Internet Appendix for "Industry Return Predictability: A Machine Learning Approach"

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This appendix provides tables with the complete results for the robustness checks discussed in the paper. Below, we briefly describe the contents of the appendix tables.

- Table A1 reports OLS post-LASSO estimation results using t-statistics based on White (1980) heteroskedasticity-robust standard errors; see footnote 10 in the paper.
- Table A2 reports LASSO estimation results; see footnote 12 in the paper.
- Table A3 reports full-model OLS estimation results; see footnote 12 in the paper.
- Table A4 reports OLS post-LASSO estimation results using Lee et al. (2016) post-selection confidence intervals; see footnote 13 the paper.
- Table A5 reports OLS post-LASSO estimation results for augmented predictive regression models that include lagged economic variables (dividend yield, Treasury bill yield, term spread, and credit spread); see footnote 15 in the paper.
- Table A6 reports OLS post-ENet estimation results; see footnote 16 in the paper.
- Table A7 reports average returns during good and bad macroeconomic states using t-statistics based on White (1980) heteroskedasticity-robust standard errors; see footnote 18 in the paper.

- Table A8 reports multifactor model estimation results using t-statistics based on White (1980) heteroskedasticity-robust standard errors; see footnote 21 in the paper.

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Table A1: OLS Post-LASSO Predictive Regression Estimation Results Using White (1980) Heteroskedasticity-Robust Standard Errors, 1960:01–2016:12

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Food	Beer	Smoke	Games	Books	Hshld	Clths	Hlth	Chems	Txtls
Food	–	**0.12**	–	–	–	–	–	–	–	–
Beer	–	–	–	–	–	–	–	–	–	–
Smoke	–	–	–	–	–	–	–	–	–	–
Games	–	–	–	–	0.03	–	–	–	–	–
Books	–	–	–	**0.18**	0.04	–	0.06	***0.10***	–	–
Hshld	–	–	–	–	–	–	–	–	–	–
Clths	0.04	0.05	–	0.05	–	**0.10**	0.07	–	***0.08***	0.09
Hlth	–	–	–	–	–	–	–	–	–	–
Chems	–	–	–	–	–	–	0.15	–	–	–
Txtls	–	–	0.06	–	–	–	–	–	–	–
Cnstr	–	–	–	–	–	–	–	–	–	–
Steel	–	–	–	–	–	–	−0.08	–	–	–
FabPr	–	–	–	–	–	–	–	–	–	–
ElcEq	–	–	–	–	–	–	***−0.27***	–	–	–
Autos	–	–	–	–	–	–	–	–	–	0.11
Carry	–	–	***0.17***	–	–	–	0.05	–	–	–
Mines	–	–	−0.02	–	–	–	–	***−0.06***	–	–
Coal	***−0.06***	***−0.06***	−0.03	***−0.10***	−0.04	***−0.05***	−0.05	***−0.05***	–	***−0.07***
Oil	–	–	**−0.10**	–	***−0.17***	–	***−0.15***	–	–	***−0.15***
Util	**0.09**	–	***0.27***	–	**0.13**	–	**0.16**	**0.11**	–	–
Telcm	–	–	−0.11	–	–	–	−0.14	–	–	–
Servs	–	–	***−0.15***	–	0.05	–	0.12	–	–	–
BusEq	–	–	–	–	0.06	–	0.13	–	–	–
Paper	–	–	**−0.19**	–	–	–	–	–	–	–
Trans	–	–	0.10	–	–	–	–	–	–	–
Whlsl	–	–	–	–	–	–	–	–	–	–
Rtail	0.02	–	–	–	0.03	0.05	0.06	–	–	0.07
Meals	–	–	–	–	–	–	–	–	–	–
Fin	–	–	0.11	0.10	0.08	–	0.08	–	–	***0.18***
Other	–	–	–	–	–	–	–	–	–	–
R^2	2.24%	2.52%	6.54%	5.05%	6.30%	2.97%	7.93%	2.68%	0.78%	7.91%
	(0.93)	(1.35)	(2.73)	(5.62)	(8.20)	(2.29)	(7.93)	(1.61)	(0.89)	(9.60)

The table reports OLS slope coefficient estimates and the R^2 statistic for the predictive regression model selected by the LASSO. The regressand is the excess return for the industry portfolio in the column heading. The regressors are selected from the complete set of lagged industry excess returns in the first column. Each predictive regression model includes an intercept term. Bold (italicized bold) indicates significance at the 10% (5%) level according to t-statistics based on White (1980) heteroskedasticity-robust standard errors; – indicates that the lagged industry excess return was not selected by the LASSO. Parentheses report the Campbell and Thompson (2008) measure of the proportional increase in average excess return for a mean-variance investor who utilizes return predictability when allocating between a given industry portfolio and risk-free bills.

Table A1 (continued)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Cnstr	Steel	FabPr	ElcEq	Autos	Carry	Mines	Coal	Oil	Util
Food	–	–	–	–	–	–	–	–	–	0.10
Beer	–	–	–	–	–	–	–	***−0.27***	−0.08	***−0.10***
Smoke	–	–	–	–	–	–	–	−0.09	–	0.02
Games	–	–	–	–	–	–	–	–	–	–
Books	–	–	–	–	–	–	–	0.13	–	–
Hshld	–	–	–	–	***−0.30***	–	–	–	–	−0.08
Clths	0.04	–	–	–	0.04	–	–	–	–	–
Hlth	–	–	–	–	–	–	–	–	***−0.13***	−0.08
Chems	–	–	–	–	–	–	–	–	–	–
Txtls	–	–	–	–	–	–	–	–	–	–
Cnstr	–	–	–	–	–	–	–	–	–	***−0.18***
Steel	–	–	–	–	–	–	–	–	–	–
FabPr	–	–	–	–	–	–	–	–	–	**0.12**
ElcEq	–	–	–	–	–	–	–	–	–	–
Autos	–	–	–	–	–	–	–	−0.002	–	–
Carry	–	–	–	–	–	–	–	–	***0.17***	**0.08**
Mines	–	–	–	–	–	–	–	–	–	−0.04
Coal	***−0.06***	–	–	–	−0.05	–	–	0.08	–	–
Oil	***−0.14***	–	–	–	***−0.13***	–	–	***−0.20***	–	**−0.08**
Util	**0.15**	–	–	–	**0.17**	–	–	–	–	0.09
Telcm	–	–	–	–	–	–	–	–	–	0.07
Servs	–	–	–	–	–	–	–	–	–	–
BusEq	–	–	–	–	**0.12**	–	–	–	–	0.03
Paper	–	–	–	–	–	–	–	0.19	–	–
Trans	0.06	–	0.06	–	–	***0.16***	–	–	–	–
Whlsl	–	–	–	–	–	–	–	–	–	***−0.14***
Rtail	0.001	–	–	–	**0.18**	–	–	0.10	–	–
Meals	–	–	–	–	–	–	–	–	–	–
Fin	***0.15***	***0.15***	0.09	***0.10***	0.14	–	–	–	–	**0.13**
Other	–	–	–	–	–	–	–	–	–	**0.10**
R^2	5.13%	1.29%	1.56%	0.80%	6.13%	2.27%	–	2.84%	2.52%	7.88%
	(7.14)	(8.21)	(1.89)	(0.64)	(14.25)	(1.80)	–	(5.65)	(1.77)	(5.93)

