



Online-Appendix zu

„The Value of CSR in Times of Increased Policy Uncertainty: Evidence from the Brexit Referendum“

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APPENDIX

TABLE 4
Empirical Evidence on the Effects of CSR on Corporate Financial Performance

| Financial Performance | CSR Measure | Author | Sample | Countries | Relationship |
|---|---|------------------------------------|-----------|-----------|--|
| Panel A: Overall Performance | | | | | |
| Shareholder value: returns | Aggregated and individual scores for employee relationships, environment, and community activities | Brammer, Brooks and Pavelin (2006) | 2002-2004 | UK | Lower shareholder value is realised by firms with higher social performance; significantly negative relationship exists between scores on a composite social performance indicator and stock returns |
| Valuation multipliers (book-to-market, price-to-earnings ratio), returns over 12-months | KLD: Community, environment, diversity, product concerns and strengths | Bird <i>et al.</i> (2007) | 1991-2003 | USA | Stock returns hold a positive relationship with employee-related activities, however there is an inverse relationship with environmental activities |
| Stock returns, ROA | KLD: aggregated score across employee relations, product, community relations, environment, equality, environmental issues, military contracts; individual levels | Nelling and Webb (2009) | 1993-2000 | USA | Greater firm investment regarding CSR devoted to employee relations is triggered by stronger stock market performance, however, financial performance is not influenced by CSR activities devoted to employee relations |
| Tobin's Q, ROA | Environmental performance by Innovest Strategic Value Advisors | Guenster <i>et al.</i> (2011) | 1997-2004 | na | Environmental activities have a positive relationship with operating performance and firm value |
| Tobin's Q | Aggregated KLD score across: employee relations, diversity, product characteristics, community relations, environmental performance | Jiao (2010) | 1992-2003 | USA | A one-basis point increase in CSR measure results in an increase in Tobin's Q by 0.587. These positive effects are driven by firms' performance on employee relations and environmental issues, while the valuation effects vary across stakeholders |

TABLE 4 – *Continued*

| Financial Performance | CSR Measure | Author | Sample | Countries | Relationship |
|--|---|--|-------------|-----------|--|
| Industry-adjusted Tobin's Q | KLD community, diversity, employee relations, environment, and product. Governance and monitoring scores from Risk metrics | Jo and Harjoto (2011) | 1993-2004 | USA | CSR subclasses controlling for wider external social enhancement for instance community relation and environmental concerns, are less likely to enhance firm value that CSR subclasses controlling for internal social enhancement within the firm |
| Systematic & idiosyncratic risk | Composite measure across community, diversity, employee relations, environment, product, human rights, corporate governance | Bouslah, Kryzanowski and M'Zali (2013) | 1991 - 2007 | USA | Positive association between Employee, Diversity and Corporate Governance concerns and firm risk (for S&P500 Companies); Negative association between Community and risk |
| Systematic risk | Community, Employment and Environmental Concerns | Oikonomou, Brooks and Pavelin (2012) | 1992 - 2009 | USA | Community, employment, environmental concerns and systematic risk exhibit a significant positive relation |
| Firm risk (idiosyncratic and systematic risk) | Community, diversity, employee relations, environment, and product | Jo and Na (2012) | 1991-2010 | USA | CSR engagement is found to have an inverse relationship with firm risk after controlling for multiple firm characteristics |
| Cost of corporate debt and credit ratings | Community, diversity, employee relations, environmental issues, product safety, quality. | Oikonomou, Brooks and Pavelin (2014) | 1991-2008 | USA | Through lower and higher corporate bond yield spreads, good performance is rewarded while corporate transgressions are penalized, respectively |
| Stock price crash risk (conditional skewness of return distribution) | Community, diversity, employee relations, environment, product | Kim, Li and Li (2014) | 1995-2009 | USA | After controlling for alternative determinants of crash risk, the relationship of CSR performance and future crash risk is of negative nature |

TABLE 4 – *Continued*

| Financial Performance | CSR Measure | Author | Sample | Countries | Relationship |
|---|--|------------------------------------|-----------|--------------|--|
| KZ index of capital constraints, indicator for absence of stock repurchase activity, SA index, WW index | Environmental, social, governance measure as composite measure | Cheng, Ioannou and Serafeim (2014) | 2002-2009 | 49 countries | CSR overall, as well as social and environmental activities, reduces capital constraints. |
| Analyst dispersion, stock return volatility, cost of capital, firm value | Community, corporate governance, diversity, employee relations, environment, human rights, and product | Harjoto and Jo (2015) | 1993-2009 | USA | A relationship for the overall CSR score is of a positive nature, while the normative CSR score exhibits an inverse relationship |
| Tobin's Q, equity issuance, excess growth, debt issuance, investment intensity, probability of bankruptcy, payable turnover, sales growth | Environmental and social performance score | Ghoul, Guedhami and Kim (2017) | 2003-2010 | 53 countries | Positive impact of CSR on firm value, transaction costs, access to financing, lower default risk, higher future sales growth; Effects are more pronounced in countries with reduced market-supporting institutions |
| Information asymmetries: bid-ask spread; dispersion of analysts' forecasts; price impact measure | Community, corporate governance, diversity, employee relations, environment, human rights, and product | Cui, Jo and Na (2018) | 1991-2010 | USA | Mitigation of information asymmetries |

TABLE 4 – *Continued*

| Financial Performance | CSR Measure | Author | Sample | Countries | Relationship |
|--|---|---|-------------|-----------|---|
| Panel B: Shock-based Evidence | | | | | |
| Excess returns, operating performance, access to financing | Aggregated score across community, diversity, employee relations, environment, human rights | Lins, Servaes and Tamayo (2017) | 2008 - 2009 | USA | Pays off during periods of crisis - more resistant |
| Firm risk: systematic risk, idiosyncratic risk, volatility | Composite measure across community, diversity, employee relations, environment, product, human rights, corporate governance | Bousslah, Kryzanowski and M'Zali (2018) | 1991 - 2012 | USA | Risk reduction during an adverse economic environment |
| Tobin's Q, stock returns | Social, Environmental and Governance | Bousslah, Kryzanowski and M'Zali (2018) | | USA | Positive effect on Tobin's Q before and after the 2008 financial crisis, negative effect during the 2008 financial crisis; CSR firms experience higher changes in returns than firms without CSR disclosure during the financial crisis |
| Cumulative abnormal returns | Community, corporate governance, employee relations, environmental stewardship, diversity, product quality | Godfrey, Merrill and Hansen (2009) | 1991-2002 | USA | Positive effect on CAR during firm-level legal shocks |

TABLE 5
Descriptive Statistics for Cross-Sectional Regression

This table presents the descriptive statistics of the ESG scores, firm characteristics and financial health variables as of 31/12/2015, factor exposures estimated over the two years prior to 2016, and shock-period BHAR employed in the cross-sectional regression. Variables are defined in TABLE 1. Further note that CSR measures as of 2015 and 2016 are included as well. The suffix *w* indicates winsorization at the 1% and 99% level. * in the correlation matrix denotes significance at the 0.01 level.

