



## **Online-Appendix zu**

# „Performance of German Family Firms During the Global Financial Crisis“

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# Appendix

## Appendix 1: Robustness – Regression including Alternative Performance Measures

| VARIABLES             | (1a)<br>Pre-Crisis ROE | (1b)<br>Crisis ROE   | (2a)<br>Pre-Crisis ROA | (2b)<br>Crisis ROA     |
|-----------------------|------------------------|----------------------|------------------------|------------------------|
| TFF                   | 57.70<br>(35.79)       | 50.03<br>(35.94)     | 18.05***<br>(6.767)    | 12.59*<br>(6.739)      |
| LFF                   | 12.19<br>(66.72)       | 0.444<br>(66.81)     | 7.327<br>(12.62)       | -3.485<br>(12.53)      |
| Other_Individual      | 53.02<br>(111.9)       | 60.98<br>(111.5)     | 13.25<br>(21.16)       | 11.46<br>(20.91)       |
| Financial_Institution | 13.31<br>(48.30)       | -1.239<br>(48.92)    | 2.022<br>(9.132)       | -6.364<br>(9.173)      |
| PE                    | 79.61<br>(79.87)       | 81.47<br>(79.49)     | 3.728<br>(15.10)       | -49.08***<br>(14.90)   |
| State                 | -21.93<br>(128.0)      | -30.68<br>(127.5)    | -7.683<br>(24.20)      | -4.074<br>(23.91)      |
| Other                 | 41.62<br>(41.46)       | 44.10<br>(41.29)     | 7.702<br>(7.839)       | 8.698<br>(7.742)       |
| Pre_Crisis_Return     |                        | 25.38<br>(15.93)     |                        | 12.29***<br>(2.987)    |
| group(SIC) = 2        | 22.79<br>(125.3)       | 13.68<br>(124.8)     | 9.303<br>(23.69)       | -2.405<br>(23.40)      |
| group(SIC) = 3        | 16.17<br>(118.1)       | 12.49<br>(117.6)     | 6.829<br>(22.33)       | -11.61<br>(22.04)      |
| group(SIC) = 4        | 19.71<br>(116.7)       | 13.53<br>(116.2)     | 9.002<br>(22.07)       | -12.10<br>(21.80)      |
| group(SIC) = 5        | 4.028<br>(123.0)       | 0.735<br>(122.4)     | 9.294<br>(23.25)       | -10.45<br>(22.95)      |
| group(SIC) = 6        | 1.336<br>(121.8)       | -3.896<br>(121.2)    | 3.646<br>(23.02)       | -9.140<br>(22.73)      |
| group(SIC) = 7        | 38.02<br>(125.8)       | 15.50<br>(126.0)     | 16.29<br>(23.79)       | -15.30<br>(23.63)      |
| group(SIC) = 8        | -16.40<br>(118.4)      | -27.66<br>(118.0)    | 9.170<br>(22.38)       | -1.137<br>(22.13)      |
| group(SIC) = 9        | 1.943<br>(124.1)       | -1.171<br>(123.5)    | 1.451<br>(23.47)       | -6.844<br>(23.17)      |
| In_IPO                | -11.65<br>(18.46)      | -10.44<br>(18.39)    | 0.997<br>(3.491)       | 2.170<br>(3.448)       |
| In_Cap                | 12.92**<br>(5.460)     | 11.61**<br>(5.495)   | 2.000*<br>(1.032)      | 1.921*<br>(1.030)      |
| DE_Ratio              | -0.0129<br>(0.0588)    | -0.00762<br>(0.0587) | -0.00771<br>(0.0111)   | -0.0157<br>(0.0110)    |
| Current_Ratio         | 3.171*<br>(1.701)      | 2.125<br>(1.815)     | 1.787***<br>(0.322)    | -0.377<br>(0.340)      |
| CF_Sales_Ratio        | 0.0282<br>(0.0340)     | 0.0344<br>(0.0341)   | 0.0268***<br>(0.00644) | 0.0489***<br>(0.00639) |
| Constant              | -164.4<br>(137.8)      | -154.7<br>(137.3)    | -33.41<br>(26.05)      | -24.56<br>(25.74)      |
| Observations          | 178                    | 178                  | 178                    | 178                    |
| R-squared             | 0.111                  | 0.125                | 0.296                  | 0.466                  |
| R-squared adjusted    | -0.003                 | 0.007                | 0.207                  | 0.395                  |

