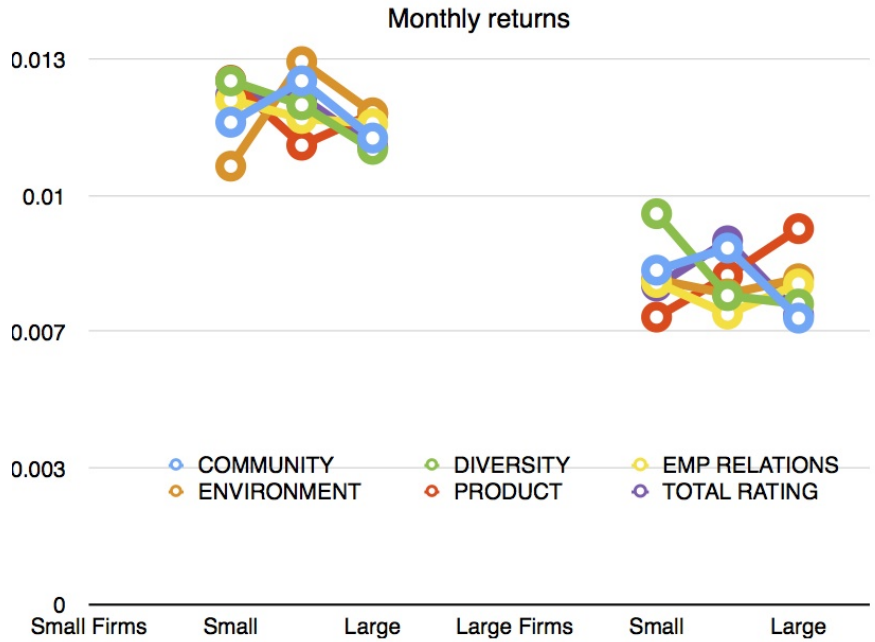
Portfolio mean returns: relative to industry ratings



$\rightarrow$ No clear pattern.

Results-Average Returns

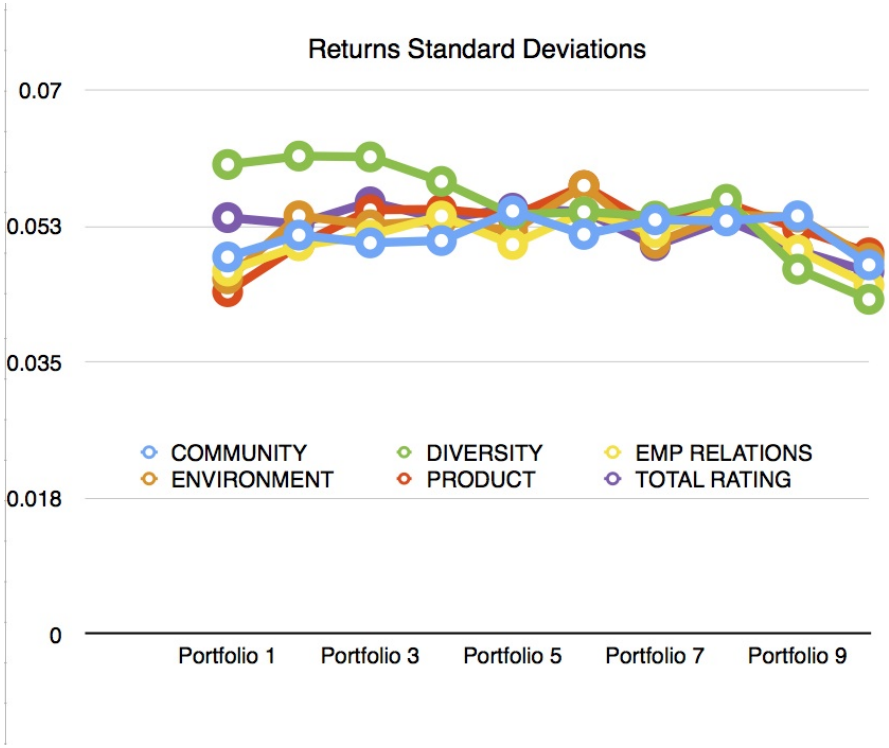
Portfolio mean returns: small firms versus large firms



$\rightarrow$ No clear pattern, except for the known size effect.