Table A1 (continued)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Telcm	Servs	BusEq	Paper	Trans	Whlsl	Rtail	Meals	Fin	Other
Food	–	–	–	–	–	−0.10	–	–	–	–
Beer	−0.06	–	–	–	–	−0.05	–	–	–	–
Smoke	−0.03	**−0.09**	***−0.14***	–	–	−0.05	–	−0.06	–	–
Games	–	–	–	–	–	–	–	–	–	–
Books	0.09	0.10	***0.12***	–	–	***0.14***	–	0.06	–	–
Hshld	−0.07	–	–	–	–	–	–	–	–	–
Clths	–	–	–	0.06	–	–	–	0.10	–	0.08
Hlth	–	–	–	–	–	−0.06	–	–	–	–
Chems	–	–	–	–	–	–	–	–	–	–
Txtls	–	–	–	–	–	–	–	–	–	–
Cnstr	−0.07	–	–	–	–	–	–	–	–	–
Steel	–	−0.08	–	–	–	–	–	***−0.12***	–	–
FabPr	–	–	–	–	–	–	–	–	–	–
ElcEq	–	–	–	–	–	–	–	–	–	–
Autos	−0.04	–	–	–	–	–	–	–	–	–
Carry	−0.04	–	–	–	–	0.06	–	0.04	–	–
Mines	−0.01	–	–	–	–	–	–	–	–	–
Coal	−0.02	–	–	−0.04	–	−0.04	–	**−0.05**	–	–
Oil	**−0.09**	**−0.12**	–	***−0.11***	–	***−0.15***	–	***−0.15***	–	–
Util	**0.16**	0.12	**0.18**	–	–	***0.25***	–	0.12	–	–
Telcm	–	–	–	–	–	**−0.12**	–	–	–	–
Servs	0.02	–	–	–	–	0.05	–	0.07	–	–
BusEq	0.05	–	–	–	–	0.03	–	0.06	–	–
Paper	–	–	–	–	–	–	–	–	–	–
Trans	–	–	–	–	–	–	–	–	–	–
Whlsl	–	–	–	–	–	–	–	–	–	–
Rtail	0.10	–	–	0.03	–	–	***0.13***	–	–	–
Meals	**−0.10**	–	–	–	–	–	–	0.05	–	–
Fin	***0.16***	***0.16***	–	**0.10**	***0.12***	0.11	–	0.05	***0.13***	0.10
Other	–	–	–	–	–	0.05	–	–	–	–
R^2	5.18%	2.88%	2.75%	3.24%	1.29%	7.46%	1.61%	7.91%	1.70%	2.69%
	(4.36)	(2.74)	(3.84)	(3.33)	(1.28)	(6.64)	(1.08)	(6.52)	(1.38)	(6.26)

Table A2: LASSO Predictive Regression Estimation Results, 1960:01–2016:12

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Food	Beer	Smoke	Games	Books	Hshld	Clths	Hlth	Chems	Txtls
Food	–	0.09	–	–	–	–	–	–	–	–
Beer	–	–	–	–	–	–	–	–	–	–
Smoke	–	–	–	–	–	–	–	–	–	–
Games	–	–	–	–	0.02	–	–	–	–	–
Books	–	–	–	**0.15**	0.02	–	0.03	0.05	–	–
Hshld	–	–	–	–	–	–	–	–	–	–
Clths	0.01	0.03	–	0.03	–	0.06	0.08	–	0.02	0.07
Hlth	–	–	–	–	–	–	–	–	–	–
Chems	–	–	–	–	–	–	0.02	–	–	–
Txtls	–	–	0.03	–	–	–	–	–	–	–
Cnstr	–	–	–	–	–	–	–	–	–	–
Steel	–	–	–	–	–	–	−0.02	–	–	–
FabPr	–	–	–	–	–	–	–	–	–	–
ElcEq	–	–	–	–	–	–	−0.11	–	–	–
Autos	–	–	–	–	–	–	–	–	–	0.08
Carry	–	–	**0.12**	–	–	–	0.02	–	–	–
Mines	–	–	−0.02	–	–	–	–	−0.03	–	–
Coal	−0.02	−0.03	−0.02	−0.02	−0.02	−0.02	−0.04	−0.02	–	−0.05
Oil	–	–	−0.07	–	−0.09	–	−0.07	–	–	−0.08
Util	0.03	–	***0.21***	–	0.05	–	0.07	0.06	–	–
Telcm	–	–	−0.05	–	–	–	−0.03	–	–	–
Servs	–	–	**−0.10**	–	0.04	–	0.07	–	–	–
BusEq	–	–	–	–	0.04	–	0.05	–	–	–
Paper	–	–	−0.05	–	–	–	–	–	–	–
Trans	–	–	0.04	–	–	–	–	–	–	–
Whlsl	–	–	–	–	–	–	–	–	–	–
Rtail	0.01	–	–	–	0.05	0.02	0.07	–	–	0.08
Meals	–	–	–	–	–	–	–	–	–	–
Fin	–	–	0.02	0.06	0.06	–	0.04	–	–	0.11
Other	–	–	–	–	–	–	–	–	–	–
R^2	1.18%	2.10%	5.46%	4.50%	5.56%	2.21%	6.36%	2.02%	0.41%	7.31%
	(0.48)	(1.12)	(2.26)	(4.98)	(7.18)	(1.69)	(6.25)	(1.20)	(0.46)	(8.81)

The table reports LASSO slope coefficient estimates and the R^2 statistic for the predictive regression model selected by the LASSO. The regressand is the excess return for the industry portfolio in the column heading. The regressors are selected from the complete set of lagged industry excess returns in the first column. Each predictive regression model includes an intercept term. Bold (italicized bold) indicates significance at the 10% (5%) level according to t-statistics based on "sandwich" standard errors (Fan and Li 2001); – indicates that the lagged industry excess return was not selected by the LASSO. Parentheses report the Campbell and Thompson (2008) measure of the proportional increase in average excess return for a mean-variance investor who utilizes return predictability when allocating between a given industry portfolio and risk-free bills.

Table A2 (continued)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Cnstr	Steel	FabPr	ElcEq	Autos	Carry	Mines	Coal	Oil	Util
Food	–	–	–	–	–	–	–	–	–	0.03
Beer	–	–	–	–	–	–	–	**−0.18**	−0.01	**−0.08**
Smoke	–	–	–	–	–	–	–	−0.05	–	0.004
Games	–	–	–	–	–	–	–	–	–	–
Books	–	–	–	–	–	–	–	0.11	–	–
Hshld	–	–	–	–	−0.11	–	–	–	–	−0.03
Clths	0.02	–	–	–	0.01	–	–	–	–	–
Hlth	–	–	–	–	–	–	–	–	−0.04	−0.05
Chems	–	–	–	–	–	–	–	–	–	–
Txtls	–	–	–	–	–	–	–	–	–	–
Cnstr	–	–	–	–	–	–	–	–	–	**−0.11**
Steel	–	–	–	–	–	–	–	–	–	–
FabPr	–	–	–	–	–	–	–	–	–	0.05
ElcEq	–	–	–	–	–	–	–	–	–	–
Autos	–	–	–	–	–	–	–	−0.004	–	–
Carry	–	–	–	–	–	–	–	–	0.05	0.05
Mines	–	–	–	–	–	–	–	–	–	−0.03
Coal	−0.04	–	–	–	−0.02	–	–	0.05	–	–
Oil	−0.05	–	–	–	−0.04	–	–	−0.11	–	−0.04
Util	0.07	–	–	–	0.05	–	–	–	–	0.06
Telcm	–	–	–	–	–	–	–	–	–	0.08
Servs	–	–	–	–	–	–	–	–	–	–
BusEq	–	–	–	–	0.05	–	–	–	–	0.01
Paper	–	–	–	–	–	–	–	0.11	–	–
Trans	0.03	–	0.02	–	–	0.06	–	–	–	–
Whlsl	–	–	–	–	–	–	–	–	–	−0.07
Rtail	0.01	–	–	–	0.15	–	–	0.05	–	–
Meals	–	–	–	–	–	–	–	–	–	–
Fin	0.12	**0.10**	0.06	0.03	0.06	–	–	–	–	0.08
Other	–	–	–	–	–	–	–	–	–	0.07
R^2	4.37%	1.12%	1.22%	0.38%	4.74%	1.37%	–	2.47%	1.20%	6.74%
	(6.04)	(7.12)	(1.45)	(0.30)	(10.86)	(1.08)	–	(4.89)	(0.83)	(5.00)