Source: Own Calculation; Note: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### Appendix 1: Robustness – Regression including Alternative Performance Measures (cont'd)

| VARIABLES             | (3a)<br>Pre-Crisis ROIC | (3b)<br>Crisis ROIC  | (4a)<br>Pre-Crisis TobinsQ | (4b)<br>Crisis TobinsQ    |
|-----------------------|-------------------------|----------------------|----------------------------|---------------------------|
| TFF                   | 28.17**<br>(12.75)      | 26.32<br>(68.90)     | 1.673*<br>(0.921)          | 0.327<br>(0.451)          |
| LFF                   | 16.44<br>(23.76)        | -104.7<br>(128.1)    | 2.321<br>(1.717)           | 1.062<br>(0.838)          |
| Other_Individual      | -4.723<br>(39.86)       | 127.2<br>(213.7)     | 3.226<br>(2.879)           | 0.0286<br>(1.398)         |
| Financial_Institution | -0.125<br>(17.20)       | 28.11<br>(93.78)     | 0.665<br>(1.243)           | -0.125<br>(0.613)         |
| PE                    | 23.51<br>(28.44)        | -1,481***<br>(152.4) | -0.986<br>(2.055)          | 1.353<br>(0.997)          |
| State                 | -15.81<br>(45.59)       | 17.42<br>(244.4)     | -3.493<br>(3.293)          | -1.375<br>(1.598)         |
| Other                 | 19.62<br>(14.77)        | -2.895<br>(79.15)    | 0.0652<br>(1.067)          | -0.419<br>(0.518)         |
| Pre_Crisis_Return     |                         | 43.83<br>(30.54)     |                            | 0.230<br>(0.200)          |
| group(SIC) = 2        | 15.03<br>(44.62)        | -109.5<br>(239.2)    | -0.00106<br>(3.223)        | -1.052<br>(1.565)         |
| group(SIC) = 3        | 9.664<br>(42.07)        | -102.8<br>(225.4)    | -0.0406<br>(3.039)         | -1.146<br>(1.474)         |
| group(SIC) = 4        | 14.76<br>(41.58)        | -132.8<br>(222.8)    | 0.186<br>(3.004)           | -1.423<br>(1.457)         |
| group(SIC) = 5        | 9.188<br>(43.80)        | -105.6<br>(234.6)    | 0.00778<br>(3.164)         | -1.728<br>(1.534)         |
| group(SIC) = 6        | 5.177<br>(43.37)        | -102.5<br>(232.4)    | -0.589<br>(3.133)          | -1.313<br>(1.520)         |
| group(SIC) = 7        | 23.31<br>(44.82)        | -172.8<br>(241.6)    | 0.0524<br>(3.237)          | -1.853<br>(1.580)         |
| group(SIC) = 8        | 1.410<br>(42.16)        | -35.52<br>(226.2)    | 1.187<br>(3.045)           | -1.146<br>(1.480)         |
| group(SIC) = 9        | 1.412<br>(44.21)        | -109.2<br>(236.8)    | -0.533<br>(3.194)          | -1.656<br>(1.549)         |
| ln_IPO                | -2.025<br>(6.576)       | 30.50<br>(35.26)     | -1.122**<br>(0.475)        | -0.682***<br>(0.231)      |
| ln_Cap                | 5.569***<br>(1.944)     | 3.066<br>(10.53)     | 0.335**<br>(0.140)         | 0.212***<br>(0.0689)      |
| DE_Ratio              | -0.0195<br>(0.0210)     | -0.166<br>(0.112)    | -0.00150<br>(0.00151)      | -0.000793<br>(0.000735)   |
| Current_Ratio         | 2.147***<br>(0.606)     | -2.410<br>(3.480)    | -0.0113<br>(0.0438)        | -0.0182<br>(0.0228)       |
| CF_Sales_Ratio        | 0.0290**<br>(0.0121)    | 0.0491<br>(0.0654)   | -0.00327***<br>(0.000876)  | -0.00440***<br>(0.000428) |
| Constant              | -73.72<br>(49.08)       | 9.363<br>(263.1)     | 1.293<br>(3.545)           | 2.766<br>(1.721)          |
| Observations          | 178                     | 178                  | 178                        | 178                       |
| R-squared             | 0.211                   | 0.440                | 0.183                      | 0.489                     |
| R-squared adjusted    | 0.111                   | 0.365                | 0.079                      | 0.420                     |