| Panel A: Summary statistics | | | | | | | | | | |
|---------------------------------------|---------|---------|--------|---------|---------|--------|---------|----------|----------|---------|
| Variables | Mean | St.Dev | min | max | p25 | Median | p75 | skewness | kurtosis | N |
| esg_14 | 71.628 | 22.962 | 3.31 | 96.37 | 55.68 | 80.125 | 90.575 | -.918 | 2.858 | 320 |
| es_14 | 65.31 | 22.738 | 8.145 | 95.295 | 48.222 | 69.265 | 85.213 | -.579 | 2.311 | 320 |
| gov_14 | 80.382 | 14.173 | 3.53 | 97.15 | 75.28 | 84.805 | 90.035 | -1.976 | 8.325 | 320 |
| esg_15 | 78.105 | 19.336 | 7.43 | 96 | 70.18 | 86.17 | 92.39 | -1.507 | 4.712 | 308 |
| es_15 | 71.674 | 19.954 | 10.42 | 95.345 | 58.375 | 77.535 | 88.505 | -.915 | 3.08 | 308 |
| cgs_15 | 81.801 | 15.595 | 16.06 | 97.83 | 78.385 | 86.315 | 92.165 | -2.016 | 7.141 | 308 |
| esg_16 | 83.07 | 15.453 | 12.86 | 96.36 | 78.955 | 88.74 | 93.46 | -2.037 | 7.117 | 292 |
| es_16 | 76.479 | 17.134 | 17.85 | 95.575 | 66.66 | 81.338 | 89.865 | -1.168 | 3.806 | 292 |
| cgs_16 | 84.746 | 13.623 | 20.95 | 97.89 | 81.67 | 89.5 | 93.345 | -2.048 | 7.608 | 292 |
| sizew | 14.575 | 1.583 | 11.012 | 18.989 | 13.432 | 14.406 | 15.382 | .592 | 3.163 | 274 |
| ltd_atw | .204 | .172 | 0 | .781 | .052 | .191 | .307 | .817 | 3.446 | 274 |
| dlc_atw | .289 | .163 | .027 | .868 | .171 | .265 | .385 | .994 | 4.232 | 274 |
| cash_taw | .11 | .1 | .003 | .573 | .038 | .078 | .144 | 1.916 | 7.69 | 274 |
| profw | .094 | .08 | -.073 | .414 | .048 | .08 | .124 | 1.402 | 6.624 | 274 |
| beta_rmr fw | 1.005 | .784 | -.607 | 3.049 | .463 | .966 | 1.553 | .209 | 2.641 | 309 |
| beta_umd w | -.184 | .851 | -3.732 | 1.336 | -.441 | 0 | .294 | -1.731 | 7.629 | 309 |
| beta_hml w | .012 | 1.172 | -2.508 | 4.44 | -.618 | 0 | .487 | .974 | 5.509 | 309 |
| beta_smb w | .678 | .969 | -1.472 | 3.402 | 0 | .53 | 1.238 | .55 | 3.269 | 309 |
| bhar w | -.021 | .313 | -.56 | 1.212 | -.158 | -.094 | .087 | 1.569 | 6.487 | 309 |
| Panel B: Pairwise correlations | | | | | | | | | | |
| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| (1) esg_14 | 1.000 | | | | | | | | | |
| (2) es_14 | 0.918* | 1.000 | | | | | | | | |
| (3) cgs_14 | 0.629* | 0.484* | 1.000 | | | | | | | |
| (4) esg_15 | 0.942* | 0.852* | 0.612* | 1.000 | | | | | | |
| (5) es_15 | 0.897* | 0.966* | 0.500* | 0.889* | 1.000 | | | | | |
| (6) cgs_15 | 0.543* | 0.388* | 0.734* | 0.662* | 0.417* | 1.000 | | | | |
| (7) esg_16 | 0.885* | 0.812* | 0.624* | 0.921* | 0.833* | 0.588* | 1.000 | | | |
| (8) es_16 | 0.862* | 0.934* | 0.489* | 0.866* | 0.952* | 0.413* | 0.887* | 1.000 | | |
| (9) cgs_16 | 0.491* | 0.356* | 0.754* | 0.532* | 0.368* | 0.828* | 0.608* | 0.382* | 1.000 | |
| (10) sizew | 0.540* | 0.548* | 0.269* | 0.495* | 0.524* | 0.263* | 0.456* | 0.494* | 0.252* | 1.000 |
| (11) ltd_atw | 0.036 | 0.065 | -0.034 | 0.034 | 0.059 | 0.009 | 0.040 | 0.053 | -0.003 | 0.285* |
| (12) dlc_atw | 0.087 | 0.086 | 0.111 | 0.063 | 0.064 | 0.063 | 0.130* | 0.113 | 0.112 | -0.172* |
| (13) cash_taw | -0.250* | -0.245* | -0.103 | -0.293* | -0.265* | -0.094 | -0.320* | -0.285* | -0.067 | -0.176* |
| (14) profw | -0.015 | -0.066 | -0.059 | -0.044 | -0.087 | -0.081 | -0.014 | -0.075 | -0.024 | -0.248* |
| (15) beta_rmr fw | -0.001 | -0.021 | -0.022 | 0.030 | -0.003 | 0.070 | -0.031 | -0.031 | -0.010 | -0.096 |
| (16) beta_umd w | 0.080 | 0.054 | -0.024 | 0.030 | 0.021 | -0.017 | 0.106 | 0.070 | 0.035 | 0.020 |
| (17) beta_hml w | -0.124* | -0.129* | 0.047 | -0.127* | -0.127* | 0.087 | -0.094 | -0.126* | 0.118* | -0.006 |
| (18) beta_smb w | -0.212* | -0.241* | -0.064 | -0.162* | -0.216* | -0.004 | -0.257* | -0.258* | -0.133* | -0.412* |
| (19) bhar w | -0.133* | -0.088 | -0.062 | -0.133* | -0.103 | -0.012 | -0.139* | -0.156* | 0.017 | 0.046 |

TABLE 5 Fehler! Kein gültiges Resultat für Tabelle. – *Continued*

| Variables | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) |
|-----------------|---------|---------|--------|---------|--------|---------|--------|-------|-------|
| (1) esg_14 | | | | | | | | | |
| (2) es_14 | | | | | | | | | |
| (3) cgs_14 | | | | | | | | | |
| (4) esg_15 | | | | | | | | | |
| (5) es_15 | | | | | | | | | |
| (6) cgs_15 | | | | | | | | | |
| (7) esg_16 | | | | | | | | | |
| (8) es_16 | | | | | | | | | |
| (9) cgs_16 | | | | | | | | | |
| (10) sizew | | | | | | | | | |
| (11) ltd_atw | 1.000 | | | | | | | | |
| (12) dlc_atw | -0.176* | 1.000 | | | | | | | |
| (13) cash_taw | -0.109 | 0.265* | 1.000 | | | | | | |
| (14) profw | -0.009 | 0.273* | 0.197* | 1.000 | | | | | |
| (15) beta_rmrfw | -0.138* | 0.017 | 0.072 | 0.021 | 1.000 | | | | |
| (16) beta_umdw | -0.133* | 0.130* | -0.036 | 0.272* | -0.055 | 1.000 | | | |
| (17) beta_hmlw | -0.035 | -0.143* | 0.020 | -0.204* | -0.060 | 0.224* | 1.000 | | |
| (18) beta_smbw | -0.115 | 0.086 | 0.094 | -0.052 | 0.570* | -0.318* | 0.024 | 1.000 | |
| (19) bharw | 0.099 | -0.210* | 0.079 | -0.200* | 0.122* | -0.211* | 0.249* | 0.028 | 1.000 |

TABLE 6
Descriptive Statistics for DiD-Analysis

This table presents the descriptive statistics of ESG scores, explained, and explanatory variables for the DiD-regression for the period 2014 – 2018 for all firms (except financial firms) which are part of the UK ASSET4 universe as of 2014. Variables are defined in TABLE 1. Further note that tq2w denotes the Tobin’s Q measure for the baseline analysis; tq1w an alternative used as a robustness test. Also, roa_netincw is the baseline ROA and roa_ebitw the robustness operating profitability measure. The prefix “lag” denotes the first lag of the respective variable. The suffix *w* shows winsorization at the 1% and 99% level. * in the correlation matrix denotes significance at the 0.01 level.

| Panel A: Summary statistics | | | | | | | | | | |
|-----------------------------|---------|--------|--------|---------|--------|---------|---------|----------|----------|------|
| Variables | Mean | St.Dev | min | max | p25 | Median | p75 | skewness | kurtosis | N |
| esg2014 | 71.628 | 22.934 | 3.31 | 96.37 | 55.68 | 80.125 | 90.575 | -.918 | 2.858 | 1600 |
| env2014 | 63.07 | 26.16 | 9.25 | 94.6 | 40.215 | 69.605 | 87.625 | -.522 | 1.978 | 1600 |
| soc2014 | 67.551 | 22.519 | 4.51 | 96.88 | 51.55 | 73.055 | 86.865 | -.717 | 2.654 | 1600 |
| es2014 | 65.31 | 22.71 | 8.145 | 95.295 | 48.222 | 69.265 | 85.213 | -.579 | 2.311 | 1600 |
| gov2014 | 80.382 | 14.155 | 3.53 | 97.15 | 75.28 | 84.805 | 90.035 | -1.976 | 8.325 | 1600 |
| tq1w | .588 | .229 | .079 | 1.297 | .427 | .582 | .745 | .33 | 3.447 | 1293 |
| tq2w | .591 | .228 | .093 | 1.297 | .434 | .586 | .745 | .33 | 3.428 | 1293 |
| sales_gw | .045 | .164 | -.516 | .664 | -.019 | .039 | .113 | .181 | 7.027 | 1318 |
| gmw | .425 | .232 | .016 | .998 | .242 | .41 | .582 | .362 | 2.475 | 1321 |
| zscorew | 1.71 | .992 | -.699 | 4.904 | 1.077 | 1.608 | 2.241 | .639 | 4.164 | 1292 |
| s_cashw | .068 | .078 | -.1 | .398 | .024 | .056 | .095 | 1.377 | 6.722 | 1322 |
| roew | .001 | .012 | -.057 | .073 | 0 | 0 | .001 | 1.679 | 25.205 | 1294 |
| sales_pew | 422.071 | 870.9 | 28.956 | 6647.93 | 121.75 | 194.388 | 366.201 | 5.575 | 37.355 | 1309 |
| roa_netincw | .047 | .101 | -.422 | .32 | .017 | .049 | .092 | -1.427 | 9.489 | 1323 |
| roa_ebitw | .073 | .109 | -.392 | .391 | .035 | .072 | .126 | -.873 | 7.67 | 1315 |
| lagsizew | 14.588 | 1.597 | 11.276 | 19.161 | 13.448 | 14.402 | 15.41 | .644 | 3.204 | 1365 |
| lagsales_gw | .037 | .157 | -.516 | .664 | -.024 | .033 | .106 | -.023 | 6.851 | 1358 |
| lagcapexpw | .044 | .041 | .001 | .221 | .015 | .033 | .059 | 1.776 | 6.889 | 1361 |
| lagfabaw | .299 | .25 | .005 | .892 | .081 | .232 | .474 | .738 | 2.414 | 1365 |
| lagcash_taw | .109 | .099 | .004 | .546 | .041 | .079 | .138 | 1.991 | 7.801 | 1365 |
| lagbleveragew | .489 | .213 | .041 | 1.14 | .344 | .488 | .625 | .261 | 3.238 | 1365 |
| lagturnoverw | -3.179 | .873 | -8.051 | -1.235 | -3.488 | -3.087 | -2.712 | -2.284 | 13.422 | 1307 |
| lagroa_netincw | .047 | .099 | -.422 | .32 | .017 | .05 | .092 | -1.346 | 9.239 | 1365 |
| lagrdw | .015 | .041 | 0 | .244 | 0 | 0 | .004 | 3.85 | 18.834 | 1361 |
| lagadvertw | .174 | .183 | 0 | .723 | 0 | .111 | .288 | .972 | 3.117 | 1361 |