Table A2 (continued)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Telcm	Servs	BusEq	Paper	Trans	Whlsl	Rtail	Meals	Fin	Other
Food	–	–	–	–	–	−0.06	–	–	–	–
Beer	−0.05	–	–	–	–	−0.02	–	–	–	–
Smoke	−0.02	−0.03	−0.05	–	–	−0.04	–	−0.02	–	–
Games	–	–	–	–	–	–	–	–	–	–
Books	0.05	0.05	0.07	–	–	**0.12**	–	0.05	–	–
Hshld	−0.04	–	–	–	–	–	–	–	–	–
Clths	–	–	–	0.04	–	–	–	0.09	–	0.05
Hlth	–	–	–	–	–	−0.02	–	–	–	–
Chems	–	–	–	–	–	–	–	–	–	–
Txtls	–	–	–	–	–	–	–	–	–	–
Cnstr	−0.03	–	–	–	–	–	–	–	–	–
Steel	–	−0.02	–	–	–	–	–	−0.06	–	–
FabPr	–	–	–	–	–	–	–	–	–	–
ElcEq	–	–	–	–	–	–	–	–	–	–
Autos	−0.02	–	–	–	–	–	–	–	–	–
Carry	−0.02	–	–	–	–	0.05	–	0.01	–	–
Mines	−0.01	–	–	–	–	–	–	–	–	–
Coal	−0.02	–	–	−0.02	–	−0.03	–	−0.05	–	–
Oil	−0.07	−0.05	–	−0.05	–	***−0.11***	–	**−0.11**	–	–
Util	***0.12***	0.03	0.08	–	–	***0.17***	–	0.06	–	–
Telcm	–	–	–	–	–	−0.05	–	–	–	–
Servs	0.01	–	–	–	–	0.03	–	0.06	–	–
BusEq	0.03	–	–	–	–	0.01	–	0.03	–	–
Paper	–	–	–	–	–	–	–	–	–	–
Trans	–	–	–	–	–	–	–	–	–	–
Whlsl	–	–	–	–	–	–	–	–	–	–
Rtail	0.06	–	–	0.03	–	–	**0.06**	–	–	–
Meals	−0.08	–	–	–	–	–	–	0.05	–	–
Fin	**0.12**	0.08	–	0.04	0.03	0.06	–	0.03	0.05	0.07
Other	–	–	–	–	–	0.04	–	–	–	–
R^2	4.70%	1.88%	1.90%	2.52%	0.62%	6.81%	1.21%	7.29%	1.03%	2.40%
	(3.93)	(1.76)	(2.63)	(2.56)	(0.60)	(6.01)	(0.81)	(5.97)	(0.83)	(5.55)

Table A3: OLS Predictive Regression Estimation Results, 1960:01–2016:12

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Food	Beer	Smoke	Games	Books	Hshld	Clths	Hlth	Chems	Txtls
Food	0.004	**0.20**	−0.003	−0.10	−0.10	0.005	−0.07	−0.04	−0.03	−0.17
Beer	−0.09	**−0.11**	−0.01	0.01	−0.03	0.01	−0.05	0.02	0.04	0.05
Smoke	0.02	−0.001	0.01	−0.03	0.04	−0.01	−0.01	0.001	−0.01	0.02
Games	0.02	−0.07	−0.05	−0.04	0.04	−0.01	−0.09	−0.01	**−0.12**	−0.05
Books	0.04	0.08	0.03	***0.26***	0.10	0.09	0.08	***0.18***	0.11	0.002
Hshld	0.003	0.05	−0.06	−0.01	−0.02	−0.05	−0.15	−0.03	−0.12	−0.16
Clths	0.03	0.10	0.06	0.12	0.01	**0.11**	0.06	0.07	0.09	0.13
Hlth	0.06	−0.02	0.04	−0.03	−0.04	0.01	0.08	−0.08	−0.01	0.03
Chems	−0.07	0.05	0.07	0.03	0.08	0.01	0.17	0.08	0.10	0.15
Txtls	0.01	−0.06	0.05	0.01	−0.01	−0.01	0.01	−0.06	−0.03	−0.06
Cnstr	−0.09	−0.09	0.03	−0.02	−0.12	−0.08	0.09	−0.07	0.02	0.01
Steel	0.003	−0.001	0.01	−0.13	**−0.12**	−0.05	**−0.14**	−0.05	−0.08	−0.08
FabPr	**0.16**	0.04	0.01	**0.25**	0.11	0.06	0.08	0.03	**0.17**	**0.24**
ElcEq	−0.09	−0.08	−0.08	−0.06	−0.12	−0.04	***−0.27***	0.01	−0.11	***−0.24***
Autos	0.01	0.02	0.00	0.01	0.01	0.01	0.01	−0.04	0.04	0.11
Carry	0.03	0.06	***0.16***	−0.03	0.03	0.02	0.06	0.02	0.08	−0.06
Mines	−0.02	−0.01	−0.04	0.03	0.05	−0.01	0.02	−0.04	0.04	0.05
Coal	**−0.04**	**−0.05**	−0.04	**−0.06**	−0.03	−0.03	**−0.06**	−0.04	−0.04	***−0.08***
Oil	−0.08	−0.07	**−0.13**	**−0.15**	***−0.19***	−0.04	***−0.18***	−0.06	***−0.17***	***−0.26***
Util	***0.15***	0.04	***0.28***	0.16	***0.18***	0.07	***0.20***	***0.17***	**0.15**	***0.20***
Telcm	−0.08	0.002	−0.11	−0.01	−0.03	−0.03	**−0.14**	−0.04	−0.03	−0.01
Servs	−0.02	0.03	***−0.20***	0.13	0.08	0.04	0.13	0.06	0.04	0.05
BusEq	−0.01	0.03	0.11	0.01	0.11	−0.03	**0.14**	0.00	0.05	0.06
Paper	−0.04	−0.09	**−0.22**	−0.07	−0.04	−0.06	−0.02	−0.06	−0.12	−0.01
Trans	0.03	0.03	0.10	0.07	0.03	0.05	0.02	0.04	0.04	0.07
Whlsl	−0.03	−0.01	0.01	−0.12	−0.08	−0.11	−0.07	−0.01	***−0.18***	−0.16
Rtail	0.06	−0.09	−0.11	−0.15	0.07	0.04	0.09	−0.02	0.05	0.16
Meals	0.02	0.07	0.02	−0.01	0.02	0.02	0.05	0.002	0.04	0.01
Fin	0.05	0.08	0.12	**0.20**	**0.15**	0.09	0.09	0.01	0.05	**0.*23***
Other	0.02	−0.01	0.03	−0.04	0.001	0.02	0.03	0.02	−0.01	0.03
R^2	5.12%	5.04%	7.46%	7.56%	8.29%	4.99%	9.25%	4.57%	5.63%	11.58%
	(2.18)	(2.78)	(3.15)	(8.64)	(11.02)	(3.93)	(9.38)	(2.79)	(6.78)	(14.64)

The table reports OLS slope coefficient estimates and the R^2 statistic for the predictive regression model. The regressand is the excess return for the industry portfolio in the column heading; the regressors are the lagged industry excess returns in the first column. Each predictive regression model includes an intercept term. Bold (italicized bold) indicates significance at the 10% (5%) level according to conventional OLS t-statistics; 0.00 indicates less than 0.0005 in absolute value. Parentheses report the Campbell and Thompson (2008) measure of the proportional increase in average excess return for a mean-variance investor who utilizes return predictability when allocating between a given industry portfolio and risk-free bills.