Source: Own Calculation; Note: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix 2: Robustness – Regression including Alternative Performance Measures and Family CEO

| VARIABLES             | (1a)<br>Pre-Crisis ROE | (1b)<br>Crisis ROE   | (2a)<br>Pre-Crisis ROA | (2b)<br>Crisis ROA     |
|-----------------------|------------------------|----------------------|------------------------|------------------------|
| FamilyxFamily_CEO     | 78.96<br>(51.90)       | 66.53<br>(52.29)     | 26.32***<br>(9.780)    | 11.31<br>(9.809)       |
| FamilyxExternalCEO    | 45.94<br>(41.43)       | 41.18<br>(41.37)     | 13.48*<br>(7.808)      | 13.27*<br>(7.760)      |
| LFF                   | 14.31<br>(66.97)       | 2.340<br>(67.12)     | 8.148<br>(12.62)       | -3.632<br>(12.59)      |
| Other_Individual      | 54.65<br>(112.2)       | 62.04<br>(111.8)     | 13.89<br>(21.14)       | 11.38<br>(20.98)       |
| Financial_Institution | 13.24<br>(48.40)       | -0.956<br>(49.05)    | 1.993<br>(9.121)       | -6.386<br>(9.203)      |
| PE                    | 83.22<br>(80.29)       | 84.20<br>(79.94)     | 5.134<br>(15.13)       | -49.29***<br>(15.00)   |
| State                 | -23.75<br>(128.3)      | -31.87<br>(127.9)    | -8.391<br>(24.18)      | -3.981<br>(23.99)      |
| Other                 | 40.81<br>(41.57)       | 43.42<br>(41.42)     | 7.387<br>(7.835)       | 8.751<br>(7.772)       |
| Pre_Crisis_Return     |                        | 24.79<br>(16.03)     |                        | 12.33***<br>(3.007)    |
| group(SIC) = 2        | 32.96<br>(126.8)       | 21.70<br>(126.5)     | 13.26<br>(23.90)       | -3.025<br>(23.73)      |
| group(SIC) = 3        | 25.99<br>(119.6)       | 20.12<br>(119.2)     | 10.65<br>(22.54)       | -12.20<br>(22.36)      |
| group(SIC) = 4        | 30.74<br>(118.6)       | 22.14<br>(118.2)     | 13.29<br>(22.35)       | -12.76<br>(22.18)      |
| group(SIC) = 5        | 14.32<br>(124.6)       | 8.713<br>(124.1)     | 13.30<br>(23.47)       | -11.07<br>(23.28)      |
| group(SIC) = 6        | 8.945<br>(122.8)       | 2.069<br>(122.3)     | 6.606<br>(23.14)       | -9.601<br>(22.95)      |
| group(SIC) = 7        | 49.37<br>(127.7)       | 24.75<br>(128.1)     | 20.70<br>(24.06)       | -16.02<br>(24.04)      |
| group(SIC) = 8        | -6.530<br>(119.9)      | -19.81<br>(119.7)    | 13.01<br>(22.60)       | -1.743<br>(22.45)      |
| group(SIC) = 9        | 12.56<br>(125.8)       | 7.056<br>(125.3)     | 5.581<br>(23.71)       | -7.480<br>(23.51)      |
| In_IPO                | -11.93<br>(18.51)      | -10.68<br>(18.45)    | 0.891<br>(3.488)       | 2.188<br>(3.461)       |
| In_Cap                | 13.38**<br>(5.530)     | 11.99**<br>(5.578)   | 2.177**<br>(1.042)     | 1.892*<br>(1.046)      |
| DE_Ratio              | -0.0137<br>(0.0590)    | -0.00836<br>(0.0588) | -0.00802<br>(0.0111)   | -0.0157<br>(0.0110)    |
| Current_Ratio         | 3.198*<br>(1.705)      | 2.171<br>(1.823)     | 1.798***<br>(0.321)    | -0.380<br>(0.342)      |
| CF_Sales_Ratio        | 0.0281<br>(0.0341)     | 0.0342<br>(0.0342)   | 0.0267***<br>(0.00643) | 0.0489***<br>(0.00641) |
| Constant              | -180.1<br>(140.9)      | -167.1<br>(140.5)    | -39.55<br>(26.55)      | -23.60<br>(26.36)      |
| Observations          | 178                    | 178                  | 178                    | 178                    |
| R-squared             | 0.113                  | 0.126                | 0.302                  | 0.466                  |
| R-squared adjusted    | -0.0069                | 0.002                | 0.209                  | 0.391                  |