TABLE 6 – Continued

| Panel B: Pairwise correlations | | | | | | | | | | | | | |
|--------------------------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| (1) esg2014 | 1.000 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|--|
| (2) env2014 | 0.861* | 1.000 | | | | | | | | | | | | |
| (3) soc2014 | 0.852* | 0.740* | 1.000 | | | | | | | | | | | |
| (4) es2014 | 0.918* | 0.943* | 0.922* | 1.000 | | | | | | | | | | |
| (5) gov2014 | 0.629* | 0.433* | 0.474* | 0.484* | 1.000 | | | | | | | | | |
| (6) tq1w | 0.150* | 0.161* | 0.195* | 0.189* | 0.066 | 1.000 | | | | | | | | |
| (7) tq2w | 0.154* | 0.161* | 0.196* | 0.190* | 0.069 | 0.998* | 1.000 | | | | | | | |
| (8) sales_gw | -0.047 | -0.056 | -0.063 | -0.063 | -0.074* | -0.067 | -0.071 | 1.000 | | | | | | |
| (9) gmw | -0.194* | -0.229* | -0.193* | -0.227* | -0.144* | -0.147* | -0.142* | 0.128* | 1.000 | | | | | |
| (10) acrec_sw | -0.047 | -0.053 | -0.060 | -0.060 | 0.033 | -0.014 | -0.015 | -0.045 | 0.101* | 1.000 | | | | |
| (11) zscorew | 0.048 | 0.027 | -0.009 | 0.011 | 0.032 | -0.143* | -0.148* | 0.104* | -0.152* | -0.161* | 1.000 | | | |
| (12) s_cashw | -0.044 | -0.045 | -0.111* | -0.081* | -0.053 | -0.093* | -0.093* | 0.141* | 0.364* | -0.070 | 0.444* | 1.000 | | |
| (13) roew | 0.116* | 0.115* | 0.098* | 0.114* | -0.001 | -0.045 | -0.040 | 0.065 | 0.014 | -0.040 | 0.077* | 0.094* | 1.000 | |
| (14) sales_pew | 0.009 | 0.009 | -0.002 | 0.004 | 0.043 | -0.107* | -0.108* | 0.042 | -0.002 | -0.036 | 0.022 | -0.005 | 0.161* | |
| (15) roa_netincw | 0.048 | 0.019 | -0.024 | -0.001 | -0.024 | -0.069 | -0.066 | 0.169* | 0.216* | -0.108* | 0.484* | 0.558* | 0.293* | |
| (16) roa_ebitw | 0.031 | -0.001 | -0.025 | -0.013 | -0.038 | -0.022 | -0.018 | 0.164* | 0.238* | -0.125* | 0.501* | 0.611* | 0.266* | |
| (17) lagsizew | 0.529* | 0.486* | 0.514* | 0.534* | 0.281* | 0.157* | 0.166* | -0.030 | -0.075* | -0.061 | -0.290* | -0.211* | 0.175* | |
| (18) lagsales_gw | -0.022 | -0.043 | -0.060 | -0.054 | -0.059 | -0.090* | -0.093* | 0.348* | 0.102* | -0.100* | 0.171* | 0.173* | 0.090* | |
| (19) lagcapexpw | -0.043 | -0.009 | -0.026 | -0.018 | -0.042 | -0.027 | -0.018 | -0.142* | 0.111* | -0.163* | -0.071 | 0.010 | -0.001 | |
| (20) lagfabaw | -0.015 | -0.017 | 0.083* | 0.032 | 0.035 | -0.038 | -0.029 | -0.091* | 0.032 | -0.273* | -0.244* | -0.190* | 0.001 | |
| (21) lagcash_taw | -0.228* | -0.205* | -0.201* | -0.218* | -0.112* | 0.003 | 0.002 | -0.013 | 0.140* | -0.015 | 0.121* | 0.274* | -0.023 | |
| (22) lagbleveragew | 0.090* | 0.089* | 0.128* | 0.115* | 0.034 | 0.867* | 0.862* | -0.031 | -0.114* | -0.020 | -0.025 | -0.026 | 0.022 | |
| (23) lagturnoverw | 0.122* | 0.109* | 0.084* | 0.104* | 0.107* | -0.057 | -0.062 | 0.007 | 0.024 | 0.048 | 0.014 | 0.010 | -0.019 | |
| (24) lagroa_netincw | 0.049 | 0.007 | -0.039 | -0.015 | -0.042 | -0.028 | -0.025 | 0.137* | 0.212* | -0.065 | 0.432* | 0.481* | 0.093* | |
| (25) lagrdw | -0.011 | 0.026 | -0.068 | -0.019 | -0.030 | -0.098* | -0.102* | 0.080* | 0.322* | 0.189* | -0.033 | 0.391* | -0.011 | |
| (26) lagadvertisingw | -0.149* | -0.146* | -0.146* | -0.156* | -0.173* | -0.131* | -0.135* | 0.132* | 0.596* | 0.094* | 0.129* | 0.329* | -0.020 | |

TABLE 6 – *Continued*

| Variables | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) | (25) | (26) |
|----------------------|---------|---------|---------|---------|---------|---------|---------|--------|---------|--------|--------|--------|-------|
| (1) esg2014 | | | | | | | | | | | | | |
| (2) env2014 | | | | | | | | | | | | | |
| (3) soc2014 | | | | | | | | | | | | | |
| (4) es2014 | | | | | | | | | | | | | |
| (5) gov2014 | | | | | | | | | | | | | |
| (6) tq1w | | | | | | | | | | | | | |
| (7) tq2w | | | | | | | | | | | | | |
| (8) sales_gw | | | | | | | | | | | | | |
| (9) gmw | | | | | | | | | | | | | |
| (10) acrec_sw | | | | | | | | | | | | | |
| (11) zscorew | | | | | | | | | | | | | |
| (12) s_cashw | | | | | | | | | | | | | |
| (13) roew | | | | | | | | | | | | | |
| (14) sales_pew | 1.000 | | | | | | | | | | | | |
| (15) roa_netincw | -0.016 | 1.000 | | | | | | | | | | | |
| (16) roa_ebitw | -0.003 | 0.946* | 1.000 | | | | | | | | | | |
| (17) lagsizew | 0.278* | -0.100* | -0.130* | 1.000 | | | | | | | | | |
| (18) lagsales_gw | 0.023 | 0.172* | 0.194* | -0.009 | 1.000 | | | | | | | | |
| (19) lagcapexpw | 0.137* | -0.065 | -0.029 | 0.049 | -0.114* | 1.000 | | | | | | | |
| (20) lagfabaw | 0.141* | -0.151* | -0.118* | 0.193* | -0.117* | 0.602* | 1.000 | | | | | | |
| (21) lagcash_taw | 0.005 | 0.119* | 0.137* | -0.193* | -0.037 | 0.018 | -0.192* | 1.000 | | | | | |
| (22) lagbleveragew | -0.126* | 0.126* | 0.149* | 0.070* | -0.073* | -0.102* | -0.133* | 0.048 | 1.000 | | | | |
| (23) lagturnoverw | -0.009 | -0.014 | -0.027 | 0.064 | 0.027 | -0.065 | -0.108* | 0.036 | -0.026 | 1.000 | | | |
| (24) lagroa_netincw | -0.021 | 0.522* | 0.533* | -0.079* | 0.223* | -0.073* | -0.151* | 0.059 | -0.006 | -0.035 | 1.000 | | |
| (25) lagrdw | -0.059 | 0.045 | 0.032 | -0.075* | 0.085* | -0.152* | -0.243* | 0.212* | -0.123* | 0.042 | 0.060 | 1.000 | |
| (26) lagadvertisingw | -0.152* | 0.166* | 0.167* | -0.226* | 0.063 | -0.052 | -0.230* | 0.235* | -0.065 | 0.011 | 0.175* | 0.438* | 1.000 |

TABLE 7

Pre-Trend Assumption Graphs For All Dependent Variables of the DiD-Models (Winsorization at 1% and 99% level) based on mean values of the tertiles.