Table A3 (continued)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Cnstr	Steel	FabPr	ElcEq	Autos	Carry	Mines	Coal	Oil	Util
Food	−0.002	−0.01	−0.03	0.03	−0.06	−0.02	−0.13	0.09	−0.001	0.10
Beer	−0.05	0.01	−0.01	0.01	0.04	−0.03	−0.03	***−0.25***	−0.06	***−0.10***
Smoke	−0.02	−0.06	−0.05	−0.04	−0.02	0.003	0.07	−0.10	−0.02	0.02
Games	***−0.14***	−0.12	**−0.13**	−0.06	***−0.15***	−0.06	**−0.14**	−0.01	−0.07	−0.04
Books	0.08	0.04	0.12	0.08	0.13	0.10	0.07	0.18	0.04	0.02
Hshld	−0.11	−0.16	−0.13	−0.14	***−0.28***	−0.08	−0.11	−0.14	−0.14	−0.09
Clths	0.05	−0.04	0.01	−0.01	0.03	0.02	−0.04	−0.02	−0.03	−0.01
Hlth	−0.01	−0.06	−0.06	−0.01	−0.08	−0.11	−0.04	−0.04	−0.10	−0.08
Chems	0.15	0.08	0.14	0.14	0.16	0.004	−0.04	0.07	0.05	−0.08
Txtls	−0.02	−0.03	−0.06	−0.06	0.01	−0.01	−0.08	0.02	0.02	−0.02
Cnstr	−0.06	−0.05	−0.03	−0.05	−0.01	−0.07	0.11	−0.16	−0.03	***−0.19***
Steel	**−0.13**	**−0.14**	**−0.12**	−0.06	−0.10	−0.08	−0.12	−0.01	−0.04	0.003
FabPr	0.13	0.08	0.14	***0.23***	0.18	**0.21**	0.21	−0.05	0.07	***0.15***
ElcEq	−0.12	−0.04	−0.07	**−0.15**	−0.14	−0.10	−0.06	0.07	0.10	−0.01
Autos	0.01	0.02	−0.02	0.02	−0.06	0.03	0.10	0.03	0.01	0.01
Carry	0.08	0.02	0.02	0.01	−0.01	0.05	**0.14**	0.10	***0.15***	**0.07**
Mines	0.05	0.06	0.05	0.02	0.04	0.00	−0.01	0.04	0.02	−0.04
Coal	**−0.06**	−0.01	−0.02	−0.04	−0.04	**−0.06**	−0.06	**0.10**	−0.03	0.00
Oil	***−0.20***	**−0.15**	***−0.17***	***−0.23***	***−0.20***	**−0.13**	−0.04	***−0.24***	−0.08	**−0.08**
Util	***0.21***	**0.19**	**0.16**	***0.24***	***0.21***	***0.18***	***0.27***	0.11	0.05	0.09
Telcm	0.002	−0.09	−0.06	−0.11	−0.04	−0.01	***−0.19***	0.002	−0.07	0.07
Servs	0.09	0.01	0.04	0.07	0.07	0.08	0.10	0.20	−0.05	0.004
BusEq	0.08	**0.17**	0.12	0.10	***0.17***	0.08	0.10	−0.14	0.02	0.03
Paper	−0.05	0.04	−0.03	−0.12	−0.02	−0.06	0.09	**0.34**	−0.06	0.06
Trans	0.09	0.06	0.10	−0.01	−0.01	**0.15**	−0.01	−0.16	0.03	0.01
Whlsl	−0.11	−0.08	0.01	−0.06	−0.14	−0.003	**−0.21**	−0.18	−0.09	***−0.15***
Rtail	0.03	−0.01	0.03	0.05	0.17	−0.07	0.07	0.17	0.05	0.03
Meals	0.03	0.03	−0.01	0.08	0.11	0.002	**0.16**	−0.02	−0.02	0.03
Fin	***0.22***	***0.30***	***0.19***	***0.21***	**0.19**	0.12	−0.05	−0.04	0.12	***0.12***
Other	−0.01	0.05	−0.02	−0.04	0.02	−0.01	−0.04	0.01	0.08	***0.11***
R^2	8.45%	4.09%	5.37%	5.64%	8.71%	6.22%	5.63%	4.27%	5.18%	8.41%
	(12.18)	(26.87)	(6.75)	(4.71)	(20.80)	(5.15)	(11.06)	(8.62)	(3.74)	(6.36)

Table A3 (continued)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Telcm	Servs	BusEq	Paper	Trans	Whlsl	Rtail	Meals	Fin	Other
Food	0.06	−0.07	−0.03	0.04	0.08	−0.10	0.01	0.05	−0.001	−0.04
Beer	−0.06	0.05	0.07	−0.01	−0.08	−0.04	−0.01	−0.04	−0.05	−0.004
Smoke	−0.03	−0.09	***−0.15***	0.004	−0.03	−0.04	−0.001	−0.04	−0.02	−0.06
Games	0.01	−0.07	−0.11	**−0.09**	−0.10	−0.08	−0.05	−0.02	−0.07	−0.06
Books	0.10	0.15	***0.24***	0.11	**0.15**	***0.18***	0.06	0.12	**0.13**	0.07
Hshld	−0.07	0.01	−0.04	0.01	−0.09	−0.02	−0.06	−0.04	−0.08	−0.06
Clths	−0.04	0.01	−0.01	0.07	0.02	−0.02	0.01	0.10	0.09	0.11
Hlth	−0.04	−0.01	0.04	−0.03	−0.10	−0.06	0.05	−0.09	−0.03	−0.02
Chems	0.02	0.09	0.13	0.07	0.05	0.11	0.14	0.08	0.01	0.08
Txtls	−0.001	−0.02	−0.04	0.02	−0.01	−0.002	−0.05	−0.05	−0.01	−0.01
Cnstr	−0.09	−0.12	−0.15	−0.03	−0.07	−0.003	0.03	0.03	−0.06	0.01
Steel	−0.01	**−0.12**	−0.09	−0.05	***−0.13***	−0.02	***−0.15***	***−0.16***	−0.09	−0.07
FabPr	0.12	0.17	0.09	0.12	***0.25***	0.05	0.12	0.07	0.15	0.12
ElcEq	−0.04	−0.05	−0.05	***−0.18***	***−0.15***	−0.09	***−0.17***	−0.04	−0.04	−0.09
Autos	−0.05	−0.05	−0.05	−0.03	−0.03	−0.01	0.05	−0.01	−0.02	−0.03
Carry	−0.03	0.01	−0.04	0.08	0.03	0.08	−0.06	0.06	0.02	0.05
Mines	−0.01	0.01	0.01	0.01	0.04	0.01	−0.01	0.02	−0.01	−0.003
Coal	−0.03	0.001	0.004	−0.04	−0.02	−0.04	−0.02	***−0.07***	−0.03	−0.03
Oil	***−0.11***	***−0.17***	**−0.14**	***−0.14***	***−0.19***	***−0.19***	***−0.14***	***−0.19***	***−0.14***	***−0.15***
Util	***0.18***	**0.16**	***0.23***	0.08	***0.20***	***0.25***	0.11	0.14	***0.18***	***0.17***
Telcm	−0.06	−0.07	−0.04	−0.04	−0.08	**−0.12**	−0.07	−0.02	−0.05	−0.12
Servs	0.04	0.02	0.03	0.08	0.10	0.07	0.07	0.07	0.07	0.13
BusEq	0.04	0.06	0.08	0.07	0.05	0.07	0.10	0.10	0.07	0.03
Paper	−0.03	−0.09	−0.05	−0.14	−0.06	−0.08	−0.08	−0.12	0.01	0.01
Trans	−0.01	−0.04	−0.06	0.08	0.07	−0.01	−0.04	0.02	0.01	0.06
Whlsl	−0.02	0.04	0.15	**−0.14**	**−0.16**	−0.04	−0.04	−0.01	**−0.17**	−0.08
Rtail	0.12	0.03	0.06	0.03	0.04	0.01	0.08	−0.04	−0.04	−0.05
Meals	**−0.11**	0.01	−0.07	0.01	0.03	0.05	0.07	0.09	−0.04	−0.05
Fin	***0.18***	***0.21***	**0.18**	***0.16***	***0.18***	0.13	0.09	0.10	***0.17***	***0.20***
Other	−0.01	0.04	0.002	−0.06	0.11	0.07	0.08	0.01	0.12	−0.01
R^2	5.81%	4.26%	6.07%	7.02%	7.47%	8.29%	6.96%	8.88%	6.62%	6.28%
	(4.92)	(4.10)	(8.77)	(7.50)	(7.87)	(7.44)	(4.93)	(7.39)	(5.67)	(15.13)

