Internet Appendix: CEO Selection and Executive Appearance
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Measurement error, mask decomposition and smiles

While using this new technology to measure attractiveness is free from subjective bias, like any other scientific measurement, using the Phi-Mask can be prone to measurement error. Placing the mask on an executive's face and recording measurements from 25 nodes on the mask to the 25 corresponding nodes on various executive faces requires graphic design skills. Thus, it is possible for different graphic designers to arrive at different measurements for the same executive. However, while different designer's measurements may differ systematically, it is important that each measurement process be consistent throughout the entire sample and, therefore, unbiased. Thus, differences should be in scale only and their rank ordering of executive attractiveness should be very highly correlated. To test for measurement error, and for robustness, we hired a second graphic designer to measure the mask deviations for the subsample of newly selected CEOs. Figure A shows a scatter diagram of the two measurements, which have a correlation coefficient of 0.93. The diagram and high correlation of the two measurements reveal that the measurement differences are indeed very small. Accordingly, we find similar results when we repeat our primary analysis using either measure or combinations of the two measures. For example, in unreported robustness analysis we find similar results either when we use the average of these two measures as our measure of attractiveness or if we regress one measure on the other and use the resulting predicted values as our measure of attractiveness. Thus, measurement error does not appear to be determining any of our results. If anything, it increases the noise in our measurements, biasing against finding significant relations.

Executive smiles are another source of potential measurement error. Because the Phi-Mask is designed for a non-smiling face, we search for executive pictures with little to no smile. However, some of the executive pictures do have some form of a smile. These smiles, even if subtle, can still affect the contour of the lips and thus lead to greater deviations from the nodes around the executive's mouth. This variation does introduce noise to our measure and to the degree that executives who are more attractive or who eventually win tournaments are more likely to have pictures with slight smiles, it will bias against finding results.[17] We address this concern by

[17] While faces with smiles can be subjectively viewed as more attractive (Little, Jones and DeBruine (2011)), smiling creates greater deviations for our measure of attractiveness.

exploring whether some facial features are more influential. We use an attribute of the mask-based measure of attractiveness where the design of the mask allows us to examine separately deviations in various subsections of the face, such as deviations around the nose or cheeks or eyes, to see if some subsections are more important in executive outcomes than others. For this test, we decompose our primary measure, the Sum of Mask Deviations, into four separate measures. Specifically, we separately examine deviations from the nodes corresponding to the mouth and chin, the nose and jaw, the eyes and the forehead. We then repeat our primary analyses from the paper using these four sub-groups of mask deviations and report our results in Table A1.

In Model 1, we report results for executive total compensation. Here, we find that no single area of the face is associated with significant results. However, the coefficient estimates for deviations around the mouth and chin, nose and cheek and eyes are all negative, consistent with our primary findings, whereas the coefficient estimate for forehead deviations is positive. Thus, while the primary results seem to be driven by these first three groups, each one individually is not significantly related to executive compensation.

In Model 2, we report results for CEO selection. We again find no significant relation for deviations around the forehead. However, we find strong results, consistent with our primary measure, that smaller deviations around the mouth and chin, nose and cheek and eyes are associated with a greater likelihood of being promoted to CEO. In Model 3, we find the shareholder reaction is greater when deviations are smaller around the mouth and chin. Finally, in Model 4, none of the 4 areas of the face are individually related to the speed in which a new CEO is appointed as board chair. The results in Models 1-4 suggest that measures of fundamental facial attractiveness for the entire face are important. Furthermore, since the entire face is important, there is less concern that deviations due to smiles impact our results. However, the fact that the mouth and chin have a slightly greater effect on announcement returns suggests that the noise due to smiles could weaken these results.