Panel A: DiD-Models with ESG Scores

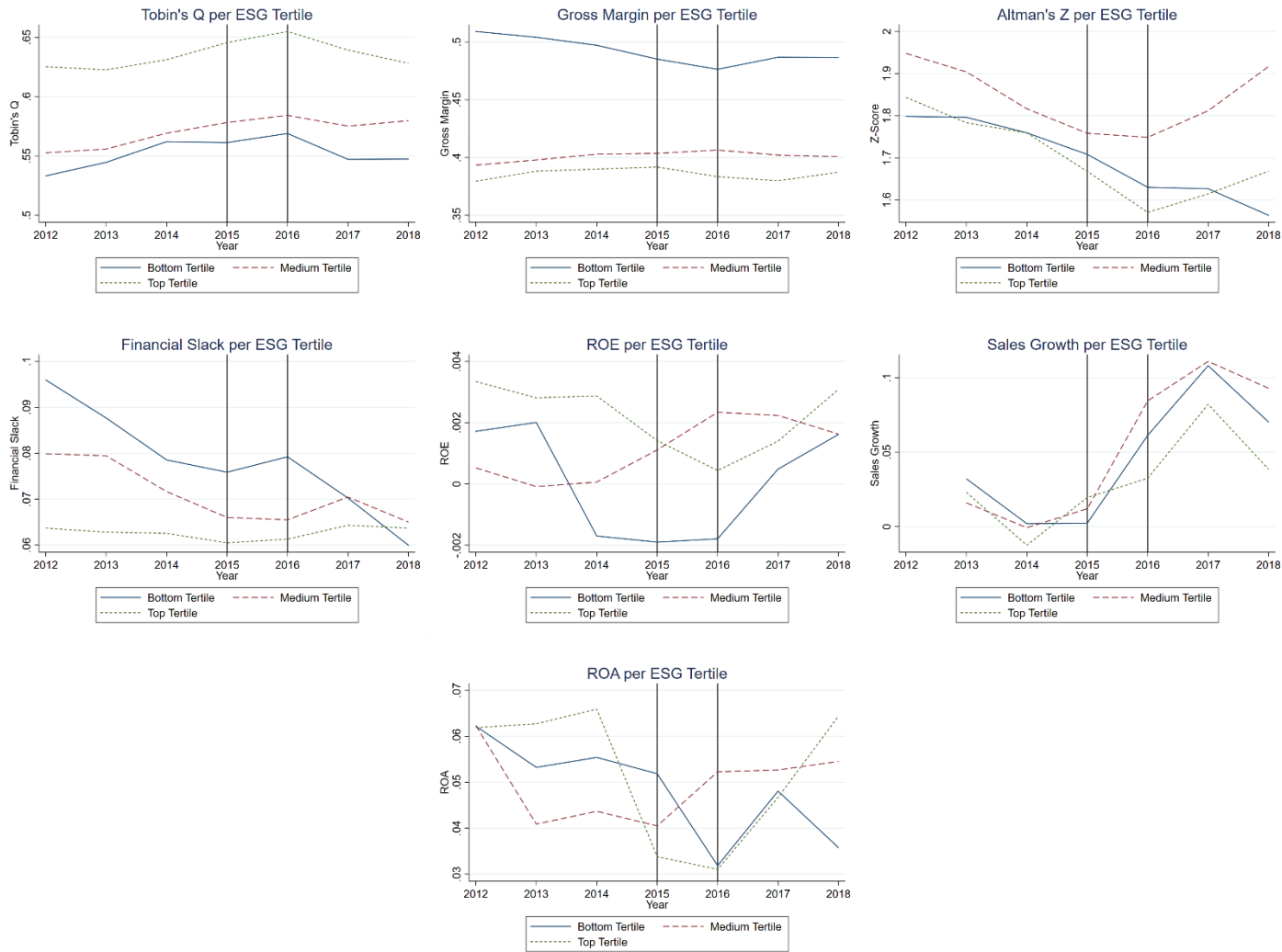


TABLE 7 – Continued

Panel B: DiD-Models with ES Scores

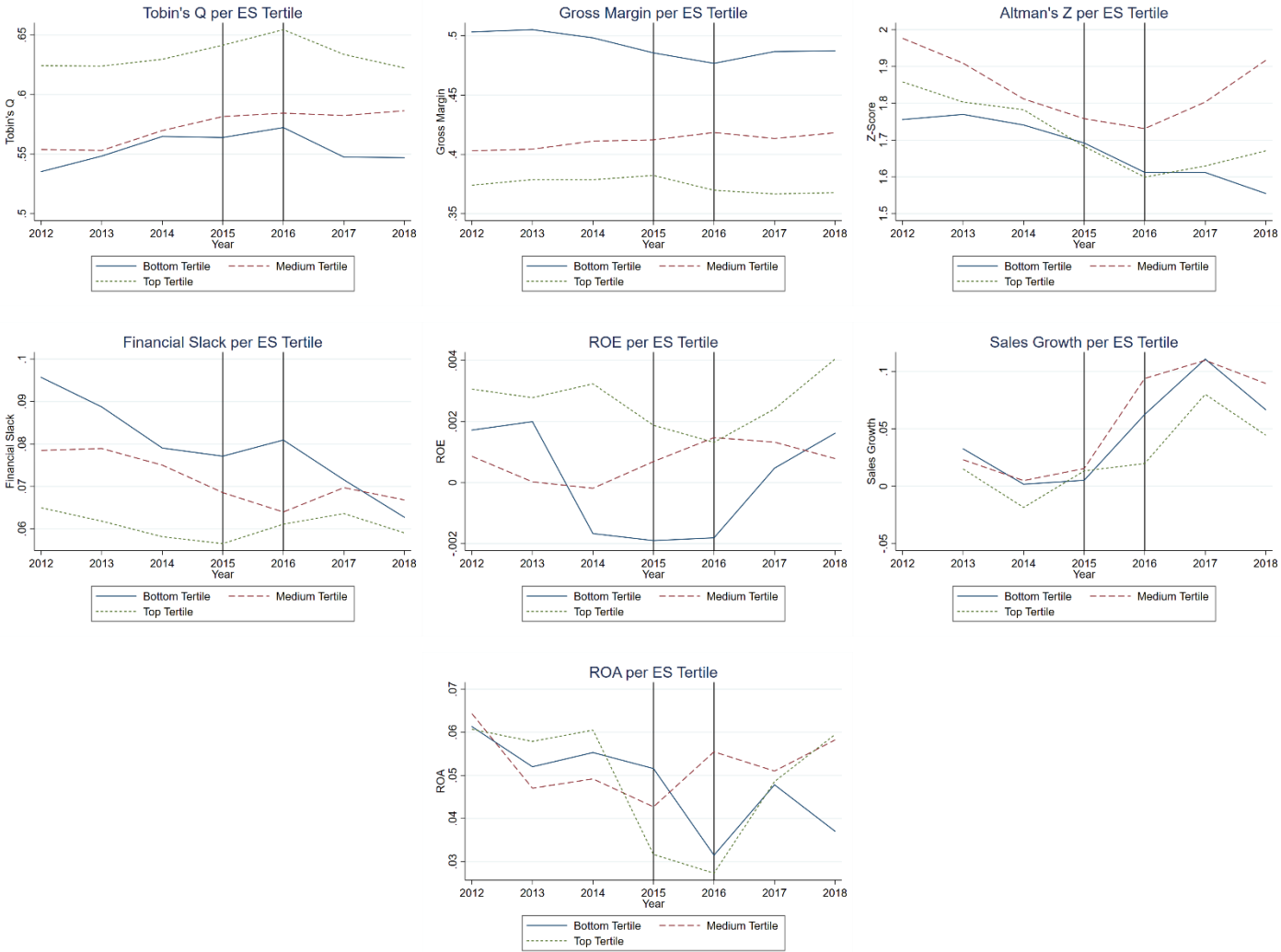


TABLE 7 – Continued

Panel C: DiD-Models with Governance Scores

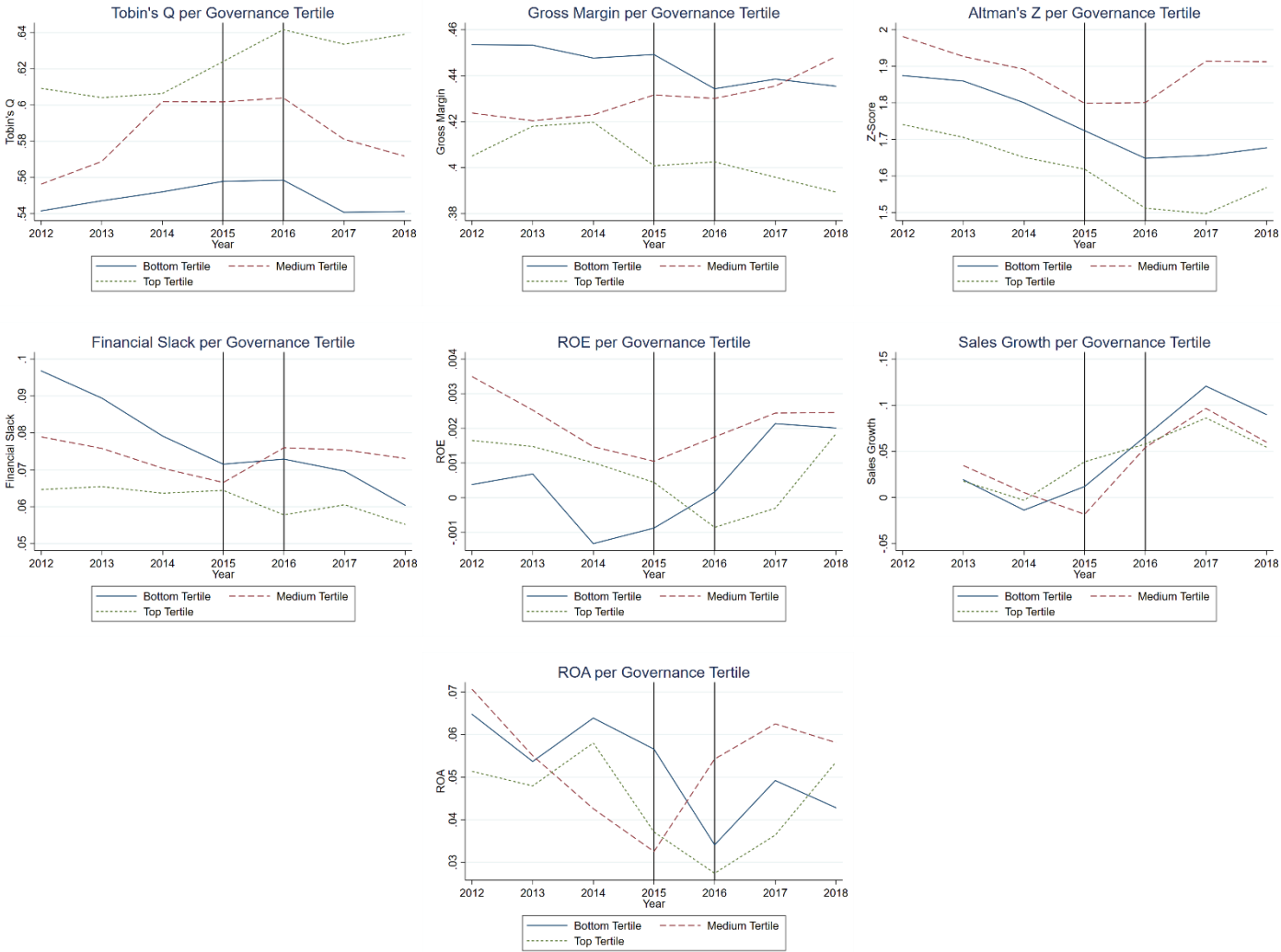


TABLE 8
Shock-Period Returns and Dummies for ESG Tertiles

Heteroskedasticity-consistent standard errors are presented in parentheses. The suffix q3 denotes the top, and q2 the medium tertile. ***, **, * indicate the estimated coefficient is significantly different from zero at the 0.01, 0.05, and 0.1 level respectively.

| VARIABLES | (1) | (2) | (3) | (4) | (5) | (6) |
|------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|----------------------|
| | bharw | bharw | bharw | bharw | bharw | bharw |
| esg_t3 | -0.0681 (-1.56) | | | -0.1119* (-1.94) | | |
| esg_t2 | -0.0497 (-1.21) | | | -0.0762 (-1.61) | | |
| es_t3 | | -0.0473 (-1.08) | | | -0.0701 (-1.24) | |
| es_t2 | | -0.0609 (-1.47) | | | -0.0805* (-1.70) | |
| gov_t3 | | | -0.0654* (-1.74) | | | -0.0900** (-2.06) |
| gov_t2 | | | -0.0121 (-0.31) | | | -0.0235 (-0.54) |
| sizew | | | | 0.0125 (0.71) | 0.0031 (0.18) | 0.0042 (0.28) |
| profw | | | | -0.3079 (-1.16) | -0.3438 (-1.27) | -0.3586 (-1.30) |
| ltd_atw | | | | 0.1556 (1.24) | 0.1681 (1.34) | 0.1749 (1.44) |
| dlc_atw | | | | -0.0850 (-0.53) | -0.1033 (-0.63) | -0.0722 (-0.44) |
| cash_taw | | | | 0.2556 (0.80) | 0.2548 (0.79) | 0.2887 (0.88) |
| beta_rmrw | 0.0807*** (2.69) | 0.0800*** (2.66) | 0.0782*** (2.70) | 0.0621* (1.80) | 0.0637* (1.83) | 0.0588* (1.74) |
| beta_umd | -0.1006*** (-2.91) | -0.1031*** (-3.01) | -0.1009*** (-2.99) | -0.0808** (-2.04) | -0.0841** (-2.15) | -0.0783** (-2.01) |
| beta_hmlw | 0.0735*** (4.02) | 0.0737*** (4.12) | 0.0765*** (4.15) | 0.0593*** (2.91) | 0.0589*** (2.97) | 0.0619*** (3.03) |
| beta_smbw | -0.0525* (-1.93) | -0.0511* (-1.86) | -0.0470* (-1.82) | -0.0430 (-1.35) | -0.0467 (-1.46) | -0.0393 (-1.25) |
| Constant | 0.0223 (0.30) | 0.0172 (0.22) | 0.0294 (0.39) | -0.0897 (-0.35) | 0.0385 (0.16) | 0.0240 (0.11) |
| Industry dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 308 | 308 | 308 | 267 | 267 | 267 |
| R-squared | 0.328 | 0.326 | 0.328 | 0.360 | 0.357 | 0.360 |

TABLE 9
Shock-Period Returns and Continuous ESG Scores as of 2015