Results-Stdev Returns

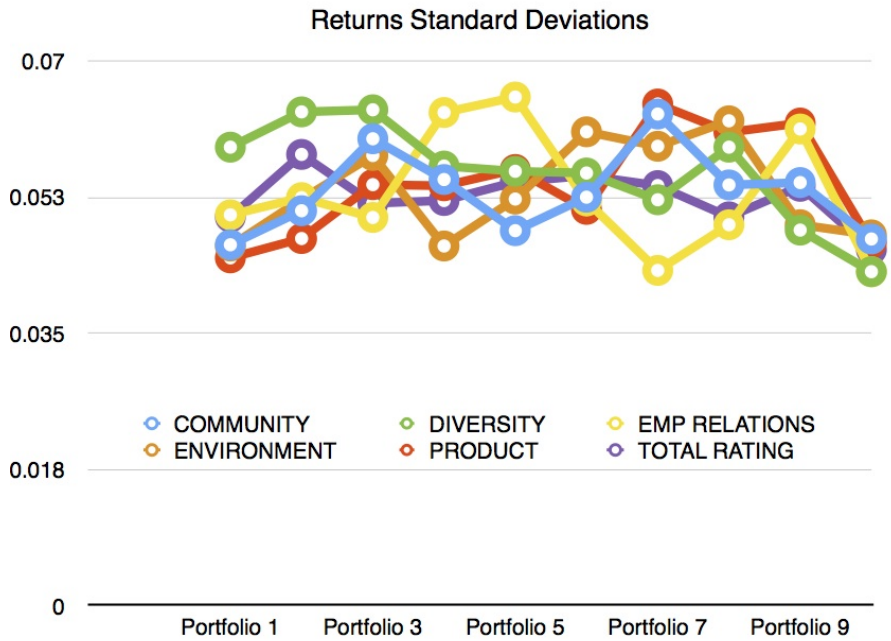
Portfolio stdev returns: absolute ratings



$\rightarrow$ No clear pattern (except diversity: the larger the score the safer the firm).

Results-Stdev Returns

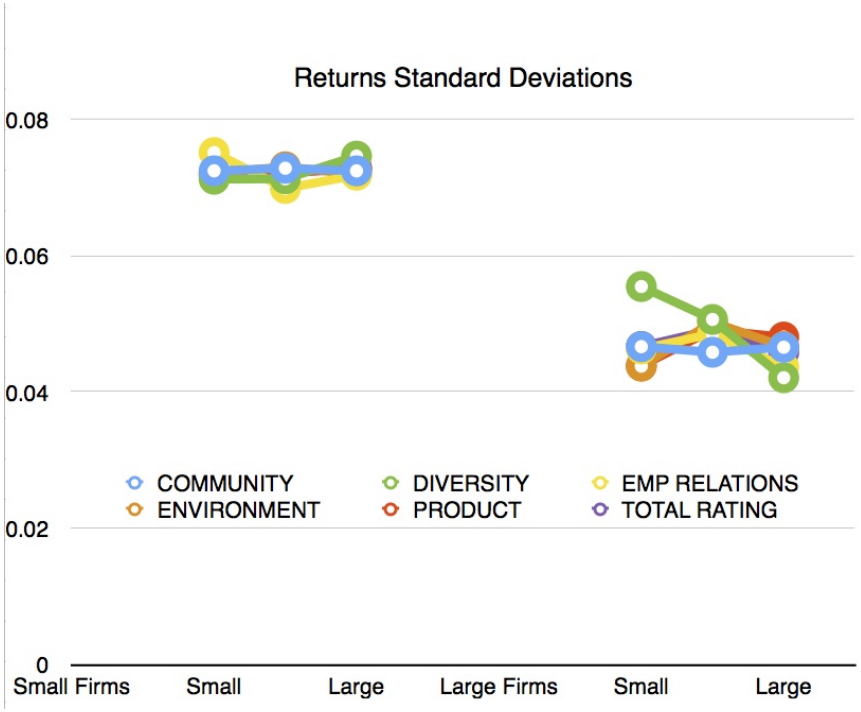
Portfolio stdev returns: relative to industry ratings



→ No clear pattern (except diversity: the larger the score the safer the firm).

Results-Stdev Returns

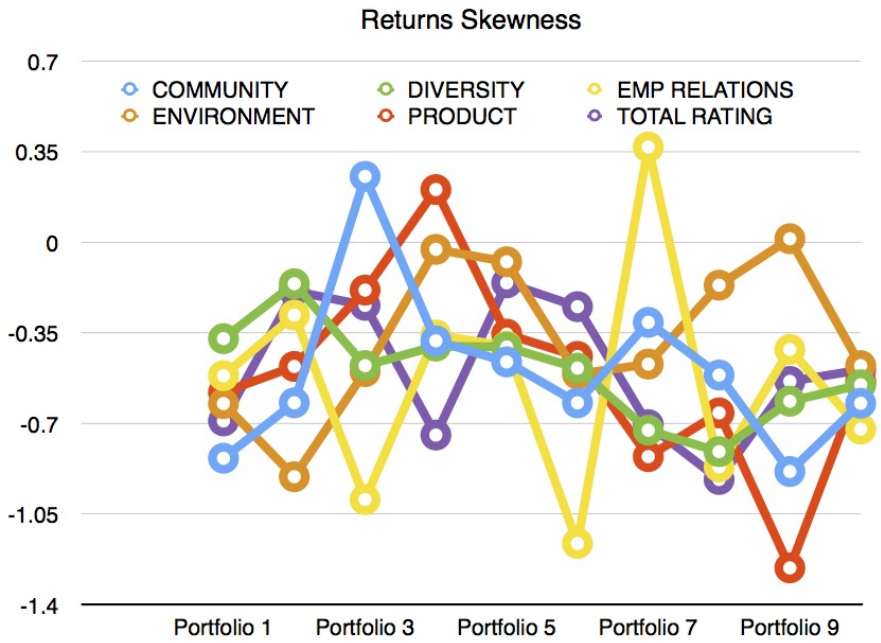
Portfolio stdev returns: small firms versus large firms