Figure A. Correlation between two measurements using the Phi-Mask for CEOs

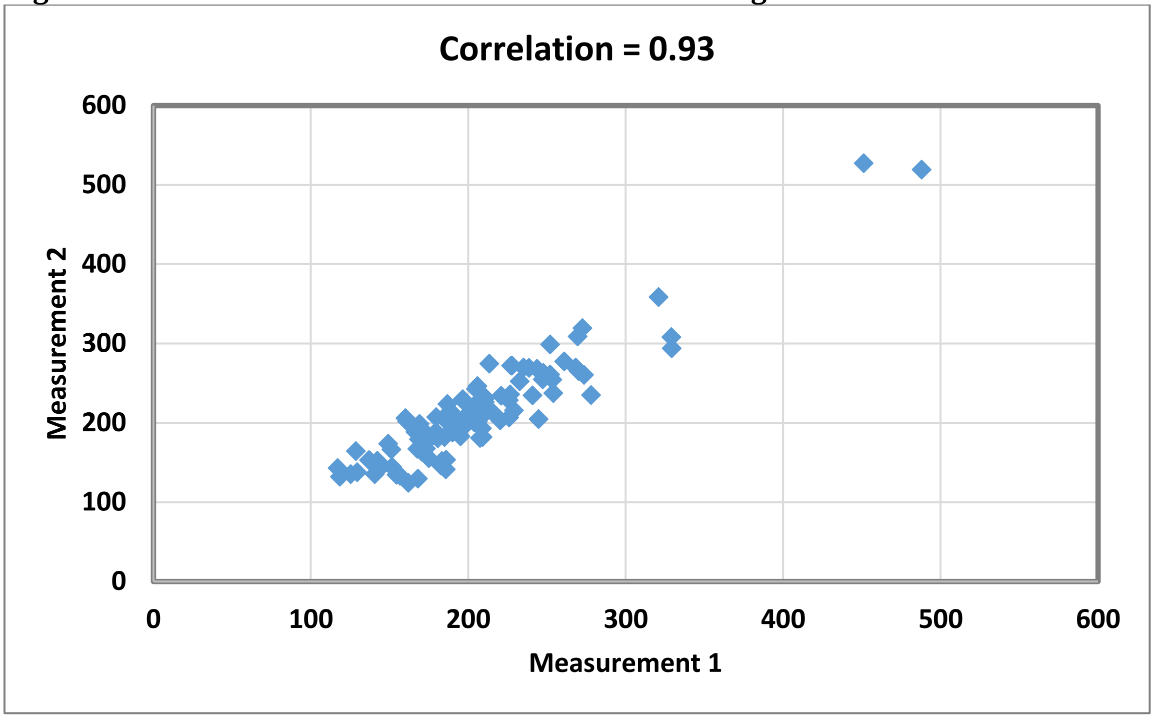

TABLE A1. Decomposition of the Phi Mask

This table reports results repeating the analysis reported in the paper while using a decomposed measure of facial attractiveness. We decompose our primary measure, SUM_OF_MASK_DEVIATIONS, into four separate facial component groups. MOUTH_&_CHIN_DEVIATIONS is the sum of deviations from the following nodes: chin, lower lip, upper lip, left jaw, right jaw, left lower lip and right lower lip. NOSE_&_CHEEK_DEVIATIONS is the sum of deviations from the following nodes: nose base, nose tip, nose bridge, left nostril, right nostril, left cheek and right cheek. EYE_DEVIATIONS is the sum of deviations from the following nodes: left eyelid base, right eyelid base, left eyelid top, right eyelid top, left eyelid outer, right eyelid outer, left eyelid inner and right eyelid inner. FOREHEAD_DEVIATIONS is the sum of deviations from the following nodes: left forehead, right forehead and top face. Standard errors are robust and clustered by firm. *p*-values are in parentheses beneath each coefficient estimate. *, **, *** indicate significance at the 10%, 5%, and 1% levels respectively.

Dependent variable:	TOTAL_COMP	SELECTED_CEO	CAR	DAYS_TO_CHAIR
	Model 1	Model 2	Model 3	Model 4
MOUTH_&_CHIN_DEVIATIONS	-0.141	-0.105**	-0.006*	0.848
	(0.22)	*(0.02)*	(0.09)	*(0.42)*
NOSE_&_CHEEK_DEVIATIONS	-0.063	-0.134***	-0.0003	1.062
	(0.61)	*(<.01)*	(0.93)	*(0.69)*
EYE_DEVIATIONS	-0.05	-0.097***	0.004	1.008
	(0.57)	*(<.01)*	(0.32)	*(0.96)*
FOREHEAD_DEVIATIONS	0.026	-0.002	0.0001	0.9146
	(0.79)	*(0.95)*	(0.99)	*(0.61)*
Industry Fixed Effects	Yes	Yes	No	No
Number of Observations	203	237	100	100
R^2 / Adjusted- R^2 / Prob> χ^2	28.16%	58.58%	8.44%	8.42%