This table presents regression estimates of shock-period returns (March to September 2016) on continuous ESG, ES, and Governance scores as of 2015 and control variables. Heteroskedasticity-consistent standard errors are presented in parentheses. ***, **, * indicate the estimated coefficient is significantly different from zero at the 0.01, 0.05, and 0.1 level respectively.

| VARIABLES | (1) bharw | (2) bharw | (3) bharw | (4) bharw | (5) bharw | (6) bharw |
|------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|----------------------|
| esg_15 | -0.0017 (-1.55) | | | -0.0024* (-1.85) | | |
| es_15 | | -0.0017* (-1.77) | | | -0.0021* (-1.73) | |
| gov_15 | | | -0.0011 (-0.94) | | | -0.0020 (-1.54) |
| sizew | | | | 0.0101 (0.63) | 0.0081 (0.48) | -0.0004 (-0.02) |
| profw | | | | -0.2737 (-1.03) | -0.3191 (-1.16) | -0.3346 (-1.21) |
| ltd_atw | | | | 0.1593 (1.28) | 0.1678 (1.35) | 0.1833 (1.48) |
| dlc_atw | | | | -0.0798 (-0.49) | -0.0820 (-0.50) | -0.0914 (-0.55) |
| cash_taw | | | | 0.1926 (0.60) | 0.2188 (0.68) | 0.2717 (0.82) |
| beta_rmrfw | 0.0801*** (2.63) | 0.0802*** (2.64) | 0.0744** (2.52) | 0.0638* (1.85) | 0.0638* (1.86) | 0.0594* (1.72) |
| beta_umdww | -0.1088*** (-2.91) | -0.1093*** (-2.92) | -0.1079*** (-2.91) | -0.0847** (-2.17) | -0.0836** (-2.13) | -0.0820** (-2.11) |
| beta_hmlw | 0.0746*** (3.96) | 0.0742*** (3.97) | 0.0786*** (4.19) | 0.0569*** (2.82) | 0.0573*** (2.86) | 0.0609*** (3.05) |
| beta_smbw | -0.0555** (-2.00) | -0.0577** (-2.06) | -0.0477* (-1.76) | -0.0443 (-1.39) | -0.0465 (-1.48) | -0.0423 (-1.33) |
| Constant | 0.1224 (1.28) | 0.1073 (1.22) | 0.1014 (0.91) | 0.0637 (0.30) | 0.0516 (0.23) | 0.2039 (0.92) |
| Industry dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 297 | 297 | 297 | 266 | 266 | 266 |
| R-squared | 0.332 | 0.333 | 0.326 | 0.362 | 0.360 | 0.357 |

TABLE 10
Shock-Period Returns and Continuous ESG Scores as of 2016

This table presents regression estimates of shock-period returns (March to September 2016) on continuous ESG, ES, and Governance scores as of 2016 and control variables. Heteroskedasticity-consistent standard errors are presented in parentheses. ***, **, * indicate the estimated coefficient is significantly different from zero at the 0.01, 0.05, and 0.1 level respectively.