$\rightarrow$ No clear pattern beyond the size effect (except diversity: the larger the score the safer the firm).

Results-Skewness Returns

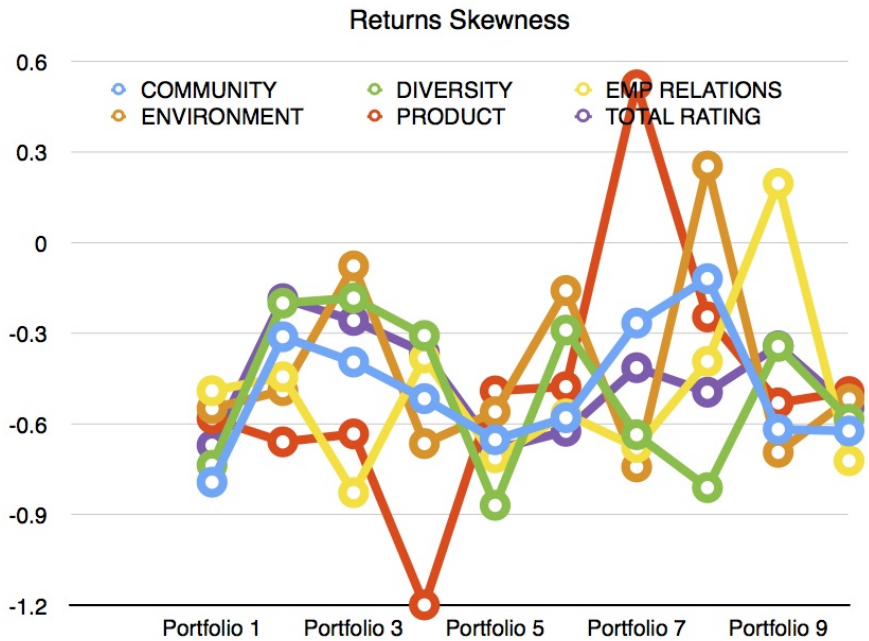
Portfolio skew returns: absolute ratings



$\rightarrow$ No clear pattern (larger ratings do not prevent against large negative returns).

Results-Skewness Returns

Portfolio skew returns: relative to industry ratings



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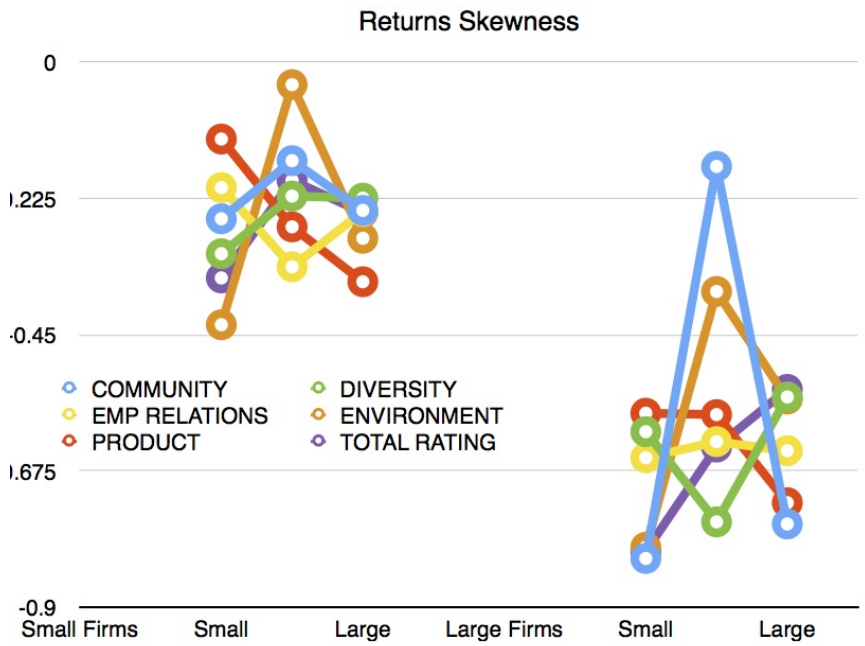
Results-Skewness Returns