Table A4: OLS Post-LASSO Predictive Regression Estimation Results Using Lee et al. (2016) Post-Selection Confidence Intervals, 1960:01–2016:12

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Food	Beer	Smoke	Games	Books	Hshld	Clths	Hlth	Chems	Txtls
Food	–	**0.12**	–	–	–	–	–	–	–	–
Beer	–	–	–	–	–	–	–	–	–	–
Smoke	–	–	–	–	–	–	–	–	–	–
Games	–	–	–	–	0.03	–	–	–	–	–
Books	–	–	–	**0.18**	0.04	–	0.06	***0.10***	–	–
Hshld	–	–	–	–	–	–	–	–	–	–
Clths	0.04	0.05	–	0.05	–	**0.10**	0.07	–	**0.08**	0.09
Hlth	–	–	–	–	–	–	–	–	–	–
Chems	–	–	–	–	–	–	0.15	–	–	–
Txtls	–	–	0.06	–	–	–	–	–	–	–
Cnstr	–	–	–	–	–	–	–	–	–	–
Steel	–	–	–	–	–	–	−0.08	–	–	–
FabPr	–	–	–	–	–	–	–	–	–	–
ElcEq	–	–	–	–	–	–	***−0.27***	–	–	–
Autos	–	–	–	–	–	–	–	–	–	0.11
Carry	–	–	***0.17***	–	–	–	0.05	–	–	–
Mines	–	–	−0.02	–	–	–	–	−0.06	–	–
Coal	***−0.06***	***−0.06***	−0.03	***−0.10***	−0.04	***−0.05***	−0.05	**−0.05**	–	***−0.07***
Oil	–	–	−0.10	–	***−0.17***	–	**−0.15**	–	–	***−0.15***
Util	0.09	–	***0.27***	–	0.13	–	0.16	0.11	–	–
Telcm	–	–	−0.11	–	–	–	−0.14	–	–	–
Servs	–	–	***−0.15***	–	0.05	–	0.12	–	–	–
BusEq	–	–	–	–	0.06	–	0.13	–	–	–
Paper	–	–	**−0.19**	–	–	–	–	–	–	–
Trans	–	–	0.10	–	–	–	–	–	–	–
Whlsl	–	–	–	–	–	–	–	–	–	–
Rtail	0.02	–	–	–	0.03	0.05	0.06	–	–	0.07
Meals	–	–	–	–	–	–	–	–	–	–
Fin	–	–	0.11	0.10	0.08	–	0.08	–	–	**0.18**
Other	–	–	–	–	–	–	–	–	–	–
R^2	2.24%	2.52%	6.54%	5.05%	6.30%	2.97%	7.93%	2.68%	0.78%	7.91%
	(0.93)	(1.35)	(2.73)	(5.62)	(8.20)	(2.29)	(7.93)	(1.61)	(0.89)	(9.60)

The table reports OLS slope coefficient estimates and the R^2 statistic for the predictive regression model selected by the LASSO. The regressand is the excess return for the industry portfolio in the column heading. The regressors are selected from the complete set of lagged industry excess returns in the first column. Each predictive regression model includes an intercept term. Bold (italicized bold) indicates significance at the 10% (5%) level according to Lee et al. (2016) post-selection confidence intervals; – indicates that the lagged industry excess return was not selected by the LASSO. Parentheses report the Campbell and Thompson (2008) measure of the proportional increase in average excess return for a mean-variance investor who utilizes return predictability when allocating between a given industry portfolio and risk-free bills.

Table A4 (continued)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Cnstr	Steel	FabPr	ElcEq	Autos	Carry	Mines	Coal	Oil	Util
Food	–	–	–	–	–	–	–	–	–	0.10
Beer	–	–	–	–	–	–	–	***−0.27***	−0.08	**−0.10**
Smoke	–	–	–	–	–	–	–	−0.09	–	0.02
Games	–	–	–	–	–	–	–	–	–	–
Books	–	–	–	–	–	–	–	**0.13**	–	–
Hshld	–	–	–	–	***−0.30***	–	–	–	–	−0.08
Clths	0.04	–	–	–	0.04	–	–	–	–	–
Hlth	–	–	–	–	–	–	–	–	**−0.13**	−0.08
Chems	–	–	–	–	–	–	–	–	–	–
Txtls	–	–	–	–	–	–	–	–	–	–
Cnstr	–	–	–	–	–	–	–	–	–	***−0.18***
Steel	–	–	–	–	–	–	–	–	–	–
FabPr	–	–	–	–	–	–	–	–	–	0.12
ElcEq	–	–	–	–	–	–	–	–	–	–
Autos	–	–	–	–	–	–	–	−0.002	–	–
Carry	–	–	–	–	–	–	–	–	***0.17***	0.08
Mines	–	–	–	–	–	–	–	–	–	−0.04
Coal	***−0.06***	–	–	–	−0.05	–	–	**0.08**	–	–
Oil	***−0.14***	–	–	–	−0.13	–	–	−0.20	–	−0.08
Util	**0.15**	–	–	–	0.17	–	–	–	–	0.09
Telcm	–	–	–	–	–	–	–	–	–	0.07
Servs	–	–	–	–	–	–	–	–	–	–
BusEq	–	–	–	–	**0.12**	–	–	–	–	0.03
Paper	–	–	–	–	–	–	–	***0.19***	–	–
Trans	0.06	–	0.06	–	–	***0.16***	–	–	–	–
Whlsl	–	–	–	–	–	–	–	–	–	***−0.14***
Rtail	0.001	–	–	–	0.18	–	–	0.10	–	–
Meals	–	–	–	–	–	–	–	–	–	–
Fin	0.15	***0.15***	0.09	***0.10***	0.14	–	–	–	–	**0.13**
Other	–	–	–	–	–	–	–	–	–	0.10
R^2	5.13%	1.29%	1.56%	0.80%	6.13%	2.27%	–	2.84%	2.52%	7.88%
	(7.14)	(8.21)	(1.89)	(0.64)	(14.25)	(1.80)	–	(5.65)	(1.77)	(5.93)