Source: Own Calculation; Note: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix 2: Robustness – Regression including Alternative Performance Measures and Family CEO (cont'd)

| VARIABLES             | (3a)<br>Pre-Crisis ROIC | (3b)<br>Crisis ROIC  | (4a)<br>Pre-Crisis TobinsQ | (4b)<br>Crisis TobinsQ    |
|-----------------------|-------------------------|----------------------|----------------------------|---------------------------|
| FamilyxFamily_CEO     | 37.91**<br>(18.47)      | -28.39<br>(100.1)    | 2.187<br>(1.335)           | 0.891<br>(0.653)          |
| FamilyxExternalCEO    | 22.78<br>(14.75)        | 55.65<br>(79.20)     | 1.388<br>(1.066)           | 0.0250<br>(0.517)         |
| LFF                   | 17.41<br>(23.84)        | -111.0<br>(128.5)    | 2.372<br>(1.723)           | 1.127<br>(0.838)          |
| Other_Individual      | -3.975<br>(39.93)       | 123.7<br>(214.1)     | 3.265<br>(2.887)           | 0.0650<br>(1.396)         |
| Financial_Institution | -0.160<br>(17.23)       | 27.17<br>(93.92)     | 0.663<br>(1.245)           | -0.115<br>(0.613)         |
| PE                    | 25.16<br>(28.58)        | -1,490***<br>(153.1) | -0.899<br>(2.066)          | 1.446<br>(0.998)          |
| State                 | -16.64<br>(45.67)       | 21.38<br>(244.8)     | -3.537<br>(3.302)          | -1.415<br>(1.597)         |
| Other                 | 19.25<br>(14.80)        | -0.643<br>(79.31)    | 0.0456<br>(1.070)          | -0.442<br>(0.517)         |
| Pre_Crisis_Return     |                         | 45.80<br>(30.69)     |                            | 0.210<br>(0.200)          |
| group(SIC) = 2        | 19.69<br>(45.14)        | -136.0<br>(242.2)    | 0.245<br>(3.263)           | -0.778<br>(1.579)         |
| group(SIC) = 3        | 14.17<br>(42.58)        | -128.0<br>(228.2)    | 0.197<br>(3.078)           | -0.885<br>(1.488)         |
| group(SIC) = 4        | 19.82<br>(42.21)        | -161.3<br>(226.3)    | 0.452<br>(3.052)           | -1.129<br>(1.476)         |
| group(SIC) = 5        | 13.90<br>(44.34)        | -132.0<br>(237.6)    | 0.257<br>(3.205)           | -1.456<br>(1.549)         |
| group(SIC) = 6        | 8.665<br>(43.70)        | -122.3<br>(234.2)    | -0.405<br>(3.159)          | -1.110<br>(1.527)         |
| group(SIC) = 7        | 28.51<br>(45.44)        | -203.4<br>(245.3)    | 0.327<br>(3.285)           | -1.537<br>(1.600)         |
| group(SIC) = 8        | 5.933<br>(42.68)        | -61.51<br>(229.2)    | 1.426<br>(3.085)           | -0.878<br>(1.495)         |
| group(SIC) = 9        | 6.278<br>(44.78)        | -136.4<br>(239.9)    | -0.276<br>(3.237)          | -1.375<br>(1.565)         |
| In_IPO                | -2.150<br>(6.588)       | 31.29<br>(35.32)     | -1.128**<br>(0.476)        | -0.690***<br>(0.230)      |
| In_Cap                | 5.777***<br>(1.968)     | 1.809<br>(10.68)     | 0.346**<br>(0.142)         | 0.225***<br>(0.0697)      |
| DE_Ratio              | -0.0199<br>(0.0210)     | -0.163<br>(0.113)    | -0.00152<br>(0.00152)      | -0.000818<br>(0.000735)   |
| Current_Ratio         | 2.159***<br>(0.607)     | -2.561<br>(3.491)    | -0.0106<br>(0.0439)        | -0.0166<br>(0.0228)       |
| CF_Sales_Ratio        | 0.0290**<br>(0.0121)    | 0.0497<br>(0.0655)   | -0.00327***<br>(0.000878)  | -0.00441***<br>(0.000427) |
| Constant              | -80.96<br>(50.14)       | 50.32<br>(269.0)     | 0.910<br>(3.625)           | 2.344<br>(1.755)          |
| Observations          | 178                     | 178                  | 178                        | 178                       |
| R-squared             | 0.214                   | 0.442                | 0.184                      | 0.493                     |
| R-squared adjusted    | 0.108                   | 0.363                | 0.074                      | 0.421                     |