| VARIABLES | (1) bharw | (2) bharw | (3) bharw | (4) bharw | (5) bharw | (6) bharw |
|------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|----------------------|
| esg_16 | -0.0028** (-2.02) | | | -0.0026* (-1.67) | | |
| es_16 | | -0.0029** (-2.52) | | | -0.0031** (-2.29) | |
| gov_16 | | | -0.0020 (-1.57) | | | -0.0015 (-1.01) |
| sizew | | | | -0.0002 (-0.01) | 0.0041 (0.25) | -0.0086 (-0.60) |
| profw | | | | -0.3970 (-1.57) | -0.4210 (-1.65) | -0.4478* (-1.74) |
| ltd_atw | | | | 0.1765 (1.43) | 0.1659 (1.35) | 0.1870 (1.53) |
| dlc_atw | | | | -0.1010 (-0.63) | -0.0955 (-0.60) | -0.1343 (-0.82) |
| cash_taw | | | | 0.2253 (0.69) | 0.2214 (0.68) | 0.3139 (0.93) |
| beta_rmrfw | 0.0840*** (2.77) | 0.0857*** (2.85) | 0.0777*** (2.65) | 0.0727** (2.12) | 0.0750** (2.22) | 0.0684** (2.03) |
| beta_umd | -0.1182*** (-3.16) | -0.1201*** (-3.21) | -0.1180*** (-3.18) | -0.0918** (-2.40) | -0.0942** (-2.44) | -0.0899** (-2.36) |
| beta_hmlw | 0.0786*** (4.15) | 0.0774*** (4.14) | 0.0837*** (4.39) | 0.0698*** (3.55) | 0.0682*** (3.49) | 0.0721*** (3.65) |
| beta_smbw | -0.0723** (-2.56) | -0.0743*** (-2.63) | -0.0621** (-2.30) | -0.0661** (-2.08) | -0.0673** (-2.13) | -0.0632** (-1.99) |
| | (1.56) | (1.57) | (1.11) | (0.97) | (0.70) | (1.13) |
| Industry dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 283 | 283 | 283 | 257 | 257 | 257 |
| R-squared | 0.375 | 0.378 | 0.366 | 0.397 | 0.402 | 0.391 |

TABLE 11
Real Performance and CSR Surrounding the Brexit Referendum – ESG Scores as of 2015

This table presents regression outputs for real performance of UK firms surrounding the Brexit Referendum with ESG Scores as of 2015 included in the interaction terms. Real performance is captured on three levels: firm value (model (1)), operating performance (models (2) to (5)), and financial health (models (6) and (7)). Standard errors clustered at firm level are reported in parentheses. ***, **, * indicate the estimated coefficient is significantly different from zero at the 0.01, 0.05, and 0.1 level respectively.

| Panel A: Effects of Composite ESG Scores as of 2015 | | | | | | | |
|--|---------------------|-----------------------|-----------------------|---------------------|-----------------------|-----------------------|---------------------|
| VARIABLES | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| | gmw | sales_gw | roa_netincw | roew | s_cashw | zscorew | tq2w |
| ibresg_15 | 0.0002 (0.34) | -0.0003 (-0.35) | 0.0002 (0.36) | -0.0000 (-0.26) | -0.0000 (-0.12) | 0.0005 (0.36) | -0.0000 (-0.02) |
| ipostesg_15 | -0.0002 (-0.44) | -0.0011 (-1.46) | -0.0000 (-0.01) | -0.0001 (-1.31) | 0.0000 (0.05) | 0.0011 (0.77) | -0.0004 (-1.08) |
| lagsizew | -0.0272* (-1.77) | -0.0980*** (-2.91) | -0.0684*** (-4.81) | -0.0006 (-0.30) | -0.0453*** (-5.22) | -0.1267* (-1.71) | -0.0002 (-0.01) |
| lagcapexpw | 0.0588 (0.45) | -1.7087*** (-5.72) | -0.2598** (-2.01) | -0.0194 (-1.12) | -0.0962 (-1.05) | -1.7263*** (-2.70) | 0.3084** (2.03) |
| lagfabaw | 0.0388 (0.49) | 0.1414 (0.84) | 0.0097 (0.12) | 0.0046 (0.25) | -0.0711* (-1.66) | 0.5447 (1.60) | 0.0332 (0.37) |
| lagcash_taw | 0.0539 (0.92) | -0.1420 (-0.86) | 0.0984 (1.65) | 0.0114 (1.35) | -0.0041 (-0.09) | 0.2911 (0.71) | 0.0421 (0.51) |
| lagbleveragew | -0.0410 (-0.74) | 0.0823 (0.83) | 0.1140** (2.44) | 0.0027 (0.25) | -0.0472 (-1.63) | -0.2035 (-1.10) | 0.3039*** (5.62) |
| lagrdw | -0.7873 (-1.42) | -0.4527 (-0.54) | -0.0040 (-0.02) | 0.0332 (1.55) | -0.0838 (-0.32) | 0.3695 (0.25) | -0.1958 (-0.59) |
| lagadvertisingw | 0.0824 (0.75) | 0.3521*** (2.87) | 0.0040 (0.05) | -0.0077 (-1.06) | -0.0223 (-0.66) | -0.1206 (-0.48) | -0.0081 (-0.14) |
| turnoverw | | | | -0.0029* (-1.73) | | | -0.0031 (-0.26) |
| lagroa_netincw | 0.0664 (1.40) | 0.0839 (0.83) | | -0.0020 (-0.35) | 0.0494** (2.23) | 0.5673*** (2.91) | -0.0805 (-1.44) |
| lagsales_gw | 0.0723*** (3.07) | | 0.0440* (1.66) | 0.0054 (1.16) | 0.0324** (2.41) | 0.2701*** (3.22) | 0.0008 (0.03) |
| Constant | 0.8076*** (3.56) | 1.3775*** (2.65) | 0.9918*** (4.68) | -0.0027 (-0.09) | 0.7770*** (6.01) | 3.5949*** (3.24) | 0.4183 (1.44) |
| Firm fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 1,310 | 1,313 | 1,309 | 1,256 | 1,308 | 1,278 | 1,255 |
| R-squared | 0.047 | 0.162 | 0.097 | 0.036 | 0.088 | 0.124 | 0.116 |
| Firms included | 283 | 284 | 283 | 274 | 283 | 278 | 274 |

TABLE 11 – *Continued*

| Panel B: Effects of Composite ES Scores as of 2015 | | | | | | | |
|---|---------------------|-----------------------|-----------------------|---------------------|-----------------------|-----------------------|---------------------|
| VARIABLES | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| | gmw | sales gw | roa netincw | roew | s cashw | zscorew | tq2w |
| ibres_15 | 0.0001 (0.27) | -0.0004 (-0.63) | 0.0001 (0.42) | -0.0000 (-0.08) | 0.0001 (0.48) | 0.0011 (0.84) | 0.0001 (0.21) |
| ipostes_15 | -0.0001 (-0.15) | -0.0006 (-0.90) | 0.0001 (0.40) | -0.0001 (-1.13) | 0.0002 (1.05) | 0.0020 (1.40) | -0.0003 (-0.78) |
| lagsizew | -0.0271* (-1.74) | -0.0985*** (-2.90) | -0.0681*** (-4.74) | -0.0008 (-0.38) | -0.0448*** (-5.21) | -0.1228* (-1.67) | -0.0010 (-0.05) |
| lagcapexpw | 0.0633 (0.48) | -1.6990*** (-5.64) | -0.2575** (-1.99) | -0.0186 (-1.09) | -0.0958 (-1.05) | -1.7259*** (-2.72) | 0.3112** (2.05) |
| lagfabaw | 0.0413 (0.52) | 0.1518 (0.90) | 0.0115 (0.14) | 0.0052 (0.28) | -0.0671 (-1.58) | 0.5619* (1.68) | 0.0355 (0.39) |
| lagcash_taw | 0.0507 (0.86) | -0.1545 (-0.93) | 0.0954 (1.62) | 0.0101 (1.32) | -0.0081 (-0.18) | 0.2634 (0.65) | 0.0373 (0.45) |
| lagbleveragew | -0.0419 (-0.75) | 0.0799 (0.80) | 0.1132** (2.42) | 0.0025 (0.23) | -0.0487* (-1.67) | -0.2136 (-1.16) | 0.3032*** (5.62) |
| lagrdw | -0.8107 (-1.42) | -0.5088 (-0.59) | -0.0169 (-0.06) | 0.0265 (1.36) | -0.0916 (-0.34) | 0.3305 (0.23) | -0.2246 (-0.67) |
| lagadvertisingw | 0.0827 (0.74) | 0.3531*** (2.87) | 0.0049 (0.06) | -0.0074 (-1.02) | -0.0204 (-0.61) | -0.1115 (-0.45) | -0.0063 (-0.11) |
| turnoverw | | | | -0.0029* (-1.72) | | | -0.0030 (-0.26) |
| lagroa_netincw | 0.0653 (1.36) | 0.0813 (0.80) | | -0.0019 (-0.34) | 0.0488** (2.20) | 0.5630*** (2.93) | -0.0794 (-1.42) |
| lagsales_gw | 0.0733*** (3.05) | | 0.0443* (1.66) | 0.0056 (1.21) | 0.0326** (2.43) | 0.2695*** (3.21) | 0.0018 (0.07) |
| Constant | 0.8067*** (3.53) | 1.3843*** (2.64) | 0.9864*** (4.63) | -0.0003 (-0.01) | 0.7698*** (6.00) | 3.5400*** (3.21) | 0.4292 (1.45) |
| Firm fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 1,310 | 1,313 | 1,309 | 1,256 | 1,308 | 1,278 | 1,255 |
| R-squared | 0.045 | 0.159 | 0.097 | 0.032 | 0.090 | 0.128 | 0.115 |
| Firms included | 283 | 284 | 283 | 274 | 283 | 278 | 274 |