Table A4 (continued)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Telcm	Servs	BusEq	Paper	Trans	Whlsl	Rtail	Meals	Fin	Other
Food	–	–	–	–	–	−0.10	–	–	–	–
Beer	−0.06	–	–	–	–	−0.05	–	–	–	–
Smoke	−0.03	−0.09	***−0.14***	–	–	−0.05	–	−0.06	–	–
Games	–	–	–	–	–	–	–	–	–	–
Books	0.09	0.10	***0.12***	–	–	**0.14**	–	0.06	–	–
Hshld	−0.07	–	–	–	–	–	–	–	–	–
Clths	–	–	–	0.06	–	–	–	0.10	–	0.08
Hlth	–	–	–	–	–	−0.06	–	–	–	–
Chems	–	–	–	–	–	–	–	–	–	–
Txtls	–	–	–	–	–	–	–	–	–	–
Cnstr	−0.07	–	–	–	–	–	–	–	–	–
Steel	–	−0.08	–	–	–	–	–	**−0.12**	–	–
FabPr	–	–	–	–	–	–	–	–	–	–
ElcEq	–	–	–	–	–	–	–	–	–	–
Autos	−0.04	–	–	–	–	–	–	–	–	–
Carry	−0.04	–	–	–	–	0.06	–	0.04	–	–
Mines	−0.01	–	–	–	–	–	–	–	–	–
Coal	−0.02	–	–	−0.04	–	−0.04	–	−0.05	–	–
Oil	−0.09	−0.12	–	**−0.11**	–	***−0.15***	–	***−0.15***	–	–
Util	***0.16***	0.12	**0.18**	–	–	***0.25***	–	0.12	–	–
Telcm	–	–	–	–	–	−0.12	–	–	–	–
Servs	0.02	–	–	–	–	0.05	–	0.07	–	–
BusEq	0.05	–	–	–	–	0.03	–	0.06	–	–
Paper	–	–	–	–	–	–	–	–	–	–
Trans	–	–	–	–	–	–	–	–	–	–
Whlsl	–	–	–	–	–	–	–	–	–	–
Rtail	0.10	–	–	0.03	–	–	***0.13***	–	–	–
Meals	−0.10	–	–	–	–	–	–	0.05	–	–
Fin	***0.16***	0.16	–	0.10	***0.12***	0.11	–	0.05	***0.13***	0.10
Other	–	–	–	–	–	0.05	–	–	–	–
R^2	5.18%	2.88%	2.75%	3.24%	1.29%	7.46%	1.61%	7.91%	1.70%	2.69%
	(4.36)	(2.74)	(3.84)	(3.33)	(1.28)	(6.64)	(1.08)	(6.52)	(1.38)	(6.26)

Table A5: OLS Post-LASSO Augmented Predictive Regression Estimation Results, 1960:01–2016:12

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Food	Beer	Smoke	Games	Books	Hshld	Clths	Hlth	Chems	Txtls
Food	–	***0.12***	–	–	–	–	–	–	–	−0.14
Beer	–	–	–	–	–	–	−0.05	–	–	–
Smoke	–	–	–	−0.06	–	–	–	–	–	–
Games	–	–	–	–	0.03	–	–	–	–	–
Books	–	–	–	**0.16**	0.02	0.03	0.07	***0.10***	–	–
Hshld	–	–	–	–	–	–	−0.13	–	–	−0.11
Clths	0.03	0.05	–	0.04	–	0.08	0.04	–	–	0.08
Hlth	–	–	–	–	–	–	–	–	–	–
Chems	–	–	–	–	–	–	**0.17**	–	–	0.13
Txtls	–	–	0.06	–	–	–	–	–	–	–
Cnstr	–	–	–	–	–	–	–	–	–	–
Steel	–	–	–	–	–	−0.06	−0.10	–	–	–
FabPr	–	–	–	–	–	–	–	–	–	**0.21**
ElcEq	–	–	–	–	–	–	***−0.23***	–	–	***−0.22***
Autos	–	–	–	–	–	–	–	–	–	0.05
Carry	−0.04	–	***0.17***	–	–	–	0.07	–	–	–
Mines	–	–	−0.02	–	–	−0.03	–	**−0.06**	–	–
Coal	**−0.04**	***−0.06***	−0.03	−0.04	−0.03	−0.03	−0.05	***−0.05***	–	***−0.07***
Oil	**−0.08**	–	−0.10	−0.08	***−0.16***	–	***−0.15***	–	–	***−0.23***
Util	***0.12***	–	***0.27***	–	**0.12**	0.03	***0.19***	***0.11***	–	***0.20***
Telcm	–	–	−0.11	–	–	–	***−0.15***	–	–	–
Servs	–	–	***−0.15***	0.03	0.04	–	0.11	–	–	–
BusEq	–	–	–	–	0.07	–	***0.14***	–	–	0.06
Paper	–	–	***−0.20***	–	–	–	–	–	–	–
Trans	–	–	0.10	–	–	–	–	–	–	–
Whlsl	–	–	–	–	–	–	–	–	–	**−0.17**
Rtail	0.02	–	–	–	0.04	0.02	0.11	–	–	**0.20**
Meals	0.01	–	–	–	–	–	–	–	–	–
Fin	–	–	0.12	**0.16**	0.09	0.05	0.13	–	–	***0.26***
Other	–	–	–	–	–	–	–	–	–	–
DivYld	**0.25**	0.17	–	***0.88***	***0.96***	***0.50***	***0.77***	–	–	***1.09***
BillYld	–	–	–	***−0.32***	***−0.25***	***−0.22***	***−0.30***	–	–	***−0.38***
Term	***0.28***	0.17	–	–	0.08	0.13	–	–	–	–
Credit	–	0.21	0.39	0.56	–	–	0.72	–	–	0.34
R^2	3.81%	2.92%	6.61%	6.74%	8.21%	5.31%	10.11%	2.68%	–	12.76%
	(1.61)	(1.57)	(2.77)	(7.64)	(10.90)	(4.19)	(10.35)	(1.61)	–	(16.34)

The table reports OLS slope coefficient estimates and the R^2 statistic for the augmented predictive regression model selected by the LASSO. The regressand is the excess return for the industry portfolio in the column heading. The regressors are selected from the complete set of lagged industry excess returns and lagged economic variables in the first column. `DivYld` is the S&P500 dividend yield, `BillYld` is the three-month Teasury bill yield, and `Term` (`Credit`) is the difference in annualized yields on a ten-year Treasury bond and three-month Treasury bill (BAA- and AAA-rated corporate bonds). Each predictive regression model includes an intercept term. Bold (italicized bold) indicates significance at the 10% (5%) level according to conventional OLS post-LASSO t-statistics; – indicates that the variable was not selected by the LASSO. Parentheses report the Campbell and Thompson (2008) measure of the proportional increase in average excess return for a mean-variance investor who utilizes return predictability when allocating between a given industry portfolio and risk-free bills.