Source: Own Calculation; Note: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### Appendix 3: Robustness – Regression including Alternative Independent Variable Definitions and Family CEO

| DV: Total shareholder return<br>VARIABLES | (1)<br>Crisis_50%       | (2)<br>Crisis_30%        | (3)<br>Crisis_25%       |
|---|-------------------------|--------------------------|-------------------------|
| Family_CEO_Dummy                          | -0.0253<br>(0.0883)     | 0.0395<br>(0.0785)       | 0.0746<br>(0.0776)      |
| External_CEO_Dummy                        | 0.0976<br>(0.125)       | 0.0911<br>(0.105)        | 0.121<br>(0.0992)       |
| LFF_Dummy                                 | 0.195<br>(0.164)        |                          |                         |
| Other_Individual_Dummy                    | 0.327<br>(0.271)        | 0.310<br>(0.192)         | 0.250<br>(0.160)        |
| Financial_Institution_Dummy               | 0.0243<br>(0.113)       | 0.0351<br>(0.0859)       | 0.0507<br>(0.0834)      |
| PE_Dummy                                  | -0.0301<br>(0.221)      | 0.0121<br>(0.192)        | 0.0351<br>(0.150)       |
| State_Dummy                               | 0.446<br>(0.285)        | 0.454**<br>(0.228)       | 0.391**<br>(0.195)      |
| Other_Dummy                               | 0.00367<br>(0.116)      | -0.00621<br>(0.0869)     | -0.0136<br>(0.0797)     |
| Pre_Crisis_Return                         | -0.0452<br>(0.0522)     | -0.0324<br>(0.0505)      | -0.0442<br>(0.0514)     |
| group(SIC) = 2                            | -0.401<br>(0.401)       | -0.303<br>(0.412)        | -0.282<br>(0.412)       |
| group(SIC) = 3                            | -0.421<br>(0.382)       | -0.343<br>(0.389)        | -0.340<br>(0.387)       |
| group(SIC) = 4                            | -0.505<br>(0.376)       | -0.428<br>(0.386)        | -0.419<br>(0.384)       |
| group(SIC) = 5                            | -0.580<br>(0.393)       | -0.552<br>(0.405)        | -0.532<br>(0.402)       |
| group(SIC) = 6                            | -0.320<br>(0.393)       | -0.275<br>(0.396)        | -0.263<br>(0.395)       |
| group(SIC) = 7                            | -0.444<br>(0.404)       | -0.381<br>(0.416)        | -0.365<br>(0.418)       |
| group(SIC) = 8                            | -0.201<br>(0.382)       | -0.102<br>(0.391)        | -0.0935<br>(0.389)      |
| group(SIC) = 9                            | -0.190<br>(0.399)       | -0.0908<br>(0.408)       | -0.0667<br>(0.407)      |
| ln_IPO                                    | 0.0336<br>(0.0595)      | 0.0388<br>(0.0596)       | 0.0330<br>(0.0590)      |
| ln_Cap                                    | 0.00285<br>(0.0174)     | -0.000659<br>(0.0177)    | 0.000543<br>(0.0178)    |
| DE_Ratio                                  | -0.000245<br>(0.000188) | -0.000313*<br>(0.000189) | -0.000303<br>(0.000190) |
| Current_Ratio                             | 0.00854<br>(0.00590)    | 0.00938<br>(0.00584)     | 0.00980*<br>(0.00587)   |
| CF_Sales_Ratio                            | -8.43e-05<br>(0.000112) | -7.15e-05<br>(0.000110)  | -7.47e-05<br>(0.000110) |
| Constant                                  | -0.163<br>(0.437)       | -0.231<br>(0.449)        | -0.253<br>(0.449)       |
| Observations                              | 178                     | 178                      | 178                     |
| R-squared                                 | 0.186                   | 0.191                    | 0.193                   |
| R-squared adjusted                        | 0.071                   | 0.082                    | 0.085                   |

Source: Own Calculation; Note: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix 4: Robustness – Regression including Alternative Independent Variable Definitions and Alternative Performance Measures