Portfolio skew returns: small firms versus large firms



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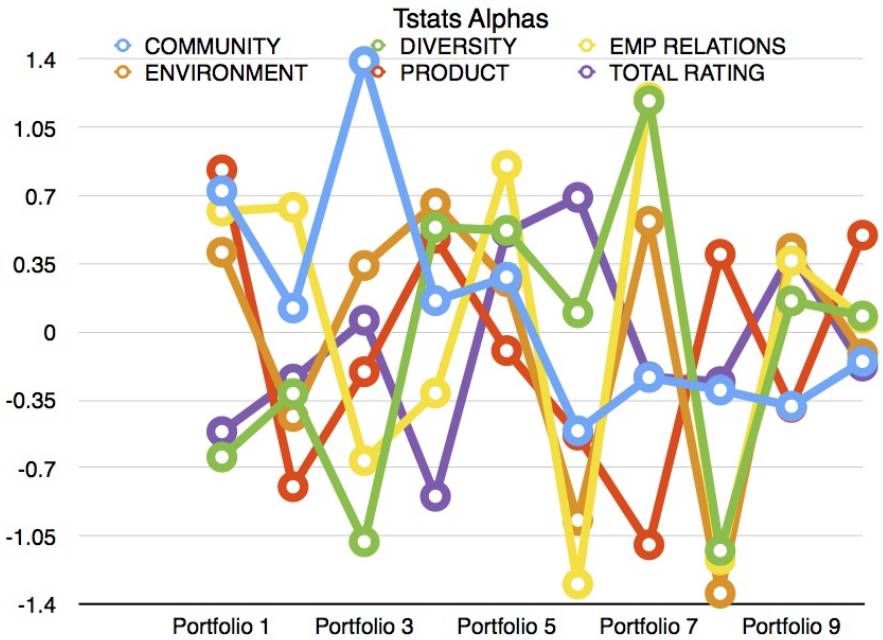
Results-Abnormal returns?

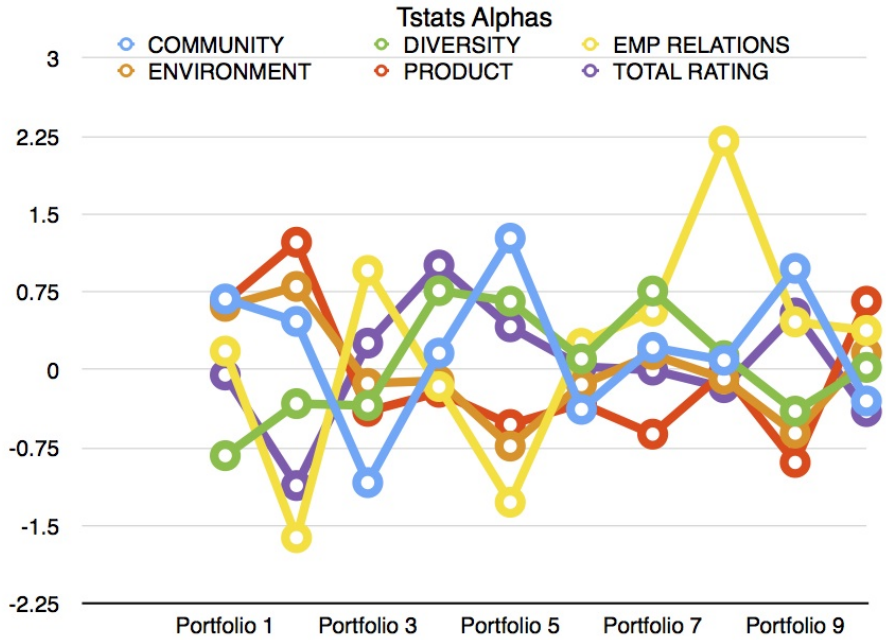
Portfolio alpha Tstats: absolute ratings



$\rightarrow$ Nothing significant: the Fama-French 3 factors fully explain the returns i.e. investing in higher ratings is not penalized per se.

Results-Abnormal returns?