Table A5 (continued)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Cnstr	Steel	FabPr	ElcEq	Autos	Carry	Mines	Coal	Oil	Util
Food	–	–	–	–	–	–	–	–	–	0.10
Beer	–	–	–	–	–	−0.05	–	***−0.27***	−0.08	**−0.09**
Smoke	–	–	−0.05	–	–	–	–	−0.10	–	0.02
Games	–	–	***−0.12***	–	–	–	–	–	–	–
Books	–	–	0.08	–	–	0.03	–	0.14	–	–
Hshld	–	–	**−0.14**	–	***−0.30***	−0.12	–	–	–	−0.08
Clths	0.02	–	–	–	0.01	–	–	–	–	–
Hlth	–	–	–	–	–	−0.09	–	–	***−0.13***	−0.07
Chems	–	–	–	–	–	–	–	–	–	−0.06
Txtls	–	–	–	–	–	–	–	–	–	–
Cnstr	–	–	–	–	–	–	–	–	–	***−0.18***
Steel	–	–	–	–	–	–	–	–	–	–
FabPr	–	–	–	–	–	0.10	–	–	–	***0.15***
ElcEq	–	–	–	–	–	–	–	–	–	–
Autos	–	–	–	–	–	–	–	0.01	–	–
Carry	–	–	–	–	–	0.03	–	–	***0.17***	**0.08**
Mines	–	–	–	–	–	−0.03	–	–	–	−0.04
Coal	**−0.05**	–	–	–	−0.03	**−0.05**	–	0.07	–	–
Oil	***−0.13***	–	***−0.11***	***−0.18***	**−0.13**	**−0.11**	–	***−0.20***	–	**−0.07**
Util	**0.14**	–	0.10	**0.14**	**0.16**	***0.17***	–	–	–	0.08
Telcm	–	–	–	–	–	–	–	–	–	0.07
Servs	–	–	–	0.01	–	0.03	–	–	–	–
BusEq	–	–	**0.09**	0.05	***0.11***	0.05	–	–	–	0.03
Paper	–	–	–	–	–	–	–	0.20	–	–
Trans	0.05	–	0.09	–	–	0.09	–	–	–	–
Whlsl	–	–	–	–	–	–	–	–	–	***−0.15***
Rtail	0.01	–	–	–	***0.19***	–	–	0.09	–	–
Meals	–	–	–	–	–	–	–	–	–	–
Fin	***0.16***	***0.15***	***0.17***	0.09	**0.16**	0.09	–	–	–	***0.14***
Other	–	–	–	–	–	–	–	–	–	**0.10**
DivYld	***0.91***	–	***0.67***	0.20	***0.89***	***0.90***	–	–	–	0.27
BillYld	***−0.34***	–	***−0.36***	–	***−0.40***	***−0.32***	–	−0.15	–	−0.09
Term	–	–	–	**0.36**	0.004	0.01	–	**−0.70**	–	0.15
Credit	–	–	–	–	0.64	–	–	–	–	–
R^2	6.93%	1.29%	5.62%	3.10%	8.16%	6.90%	–	3.40%	2.52%	8.75%
	(9.84)	(8.21)	(7.09)	(2.52)	(19.37)	(5.76)	–	(6.80)	(1.77)	(6.47)

Table A5 (continued)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Telcm	Servs	BusEq	Paper	Trans	Whlsl	Rtail	Meals	Fin	Other
Food	–	–	–	–	–	−0.13	–	–	–	–
Beer	−0.06	–	–	–	***−0.12***	−0.05	–	–	–	–
Smoke	−0.03	**−0.09**	***−0.15***	–	–	−0.04	–	–	–	***−0.08***
Games	–	–	–	–	–	–	–	–	–	–
Books	0.08	0.08	***0.19***	–	0.05	**0.13**	–	0.06	–	–
Hshld	−0.07	–	–	–	–	–	–	–	–	–
Clths	–	–	–	0.06	0.03	–	–	0.09	–	0.05
Hlth	–	–	0.10	–	–	–	–	–	–	–
Chems	–	–	–	–	–	–	–	–	–	–
Txtls	–	–	–	–	–	–	–	–	–	–
Cnstr	−0.08	–	–	–	–	–	–	–	–	–
Steel	–	−0.07	−0.03	–	–	–	–	***−0.10***	–	–
FabPr	–	–	–	–	–	–	–	–	–	–
ElcEq	–	–	–	–	–	–	–	–	–	–
Autos	−0.05	–	−0.09	–	–	–	–	–	–	–
Carry	−0.04	–	–	–	–	0.06	–	–	–	–
Mines	−0.01	–	–	–	–	–	–	–	–	–
Coal	−0.01	–	–	−0.04	−0.02	−0.03	–	−0.05	–	−0.02
Oil	**−0.08**	**−0.11**	−0.08	***−0.11***	***−0.13***	***−0.15***	–	***−0.15***	–	**−0.11**
Util	***0.15***	0.11	***0.22***	–	***0.16***	***0.24***	–	0.09	–	**0.12**
Telcm	–	–	–	–	–	**−0.12**	–	–	–	**−0.12**
Servs	0.01	–	–	–	–	0.04	–	0.06	–	0.07
BusEq	0.05	–	–	–	–	0.03	–	0.06	–	–
Paper	–	–	–	–	–	–	–	–	–	–
Trans	–	–	–	–	–	–	–	–	–	0.03
Whlsl	–	–	–	–	–	–	–	–	–	–
Rtail	0.11	–	–	0.03	–	–	***0.13***	–	–	–
Meals	***−0.11***	–	–	–	–	–	–	0.04	–	–
Fin	***0.17***	***0.17***	–	**0.10**	**0.14**	0.12	–	0.06	***0.13***	***0.17***
Other	–	–	–	–	–	0.04	–	–	–	–
DivYld	***0.54***	***0.98***	***0.85***	–	***0.86***	***0.94***	–	***0.83***	–	***1.08***
BillYld	**−0.18**	***−0.36***	***−0.39***	–	***−0.33***	***−0.31***	–	***−0.31***	–	***−0.34***
Term	0.06	–	0.01	**0.33**	0.01	–	–	0.06	–	–
Credit	–	0.33	–	–	–	0.35	–	–	–	–
R^2	6.25%	4.76%	5.68%	3.83%	5.52%	9.54%	1.61%	9.07%	1.70%	7.20%
	(5.31)	(4.61)	(8.17)	(3.96)	(5.70)	(8.68)	(1.08)	(7.57)	(1.38)	(17.52)

Table A6: OLS Post-ENet Predictive Regression Estimation Results, 1960:01–2016:12