| VARIABLES                   | (1a)<br>ROA_50%      | (1b)<br>ROIC_50%     | (1c)<br>TobinsQ_50% | (2a)<br>ROA_50%      | (2b)<br>ROIC_30%     | (2c)<br>TobinsQ_30% | (3a)<br>ROA_25%     | (3b)<br>ROIC_25%     | (3c)<br>TobinsQ_25% |
|-----------------------------|----------------------|----------------------|---------------------|----------------------|----------------------|---------------------|---------------------|----------------------|---------------------|
| TFF_Dummy                   | 8.378*<br>(4.493)    | 0.281<br>(48.14)     | 0.330<br>(0.299)    | 7.719*<br>(4.063)    | 3.087<br>(45.92)     | 0.0916<br>(0.269)   | 8.008*<br>(4.083)   | 18.97<br>(48.59)     | 0.330<br>(0.266)    |
| LFF_Dummy                   | 5.872<br>(9.533)     | -8.251<br>(102.1)    | 0.176<br>(0.634)    | 3.381<br>(6.770)     | 1.419<br>(76.52)     | 0.646<br>(0.449)    | 0.575<br>(6.474)    | -7.726<br>(77.04)    | 0.632<br>(0.423)    |
| Other_Individual_Dummy      | 0.234<br>(15.80)     | 10.35<br>(169.3)     | 0.432<br>(1.051)    | 2.432<br>(11.33)     | 26.08<br>(128.0)     | -0.0141<br>(0.751)  | 6.577<br>(9.531)    | 122.8<br>(113.4)     | -0.199<br>(0.622)   |
| Financial_Institution_Dummy | -0.126<br>(6.611)    | -6.785<br>(70.83)    | -0.296<br>(0.440)   | -6.215<br>(5.067)    | -14.18<br>(57.27)    | -0.130<br>(0.336)   | -4.609<br>(4.997)   | -3.464<br>(59.47)    | -0.0430<br>(0.326)  |
| PE_Dummy                    | -40.28***<br>(12.90) | -1,159***<br>(138.2) | 1.170<br>(0.858)    | -29.47***<br>(11.32) | -857.8***<br>(127.9) | 0.711<br>(0.750)    | -15.52*<br>(9.016)  | -491.9***<br>(107.3) | 0.554<br>(0.588)    |
| State_Dummy                 | 4.537<br>(16.61)     | 20.48<br>(178.0)     | -0.432<br>(1.106)   | 4.361<br>(13.44)     | 77.25<br>(151.9)     | -0.550<br>(0.891)   | -1.985<br>(11.61)   | 37.99<br>(138.2)     | -0.715<br>(0.758)   |
| Other_Dummy                 | 4.384<br>(6.739)     | -14.76<br>(72.21)    | -0.272<br>(0.448)   | 1.988<br>(5.122)     | -10.48<br>(57.89)    | -0.326<br>(0.339)   | 4.985<br>(4.779)    | 22.27<br>(56.88)     | -0.283<br>(0.312)   |
| Pre_Crisis_Return           | 11.18***<br>(3.034)  | 38.09<br>(32.51)     | 0.267<br>(0.202)    | 12.92***<br>(2.956)  | 64.51*<br>(33.41)    | 0.245<br>(0.196)    | 12.65***<br>(3.024) | 65.06*<br>(35.99)    | 0.220<br>(0.197)    |
| group(SIC) = 2              | -4.465<br>(23.38)    | 25.99<br>(250.6)     | -1.219<br>(1.556)   | 4.063<br>(23.76)     | 20.45<br>(268.6)     | -1.177<br>(1.575)   | 3.319<br>(24.10)    | 20.51<br>(286.8)     | -0.898<br>(1.573)   |
| group(SIC) = 3              | -11.55<br>(22.23)    | 71.04<br>(238.1)     | -1.409<br>(1.479)   | -4.100<br>(22.34)    | 56.43<br>(252.5)     | -1.225<br>(1.481)   | -5.919<br>(22.60)   | 35.59<br>(268.9)     | -1.121<br>(1.475)   |
| group(SIC) = 4              | -13.99<br>(21.90)    | -18.40<br>(234.7)    | -1.649<br>(1.457)   | -6.543<br>(22.11)    | -14.80<br>(249.9)    | -1.532<br>(1.466)   | -7.523<br>(22.36)   | -25.82<br>(266.1)    | -1.365<br>(1.459)   |
| group(SIC) = 5              | -12.64<br>(22.92)    | 27.49<br>(245.5)     | -1.973<br>(1.525)   | -5.436<br>(23.34)    | 5.210<br>(263.8)     | -1.868<br>(1.547)   | -5.095<br>(23.55)   | 4.817<br>(280.2)     | -1.577<br>(1.537)   |
| group(SIC) = 6              | -9.348<br>(22.88)    | 33.04<br>(245.1)     | -1.564<br>(1.522)   | -2.286<br>(22.97)    | 27.71<br>(259.6)     | -1.356<br>(1.523)   | -2.102<br>(23.25)   | 60.71<br>(276.7)     | -1.287<br>(1.518)   |
| group(SIC) = 7              | -16.22<br>(23.51)    | 8.343<br>(251.9)     | -2.115<br>(1.564)   | -7.188<br>(23.88)    | -8.186<br>(269.9)    | -2.044<br>(1.582)   | -8.904<br>(24.32)   | -14.00<br>(289.4)    | -1.788<br>(1.587)   |
| group(SIC) = 8              | -2.691<br>(22.27)    | 79.52<br>(238.6)     | -1.315<br>(1.482)   | 3.793<br>(22.48)     | 62.73<br>(254.1)     | -1.239<br>(1.490)   | 3.707<br>(22.75)    | 77.07<br>(270.7)     | -1.124<br>(1.485)   |