Portfolio alpha Tstats: relative to industry ratings



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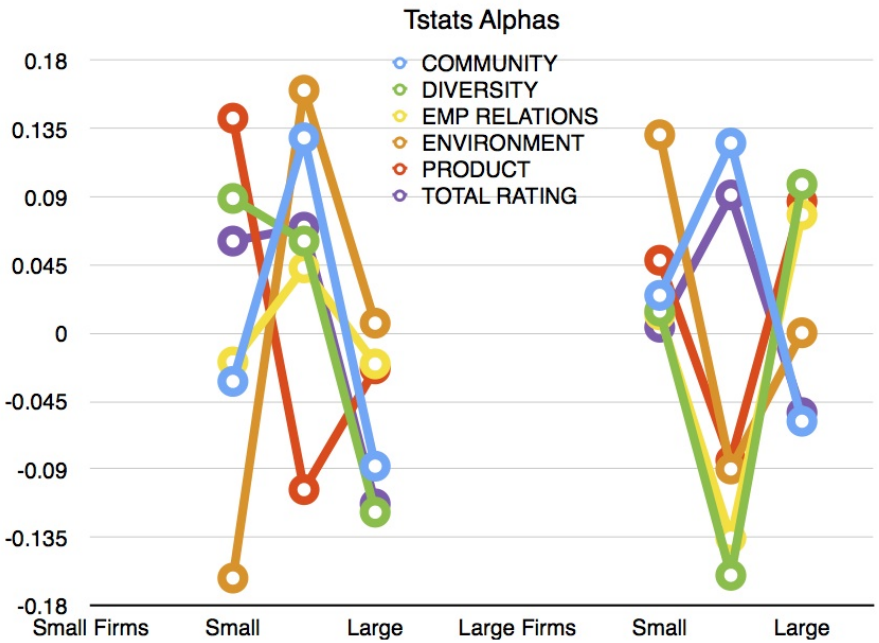
Results-Abnormal returns?

Portfolio alpha Tstats: small firms versus large firms



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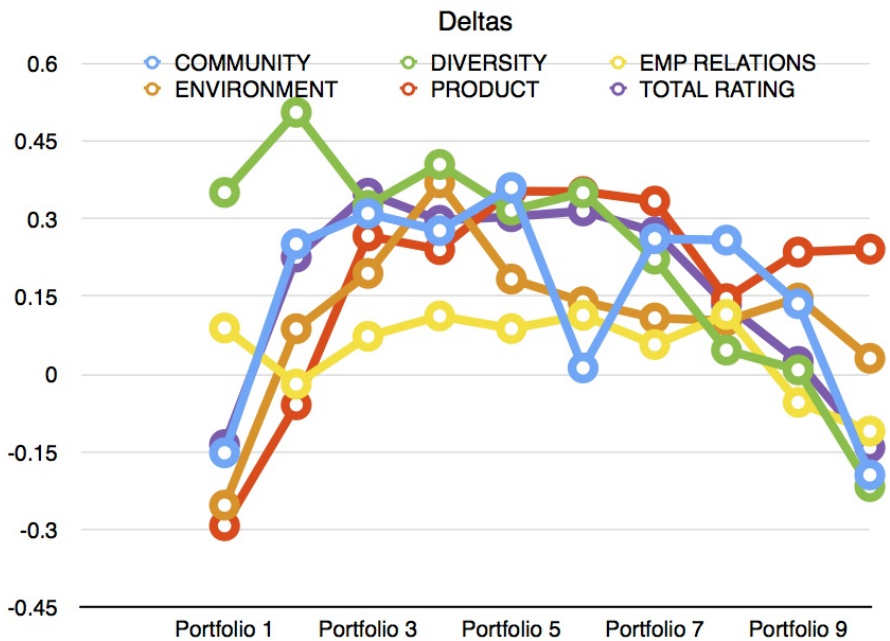
Results-Loadings on Size premium

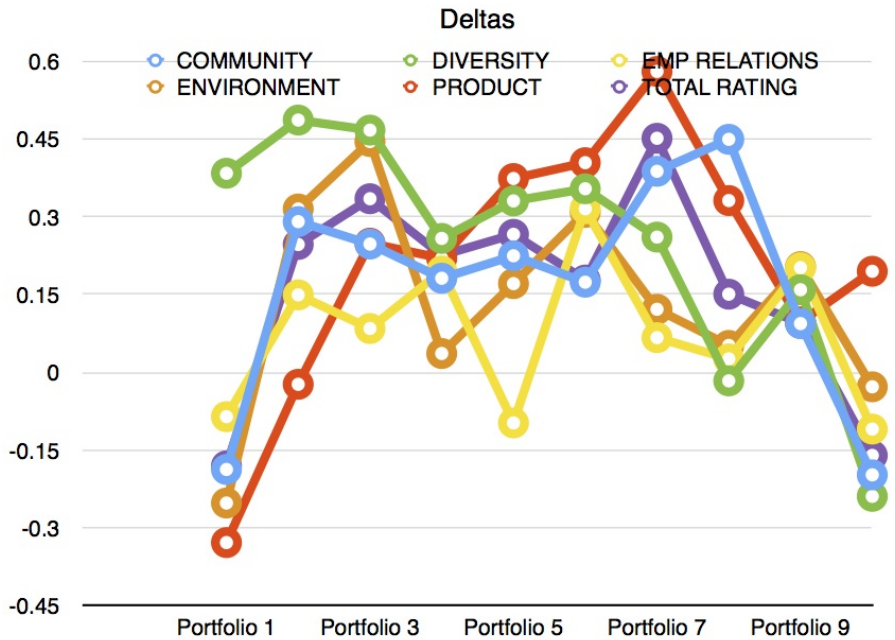
Portfolio delta: absolute ratings



$\rightarrow$ Perfectly reflects the cross-section of size in the ratings.