TABLE 11 – *Continued*

| Panel C: Effects of Governance ESG Scores as of 2015 | | | | | | | |
|---|---------------------|-----------------------|-----------------------|---------------------|-----------------------|-----------------------|---------------------|
| VARIABLES | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| | gmw | sales gw | roa netincw | roew | s cashw | zscorew | tq2w |
| ibrgov_15 | 0.0002 (0.37) | 0.0005 (0.65) | 0.0002 (0.52) | -0.0001 (-1.20) | -0.0002 (-0.55) | 0.0007 (0.46) | -0.0002 (-0.59) |
| ipostgov_15 | 0.0002 (0.44) | -0.0006 (-0.76) | 0.0001 (0.16) | -0.0001 (-0.99) | -0.0003 (-1.20) | -0.0001 (-0.07) | -0.0004 (-0.96) |
| lagsizew | -0.0263 (-1.62) | -0.0990*** (-2.93) | -0.0681*** (-4.68) | -0.0008 (-0.42) | -0.0463*** (-5.31) | -0.1261* (-1.71) | -0.0019 (-0.10) |
| lagcapexpw | 0.0737 (0.53) | -1.7247*** (-5.63) | -0.2555** (-1.99) | -0.0199 (-1.10) | -0.1078 (-1.16) | -1.7478*** (-2.69) | 0.2996* (1.95) |
| lagfabaw | 0.0455 (0.59) | 0.1511 (0.88) | 0.0094 (0.11) | 0.0050 (0.26) | -0.0756* (-1.84) | 0.5209 (1.52) | 0.0304 (0.34) |
| lagcash_taw | 0.0466 (0.80) | -0.1705 (-1.03) | 0.0963 (1.65) | 0.0090 (1.21) | -0.0021 (-0.05) | 0.3259 (0.79) | 0.0325 (0.39) |
| lagbleveragew | -0.0433 (-0.78) | 0.0752 (0.75) | 0.1136** (2.43) | 0.0023 (0.21) | -0.0462 (-1.61) | -0.1955 (-1.07) | 0.3025*** (5.57) |
| lagrdw | -0.8192 (-1.45) | -0.4812 (-0.56) | -0.0074 (-0.03) | 0.0238 (1.30) | -0.0699 (-0.27) | 0.5187 (0.36) | -0.2210 (-0.67) |
| lagadvertisingw | 0.0829 (0.75) | 0.3628*** (2.83) | 0.0040 (0.05) | -0.0074 (-1.03) | -0.0228 (-0.69) | -0.1270 (-0.51) | -0.0068 (-0.12) |
| turnoverw | | | | -0.0030* (-1.75) | | | -0.0036 (-0.30) |
| lagroa_netincw | 0.0637 (1.35) | 0.0840 (0.83) | | -0.0025 (-0.43) | 0.0504** (2.27) | 0.5720*** (2.93) | -0.0819 (-1.45) |
| lagsales_gw | 0.0739*** (3.00) | | 0.0445* (1.66) | 0.0058 (1.22) | 0.0324** (2.44) | 0.2668*** (3.16) | 0.0033 (0.13) |
| Constant | 0.7940*** (3.32) | 1.3951*** (2.67) | 0.9880*** (4.56) | 0.0012 (0.04) | 0.7930*** (6.09) | 3.5860*** (3.24) | 0.4446 (1.48) |
| Firm fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 1,310 | 1,313 | 1,309 | 1,256 | 1,308 | 1,278 | 1,255 |
| R-squared | 0.045 | 0.159 | 0.097 | 0.031 | 0.090 | 0.123 | 0.115 |
| Firms included | 283 | 284 | 283 | 274 | 283 | 278 | 274 |

TABLE 12
Real Performance and CSR Surrounding the Brexit Referendum – ESG Scores as of 2016

This table presents regression outputs for real performance of UK firms surrounding the Brexit Referendum with ESG Scores as of 2016 included in the interaction terms. Real performance is captured on three levels: firm value (model (1)), operating performance (models (2) to (5)), and financial health (models (6) and (7)). Standard errors clustered at firm level are reported in parentheses. ***, **, * indicate the estimated coefficient is significantly different from zero at the 0.01, 0.05, and 0.1 level respectively.

| Panel A: Effects of Composite ESG Scores as of 2016 | | | | | | | |
|--|---------------------|-----------------------|-----------------------|---------------------|-----------------------|-----------------------|---------------------|
| VARIABLES | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| | gmw | sales_gw | roa_netincw | roew | s_cashw | zscorew | tq2w |
| ibresg_16 | 0.0005 (1.05) | 0.0002 (0.23) | 0.0006 (1.47) | -0.0000 (-0.18) | -0.0001 (-0.48) | 0.0012 (0.98) | -0.0003 (-0.96) |
| ipostesg_16 | 0.0001 (0.17) | -0.0010 (-1.10) | 0.0001 (0.28) | -0.0001 (-1.39) | -0.0001 (-0.56) | 0.0020 (1.16) | -0.0006 (-1.53) |
| lagsizew | -0.0274* (-1.81) | -0.0969*** (-2.90) | -0.0690*** (-4.90) | -0.0005 (-0.26) | -0.0452*** (-5.23) | -0.1301* (-1.75) | 0.0008 (0.04) |
| lagcapexpw | 0.0612 (0.47) | -1.7014*** (-5.68) | -0.2614** (-2.02) | -0.0182 (-1.05) | -0.0965 (-1.06) | -1.7424*** (-2.74) | 0.3172** (2.07) |
| lagfabaw | 0.0425 (0.52) | 0.1414 (0.84) | 0.0119 (0.14) | 0.0039 (0.21) | -0.0740* (-1.75) | 0.5619* (1.69) | 0.0271 (0.30) |
| lagcash_taw | 0.0466 (0.79) | -0.1541 (-0.91) | 0.0956 (1.65) | 0.0108 (1.33) | -0.0017 (-0.04) | 0.2770 (0.67) | 0.0442 (0.53) |
| lagbleveragew | -0.0434 (-0.78) | 0.0790 (0.79) | 0.1121** (2.41) | 0.0025 (0.23) | -0.0464 (-1.63) | -0.2058 (-1.13) | 0.3041*** (5.65) |
| lagrdw | -0.8110 (-1.43) | -0.4498 (-0.53) | -0.0068 (-0.03) | 0.0353 (1.57) | -0.0719 (-0.27) | 0.2758 (0.19) | -0.1774 (-0.54) |
| lagadvertisingw | 0.0866 (0.80) | 0.3520*** (2.87) | 0.0072 (0.10) | -0.0083 (-1.11) | -0.0242 (-0.71) | -0.1028 (-0.42) | -0.0143 (-0.25) |
| turnoverw | | | | -0.0029* (-1.69) | | | -0.0032 (-0.27) |
| lagroa_netincw | 0.0677 (1.41) | 0.0896 (0.87) | | -0.0013 (-0.24) | 0.0498** (2.25) | 0.5632*** (2.92) | -0.0799 (-1.43) |
| lagsales_gw | 0.0726*** (3.04) | | 0.0439 (1.63) | 0.0054 (1.17) | 0.0320** (2.40) | 0.2712*** (3.22) | 0.0009 (0.04) |
| Constant | 0.8103*** (3.66) | 1.3634*** (2.64) | 0.9996*** (4.77) | -0.0033 (-0.11) | 0.7757*** (6.04) | 3.6407*** (3.28) | 0.4045 (1.40) |
| Firm fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 1,310 | 1,313 | 1,309 | 1,256 | 1,308 | 1,278 | 1,255 |
| R-squared | 0.048 | 0.161 | 0.100 | 0.036 | 0.089 | 0.126 | 0.117 |
| Firms included | 283 | 284 | 283 | 274 | 283 | 278 | 274 |