|                    |                        |                     |                           |                        |                     |                           |                        |                    |                           |
|--------------------|------------------------|---------------------|---------------------------|------------------------|---------------------|---------------------------|------------------------|--------------------|---------------------------|
| group(SIC) = 9     | -6.768<br>(23.21)      | 41.26<br>(248.7)    | -1.938<br>(1.545)         | 1.683<br>(23.53)       | 41.61<br>(266.0)    | -1.774<br>(1.560)         | -0.0751<br>(23.85)     | 26.32<br>(283.9)   | -1.509<br>(1.557)         |
| ln_IPO             | 2.862<br>(3.469)       | 34.42<br>(37.16)    | -0.662***<br>(0.231)      | 2.608<br>(3.508)       | 31.84<br>(39.65)    | -0.678***<br>(0.232)      | 2.277<br>(3.520)       | 26.87<br>(41.89)   | -0.685***<br>(0.230)      |
| ln_Cap             | 2.036**<br>(1.012)     | 6.339<br>(10.84)    | 0.180***<br>(0.0673)      | 2.064**<br>(1.034)     | 7.058<br>(11.68)    | 0.206***<br>(0.0685)      | 2.156**<br>(1.057)     | 8.841<br>(12.58)   | 0.207***<br>(0.0690)      |
| DE_Ratio           | -0.0189*<br>(0.0110)   | -0.239**<br>(0.117) | -0.000822<br>(0.000729)   | -0.0205*<br>(0.0111)   | -0.268**<br>(0.125) | -0.000688<br>(0.000735)   | -0.0199*<br>(0.0113)   | -0.250*<br>(0.135) | -0.000746<br>(0.000740)   |
| Current_Ratio      | -0.349<br>(0.343)      | -0.836<br>(3.679)   | -0.0173<br>(0.0228)       | -0.343<br>(0.343)      | -1.672<br>(3.872)   | -0.0195<br>(0.0227)       | -0.321<br>(0.348)      | -1.355<br>(4.146)  | -0.0196<br>(0.0227)       |
| CF_Sales_Ratio     | 0.0496***<br>(0.00650) | 0.0670<br>(0.0696)  | -0.00439***<br>(0.000432) | 0.0504***<br>(0.00650) | 0.0735<br>(0.0734)  | -0.00440***<br>(0.000430) | 0.0498***<br>(0.00658) | 0.0654<br>(0.0783) | -0.00441***<br>(0.000429) |
| Constant           | -26.33<br>(25.44)      | -195.6<br>(272.6)   | 3.373**<br>(1.693)        | -34.23<br>(25.76)      | -207.5<br>(291.1)   | 2.996*<br>(1.707)         | -34.55<br>(26.20)      | -231.2<br>(311.8)  | 2.775<br>(1.710)          |
| Observations       | 178                    | 178                 | 178                       | 178                    | 178                 | 178                       | 178                    | 178                | 178                       |
| R-squared          | 0.458                  | 0.375               | 0.485                     | 0.455                  | 0.301               | 0.486                     | 0.441                  | 0.206              | 0.490                     |
| R-squared adjusted | 0.385                  | 0.291               | 0.416                     | 0.381                  | 0.207               | 0.417                     | 0.366                  | 0.099              | 0.421                     |

Source: Own Calculation; Note: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1