Results-Loadings on Size premium

Portfolio delta: relative to industry ratings



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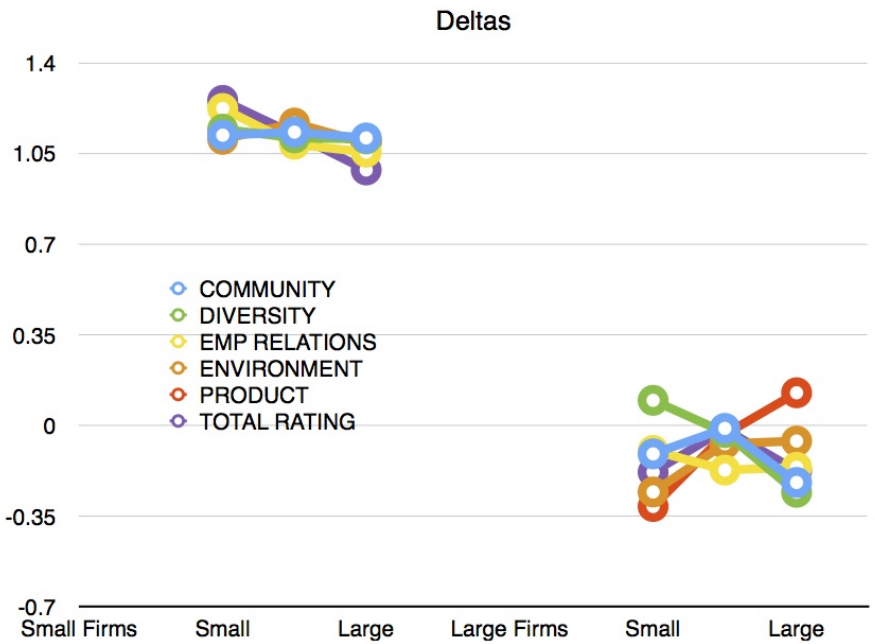
Results-Loadings on Size premium

Portfolio delta: small firms versus large firms



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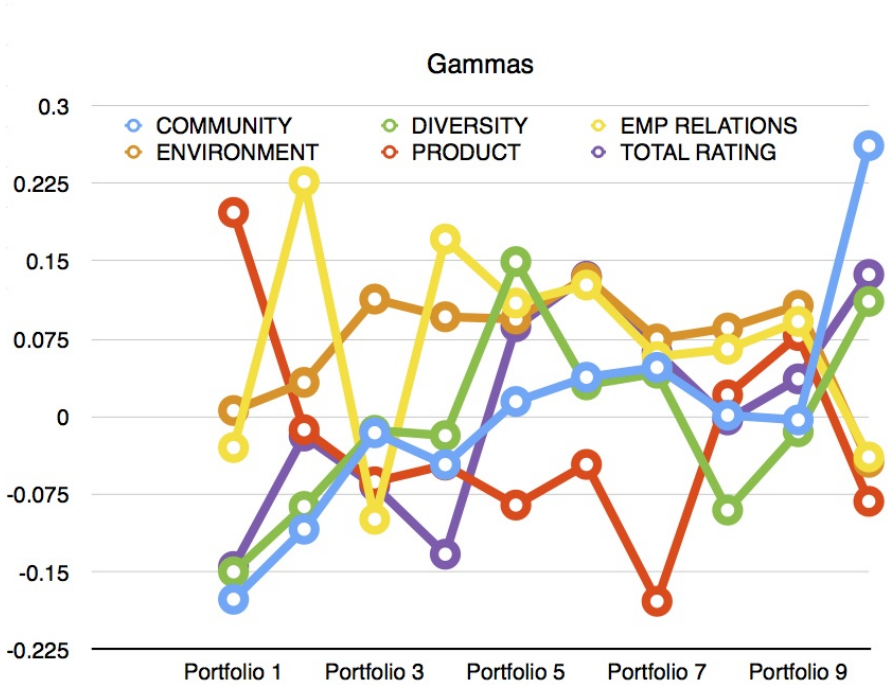
Results-Loadings on Value premium