TABLE 12 – *Continued*

| Panel B: Effects of Composite ES Scores as of 2016 | | | | | | | |
|---|---------------------|-----------------------|-----------------------|---------------------|-----------------------|-----------------------|---------------------|
| VARIABLES | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| | gmw | sales_gw | roa_netincw | roew | s_cashw | zscorew | tq2w |
| ibres_16 | 0.0002 (0.52) | -0.0005 (-0.82) | 0.0002 (0.49) | -0.0000 (-0.23) | -0.0000 (-0.12) | 0.0011 (0.94) | -0.0001 (-0.22) |
| ipostes_16 | -0.0000 (-0.02) | -0.0007 (-0.98) | 0.0001 (0.25) | -0.0001 (-1.25) | 0.0001 (0.37) | 0.0019 (1.25) | -0.0003 (-0.89) |
| lagsizew | -0.0272* (-1.79) | -0.0974*** (-2.90) | -0.0685*** (-4.84) | -0.0007 (-0.33) | -0.0452*** (-5.22) | -0.1269* (-1.72) | -0.0005 (-0.03) |
| lagcapexpw | 0.0637 (0.48) | -1.6915*** (-5.63) | -0.2591** (-2.00) | -0.0176 (-1.03) | -0.0968 (-1.06) | -1.7510*** (-2.76) | 0.3173** (2.08) |
| lagfabaw | 0.0418 (0.52) | 0.1510 (0.89) | 0.0108 (0.13) | 0.0050 (0.27) | -0.0698* (-1.66) | 0.5559* (1.65) | 0.0338 (0.38) |
| lagcash_taw | 0.0488 (0.83) | -0.1544 (-0.92) | 0.0960 (1.62) | 0.0100 (1.31) | -0.0052 (-0.12) | 0.2734 (0.67) | 0.0367 (0.44) |
| lagbleveragew | -0.0424 (-0.75) | 0.0798 (0.80) | 0.1133** (2.42) | 0.0024 (0.22) | -0.0477 (-1.65) | -0.2096 (-1.15) | 0.3030*** (5.62) |
| lagrdw | -0.8138 (-1.43) | -0.4969 (-0.58) | -0.0161 (-0.06) | 0.0278 (1.40) | -0.0863 (-0.32) | 0.3214 (0.22) | -0.2182 (-0.66) |
| lagadvertisingw | 0.0833 (0.76) | 0.3507*** (2.83) | 0.0046 (0.06) | -0.0077 (-1.06) | -0.0217 (-0.64) | -0.1083 (-0.44) | -0.0090 (-0.16) |
| turnoverw | | | | -0.0029* (-1.71) | | | -0.0033 (-0.27) |
| lagroa_netincw | 0.0660 (1.39) | 0.0783 (0.77) | | -0.0020 (-0.36) | 0.0489** (2.20) | 0.5692*** (2.92) | -0.0811 (-1.45) |
| lagsales_gw | 0.0731*** (3.07) | | 0.0444* (1.67) | 0.0055 (1.19) | 0.0326** (2.43) | 0.2721*** (3.23) | 0.0014 (0.06) |
| Constant | 0.8075*** (3.62) | 1.3683*** (2.64) | 0.9924*** (4.72) | -0.0015 (-0.05) | 0.7757*** (6.02) | 3.5992*** (3.25) | 0.4222 (1.44) |
| Firm fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 1,310 | 1,313 | 1,309 | 1,256 | 1,308 | 1,278 | 1,255 |
| R-squared | 0.045 | 0.159 | 0.097 | 0.032 | 0.089 | 0.126 | 0.115 |
| Firms included | 283 | 284 | 283 | 274 | 283 | 278 | 274 |

TABLE 12 – *Continued*

| Panel C: Effects of Governance Scores as of 2016 | | | | | | | |
|---|---------------------|-----------------------|-----------------------|---------------------|-----------------------|-----------------------|---------------------|
| VARIABLES | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| | gmw | sales_gw | roa_netincw | roew | s_cashw | zscorew | tq2w |
| ibrgov_16 | 0.0005 (1.15) | 0.0009 (1.62) | 0.0004 (1.26) | -0.0000 (-0.99) | -0.0003 (-1.00) | 0.0005 (0.44) | -0.0004 (-1.14) |
| ipostgov_16 | 0.0005 (1.57) | 0.0001 (0.09) | 0.0001 (0.35) | -0.0000 (-0.34) | -0.0003* (-1.68) | 0.0001 (0.03) | -0.0006 (-1.13) |
| lagsizew | -0.0257* (-1.68) | -0.0967*** (-2.88) | -0.0682*** (-4.74) | -0.0007 (-0.34) | -0.0463*** (-5.37) | -0.1257* (-1.70) | -0.0019 (-0.10) |
| lagcapexpw | 0.0776 (0.58) | -1.6952*** (-5.58) | -0.2557** (-1.99) | -0.0181 (-1.02) | -0.1059 (-1.15) | -1.7409*** (-2.71) | 0.3064** (2.03) |
| lagfabaw | 0.0476 (0.62) | 0.1579 (0.92) | 0.0078 (0.09) | 0.0061 (0.32) | -0.0751* (-1.85) | 0.5216 (1.54) | 0.0298 (0.32) |
| lagcash_taw | 0.0430 (0.73) | -0.1774 (-1.07) | 0.0935 (1.61) | 0.0086 (1.17) | -0.0010 (-0.02) | 0.3244 (0.79) | 0.0334 (0.40) |
| lagbleveragew | -0.0431 (-0.78) | 0.0741 (0.74) | 0.1130** (2.42) | 0.0020 (0.18) | -0.0467 (-1.63) | -0.1952 (-1.06) | 0.3018*** (5.58) |
| lagrdw | -0.8497 (-1.46) | -0.5433 (-0.62) | -0.0186 (-0.07) | 0.0233 (1.21) | -0.0571 (-0.22) | 0.4850 (0.34) | -0.2063 (-0.63) |
| lagadvertisingw | 0.0876 (0.80) | 0.3648*** (2.87) | 0.0059 (0.08) | -0.0075 (-1.04) | -0.0257 (-0.78) | -0.1275 (-0.51) | -0.0116 (-0.21) |
| turnoverw | | | | -0.0030* (-1.75) | | | -0.0037 (-0.31) |
| lagroa_netincw | 0.0649 (1.41) | 0.0856 (0.84) | | -0.0027 (-0.47) | 0.0497** (2.24) | 0.5728*** (2.93) | -0.0830 (-1.47) |
| lagsales_gw | 0.0737*** (3.02) | | 0.0448* (1.67) | 0.0058 (1.22) | 0.0325** (2.45) | 0.2661*** (3.15) | 0.0035 (0.14) |
| Constant | 0.7841*** (3.50) | 1.3598*** (2.62) | 0.9895*** (4.62) | -0.0014 (-0.04) | 0.7923*** (6.16) | 3.5806*** (3.23) | 0.4439 (1.49) |
| Firm fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 1,310 | 1,313 | 1,309 | 1,256 | 1,308 | 1,278 | 1,255 |
| R-squared | 0.048 | 0.159 | 0.098 | 0.029 | 0.092 | 0.123 | 0.116 |
| Firms included | 283 | 284 | 283 | 274 | 283 | 278 | 274 |

Propensity Score Matching in Stata

```
1  ***Stata Commands for Propensity Score Matching
2
3  *Installation of psmatch2
4  ssc install psmatch2
5
6  *First step: estimation of logit regression with dummy variable for treatment/control group as dependent and covariates as independent variables
7  logit desgl4 lnmcap icb_group
8
9  *Prediction of propensity scores
10 predict pscore, pr
11
12 *Distribution of propensity scores across treatment and control group before matching
13 graph tw kdensity pscore if desgl4==0 || kdensity pscore if desgl4==1
14
15 *PSM nearest-neighbour with one neighbour and replacement (default), caliper of 0.01, and common support
16 psmatch2 desgl4, p(pscore) neighbor(1) caliper(0.01) common
17
18 *Test if matching was successful: difference in covariates between groups should be insignificant and bias should be below 5%
19 ptest lnmcap icb_group, treated(_treated) summary both
20
21 *Distribution of propensity scores across treatment and control group after matching -> should be similar
22 sum _weight
23 gen match=_nl
24 replace match=_id if match==.
25 duplicates tag match, gen(dup)
26 twoway (kdensity _pscore if _treated==1) (kdensity _pscore if _treated==0 & dup>0, lpattern(dash)), legend( label( 1 "treated") label( 2 "control" ) ) xtitle("propensity score")
27
28
```

Estimation of Factor Loading

```
29 use 190805_cross-sec_data_ff-factors, clear
30
31 preserve
32
33 gen time=_n
34
35
36
37 ***Step 1: Calculate returns
38
39 foreach var of varlist bmg0440ml284 bmg196f11004 bmg4593f1389 bmg5361w1047 ca8936621066 ch0198251305 de000tuag000 de000tuag265 es01775:
40     gen `var'lr=ln(`var'[_n]/`var'[_n-1])
41 }
42
43 ***Step 2: For firms without any stock prices reported: replace missing value with 0
44 *this is done to ensure that the loop for estimating the loadings is not interrupted
45
46 foreach var of varlist gb00053526781r gb00b459sm731r gb00bf50ps231r gb00bkj9qy331r gb00blnn31441r gb00bw9hgs541r gb00byphd1511r gb00by:
47     replace `var'=0 if `var'==.
48 }
49
50
51 ***Step 2: Transform actual returns into excess returns
52
53 foreach var of varlist bmg0440ml2841r bmg196f110041r bmg4593f13891r bmg5361w10471r ca89366210661r ch01982513051r de000tuag0001r de000tu:
54     replace `var'=`var'-rf
55 }
56
57 tempname betas
58 postfile `betas' beta_c beta_rmf beta_umd beta_hml beta_smb using "\\cfs\users\oh31\Documents\01_dissertation\d_returns_cross_sec\DATA"
59 foreach y of varlist bmg0440ml2841r bmg196f110041r bmg4593f13891r bmg5361w10471r ca89366210661r ch01982513051r de000tuag0001r de000tuag:
60     regress `y' rmrf umd hml smb
61     scalar beta_c=_b[_cons]
62     scalar beta_rmf=_b[rmrf]
63     scalar beta_umd=_b[umd]
64     scalar beta_hml=_b[hml]
65     scalar beta_smb=_b[smb]
66     post `betas' (beta_c) (beta_rmf) (beta_umd) (beta_hml) (beta_smb)
67 }
68 postclose `betas'
69
70 drop smb hml umd rf rm rmrf
71 xpose, clear varname // Transpose data to cross sectional
72
73 restore
74
```