**Appendix 5: Further Regression Analyses including Family CEO**

| VARIABLES             | (1a)<br>Δ Workforce     | (1b)<br>Δ Salaries     | (2a)<br>Δ Long-Term<br>Debt | (2b)<br>Δ Short-Term<br>Debt | (3)<br>Δ Capex-Asset<br>Ratio |
|-----------------------|-------------------------|------------------------|-----------------------------|------------------------------|-------------------------------|
| FamilyxFamily_CEO     | 0.00932<br>(0.104)      | 0.0525<br>(0.130)      | 10.83<br>(40.30)            | -89.64<br>(84.19)            | 7.827<br>(9.993)              |
| FamilyxExternalCEO    | -0.0443<br>(0.0822)     | -0.0603<br>(0.103)     | -4.032<br>(31.88)           | -41.69<br>(66.60)            | 4.401<br>(7.905)              |
| LFF                   | 0.0915<br>(0.133)       | -0.0287<br>(0.167)     | 14.70<br>(51.73)            | 12.83<br>(108.1)             | -17.70<br>(12.83)             |
| Other_Individual      | -0.00947<br>(0.222)     | 0.182<br>(0.279)       | -56.12<br>(86.18)           | 23.28<br>(180.0)             | 25.31<br>(21.37)              |
| Financial_Institution | -0.0966<br>(0.0974)     | -0.133<br>(0.122)      | 59.70<br>(37.81)            | -52.62<br>(78.98)            | 21.20**<br>(9.375)            |
| PE                    | -0.00118<br>(0.159)     | -0.0706<br>(0.199)     | 90.04<br>(61.62)            | -43.50<br>(128.7)            | 23.08<br>(15.28)              |
| State                 | -0.322<br>(0.254)       | -0.421<br>(0.319)      | -188.1*<br>(98.55)          | 53.39<br>(205.9)             | -6.816<br>(24.44)             |
| Other                 | -0.00355<br>(0.0823)    | 0.0572<br>(0.103)      | 29.55<br>(31.93)            | -10.01<br>(66.70)            | 1.766<br>(7.917)              |
| Pre_Crisis_Return     | 0.0827**<br>(0.0318)    | 0.121***<br>(0.0400)   | -8.717<br>(12.35)           | -28.57<br>(25.81)            | 0.766<br>(3.063)              |
| group(SIC) = 2        | -0.00145<br>(0.251)     | 0.0682<br>(0.316)      | 1.951<br>(97.48)            | -25.01<br>(203.6)            | 12.01<br>(24.17)              |
| group(SIC) = 3        | -0.213<br>(0.237)       | -0.219<br>(0.297)      | 1.834<br>(91.85)            | -22.54<br>(191.9)            | 6.854<br>(22.77)              |
| group(SIC) = 4        | -0.229<br>(0.235)       | -0.205<br>(0.295)      | 6.532<br>(91.12)            | -28.55<br>(190.3)            | 6.581<br>(22.59)              |
| group(SIC) = 5        | -0.242<br>(0.246)       | -0.178<br>(0.310)      | 121.4<br>(95.63)            | -60.59<br>(199.8)            | 22.17<br>(23.71)              |
| group(SIC) = 6        | -0.247<br>(0.243)       | -0.289<br>(0.305)      | 9.893<br>(94.27)            | 215.7<br>(196.9)             | -5.519<br>(23.37)             |
| group(SIC) = 7        | -0.233<br>(0.254)       | -0.141<br>(0.320)      | -2.532<br>(98.75)           | -19.89<br>(206.3)            | -14.75<br>(24.48)             |
| group(SIC) = 8        | -0.0717<br>(0.238)      | -0.0279<br>(0.299)     | 3.098<br>(92.25)            | -32.25<br>(192.7)            | 18.04<br>(22.87)              |
| group(SIC) = 9        | -0.164<br>(0.249)       | -0.107<br>(0.313)      | 0.426<br>(96.58)            | -48.34<br>(201.7)            | 1.529<br>(23.95)              |
| In_IPO                | -0.0803**<br>(0.0366)   | -0.0792*<br>(0.0460)   | -8.272<br>(14.22)           | -10.15<br>(29.70)            | 2.257<br>(3.525)              |
| In_Cap                | 0.0105<br>(0.0111)      | 0.00746<br>(0.0139)    | 0.915<br>(4.299)            | -3.281<br>(8.981)            | 2.016*<br>(1.066)             |
| DE_Ratio              | -0.000102<br>(0.000117) | 7.65e-06<br>(0.000147) | -0.0458<br>(0.0453)         | -0.00389<br>(0.0947)         | 0.00491<br>(0.0112)           |
| Current_Ratio         | -0.00481<br>(0.00362)   | -0.000374<br>(0.00455) | -1.603<br>(1.405)           | 8.683***<br>(2.935)          | 9.693***<br>(0.348)           |
| CF_Sales_Ratio        | 1.53e-05<br>(6.79e-05)  | 6.06e-05<br>(8.53e-05) | -0.00906<br>(0.0264)        | 0.0299<br>(0.0551)           | 0.0363***<br>(0.00653)        |
| Constant              | 0.290<br>(0.279)        | 0.320<br>(0.351)       | 5.483<br>(108.3)            | 118.8<br>(226.2)             | -66.50**<br>(26.85)           |
| Observations          | 178                     | 178                    | 178                         | 178                          | 178                           |
| R-squared             | 0.230                   | 0.216                  | 0.135                       | 0.166                        | 0.878                         |
| R-squared adjusted    | 0.121                   | 0.105                  | 0.012                       | 0.047                        | 0.861                         |

Source: Own Calculation; Note: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1