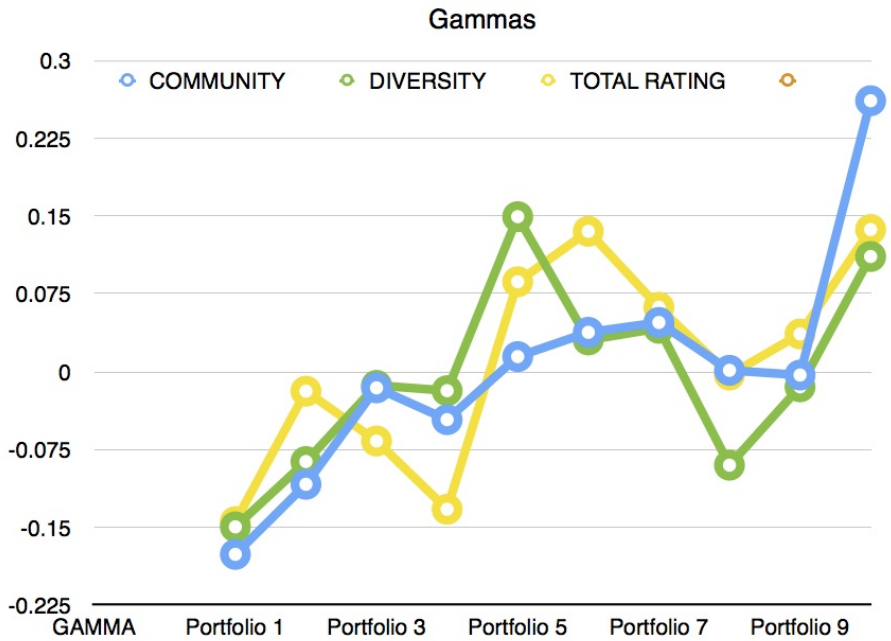
Portfolio gamma: absolute ratings



$\rightarrow$ Not decreasing with ratings (as literature suggests).

Results-Loadings on Value premium

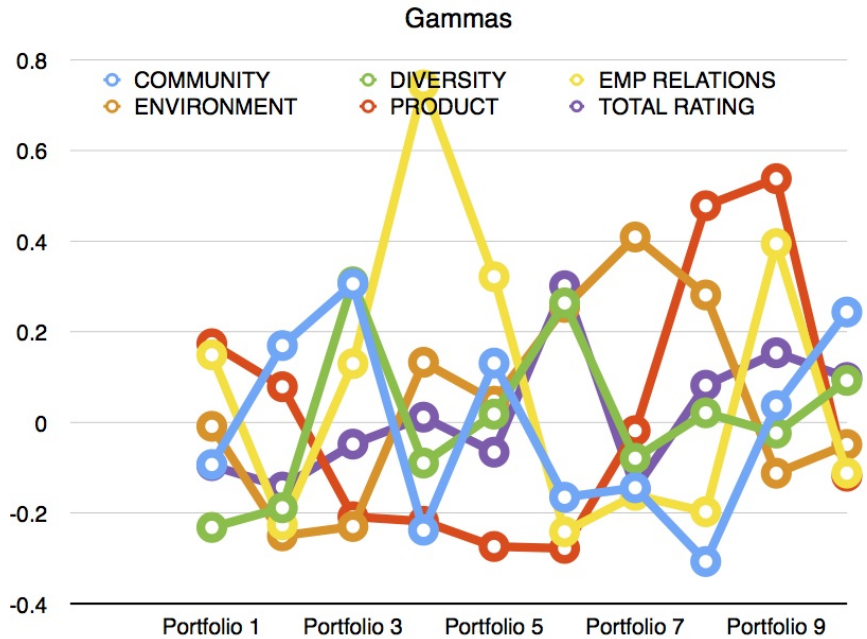
Portfolio gamma: absolute ratings



$\rightarrow$ In fact, increasing for ratings for which there is a "real" cross-section.

Results-Loadings on Value premium

Portfolio gamma: relative to industry ratings



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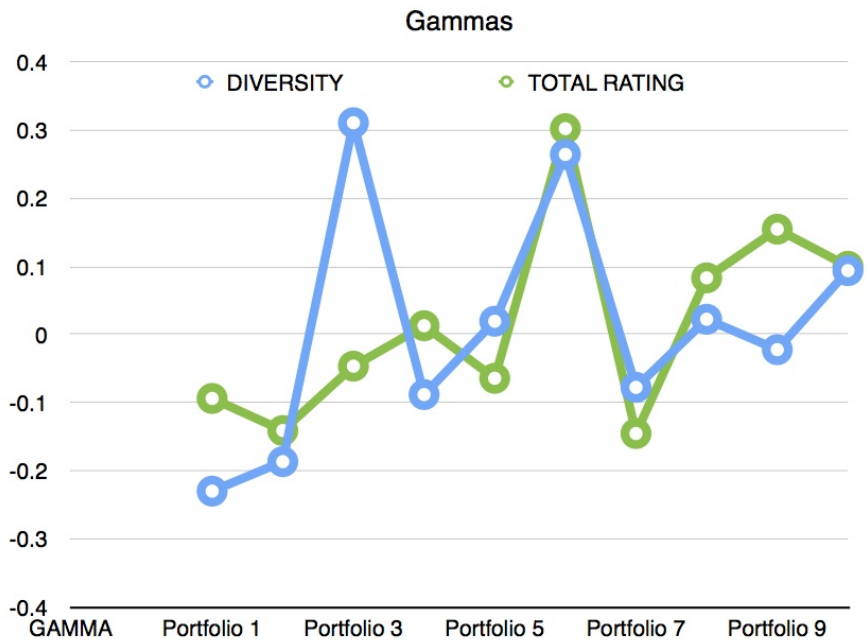

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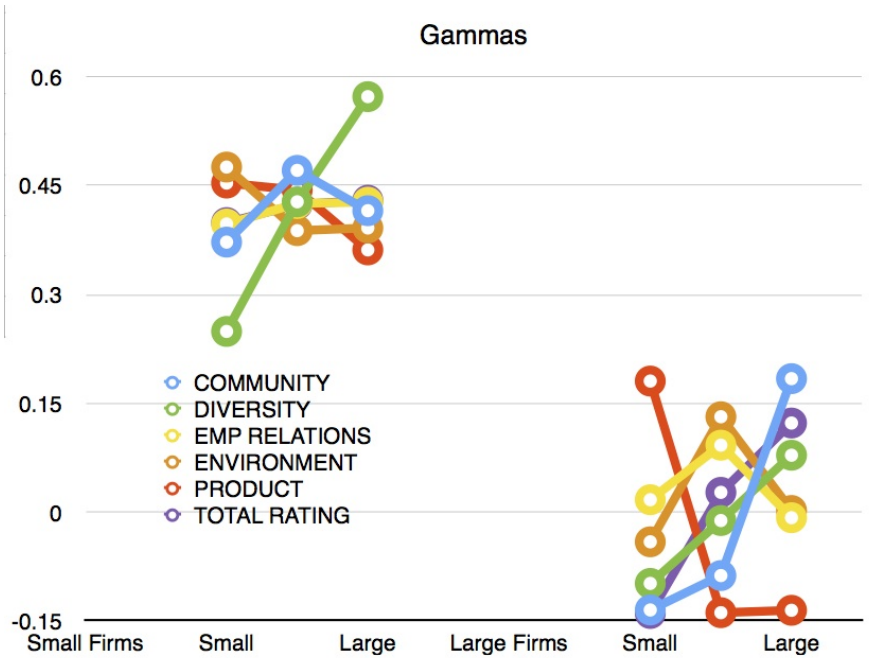
Results-Loadings on Value premium

Portfolio gamma: small firms versus large firms



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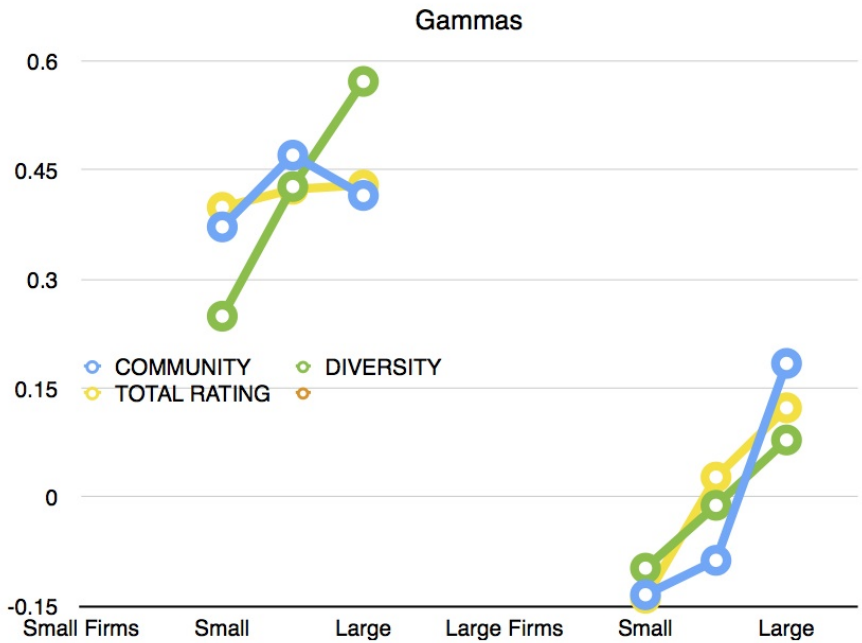

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Conclusion

- KLD ratings do not result in a "new factor"
- $\rightarrow$ good news in terms of investment
- Link to size seems fully priced
- Link to Value versus Growth to be further explored
- Link to long-term shocks?
- Still preliminary work, more to come!