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Food	Beer	Smoke	Games	Books	Hshld	Clths	Hlth	Chems	Txtls
Food	–	***0.12***	–	–	–	–	–	–	–	–
Beer	–	–	–	–	–	–	–	–	–	–
Smoke	–	–	–	−0.07	–	–	–	–	–	–
Games	–	–	–	–	0.04	–	–	–	–	–
Books	–	–	–	***0.18***	0.07	0.04	–	***0.10***	–	–
Hshld	–	–	–	–	–	–	–	–	–	–
Clths	–	0.05	–	0.05	0.02	**0.10**	0.11	–	***0.08***	0.09
Hlth	–	–	–	–	–	–	–	–	–	–
Chems	–	–	–	–	–	–	–	–	–	–
Txtls	–	–	0.06	–	–	–	–	–	–	–
Cnstr	–	–	–	–	–	–	–	–	–	–
Steel	–	–	–	–	−0.05	−0.07	–	–	–	–
FabPr	–	–	–	–	–	–	–	–	–	–
ElcEq	–	–	–	–	**−0.12**	–	–	–	–	–
Autos	–	–	–	–	–	–	–	–	–	**0.11**
Carry	–	–	***0.17***	–	–	–	–	–	–	–
Mines	–	–	−0.02	–	–	−0.02	–	**−0.06**	–	–
Coal	–	***−0.06***	−0.03	−0.10	−0.03	**−0.04**	***−0.08***	***−0.05***	–	***−0.07***
Oil	–	–	**−0.10**	−0.08	***−0.14***	–	–	–	–	***−0.15***
Util	–	–	***0.27***	–	**0.13**	0.04	–	***0.11***	–	–
Telcm	–	–	−0.11	–	–	–	–	–	–	–
Servs	–	–	***−0.15***	0.04	0.06	–	0.08	–	–	–
BusEq	–	–	–	–	**0.11**	–	–	–	–	–
Paper	–	–	***−0.19***	–	–	–	–	–	–	–
Trans	–	–	0.10	–	–	–	–	–	–	–
Whlsl	–	–	–	–	–	–	–	–	–	–
Rtail	–	–	–	–	0.03	0.02	0.08	–	–	0.07
Meals	–	–	–	–	–	–	–	–	–	–
Fin	–	–	0.11	0.15	0.11	0.05	–	–	–	***0.18***
Other	–	–	–	–	–	–	–	–	–	–
R^2	–	2.52%	6.54%	5.61%	7.02%	3.85%	4.38%	2.68%	0.78%	7.91%
	–	(1.35)	(2.73)	(6.28)	(9.20)	(3.00)	(4.21)	(1.61)	(0.89)	(9.60)

The table reports OLS slope coefficient estimates and the R^2 statistic for the predictive regression model selected by the elastic net (ENet). The regressand is the excess return for the industry portfolio in the column heading. The regressors are selected from the complete set of lagged industry excess returns in the first column. Each predictive regression model includes an intercept term. Bold (italicized bold) indicates significance at the 10% (5%) level according to conventional OLS post-ENet t-statistics; – indicates that the lagged industry excess return was not selected by the elastic net. Parentheses report the Campbell and Thompson (2008) measure of the proportional increase in average excess return for a mean-variance investor who utilizes return predictability when allocating between a given industry portfolio and risk-free bills.

Table A6 (continued)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Cnstr	Steel	FabPr	ElcEq	Autos	Carry	Mines	Coal	Oil	Util
Food	–	–	–	–	–	–	–	–	–	0.10
Beer	–	–	–	–	–	–	–	***−0.27***	−0.08	***−0.10***
Smoke	–	–	–	–	−0.03	–	–	−0.09	–	0.02
Games	–	–	–	–	***−0.15***	–	–	–	–	–
Books	–	–	–	–	0.11	–	–	0.13	–	–
Hshld	–	–	–	–	***−0.28***	–	–	–	–	−0.08
Clths	0.04	–	–	–	0.02	–	–	–	–	–
Hlth	–	–	–	–	−0.07	–	–	–	***−0.13***	−0.08
Chems	–	–	–	–	0.15	–	–	–	–	–
Txtls	–	–	–	–	–	–	–	–	–	–
Cnstr	–	–	–	–	–	–	–	–	–	***−0.18***
Steel	–	–	–	–	−0.10	–	–	–	–	–
FabPr	–	–	–	–	0.17	–	–	–	–	**0.12**
ElcEq	–	–	–	–	**−0.15**	–	–	–	–	–
Autos	–	–	–	–	–	–	–	−0.002	–	–
Carry	–	–	–	–	–	–	–	–	***0.17***	**0.08**
Mines	–	–	–	–	–	–	–	–	–	−0.04
Coal	***−0.06***	–	–	–	−0.04	–	–	**0.08**	–	–
Oil	***−0.14***	–	–	–	***−0.18***	–	–	***−0.20***	–	***−0.08***
Util	***0.15***	–	–	–	***0.19***	–	–	–	–	**0.09**
Telcm	–	–	–	–	–	–	–	–	–	0.07
Servs	–	–	–	–	0.08	–	–	–	–	–
BusEq	–	–	–	–	***0.16***	–	–	–	–	0.03
Paper	–	–	–	–	–	–	–	0.19	–	–
Trans	0.06	–	0.06	–	–	***0.16***	–	–	–	–
Whlsl	–	–	–	–	−0.12	–	–	–	–	***−0.14***
Rtail	0.001	–	–	–	0.14	–	–	0.10	–	–
Meals	–	–	–	–	0.12	–	–	–	–	–
Fin	**0.15**	***0.15***	0.09	***0.10***	**0.16**	–	–	–	–	***0.13***
Other	–	–	–	–	–	–	–	–	–	**0.10**
R^2	5.13%	1.29%	1.56%	0.80%	8.40%	2.27%	–	2.84%	2.52%	7.88%
	(7.14)	(8.21)	(1.89)	(0.64)	(20.00)	(1.80)	–	(5.65)	(1.77)	(5.93)

Table A6 (continued)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Regressand									
Regressor	Telcm	Servs	BusEq	Paper	Trans	Whlsl	Rtail	Meals	Fin	Other
Food	–	–	–	–	–	−0.10	–	–	–	–
Beer	–	–	–	–	–	−0.05	–	−0.05	–	–
Smoke	–	–	***−0.16***	–	–	−0.05	–	−0.04	–	–
Games	–	–	–	–	–	–	–	–	–	–
Books	–	0.05	0.09	–	0.04	**0.14**	–	0.09	0.04	–
Hshld	–	–	–	–	–	–	–	–	–	–
Clths	–	–	–	0.06	0.03	–	–	0.09	–	0.08
Hlth	–	–	0.07	–	–	−0.06	–	−0.09	–	–
Chems	–	–	–	–	–	–	–	–	–	–
Txtls	–	–	–	–	–	–	–	–	–	–
Cnstr	–	–	–	–	–	–	–	–	–	–
Steel	–	–	–	–	–	–	–	***−0.12***	–	–
FabPr	–	–	–	–	–	–	–	–	–	–
ElcEq	–	–	–	–	–	–	–	–	–	–
Autos	–	–	–	–	–	–	–	–	–	–
Carry	–	–	–	–	–	0.06	–	0.06	–	–
Mines	–	–	–	–	–	–	–	–	–	–
Coal	–	–	–	**−0.04**	−0.03	−0.04	–	**−0.05**	–	–
Oil	–	–	–	***−0.11***	***−0.13***	***−0.15***	–	***−0.15***	–	–
Util	–	–	***0.17***	–	**0.14**	***0.25***	–	**0.13**	–	–
Telcm	–	–	–	–	–	**−0.12**	–	–	–	–
Servs	–	–	–	–	–	0.05	–	0.07	–	–
BusEq	–	–	–	–	–	0.03	–	0.09	–	–
Paper	–	–	–	–	–	–	–	−0.09	–	–
Trans	–	–	–	–	–	–	–	–	–	–
Whlsl	–	–	–	–	–	–	–	–	–	–
Rtail	–	–	–	0.03	–	–	***0.13***	–	–	–
Meals	–	–	–	–	–	–	–	0.08	–	–
Fin	–	0.07	–	**0.10**	0.09	0.11	–	0.10	0.10	**0.10**
Other	–	–	–	–	–	0.05	–	–	–	–
R^2	–	0.90%	2.89%	3.24%	2.94%	7.46%	1.61%	8.46%	1.78%	2.69%
	–	(0.84)	(4.04)	(3.33)	(2.95)	(6.64)	(1.08)	(7.01)	(1.45)	(6.26)

Table A7: Annualized Average Returns During Good and Bad Macroeconomic States Using White (1980) Heteroskedasticity-Robust Standard Errors, 1970:01–2016:12

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	NBER business-cycle phases			CFNAI observations		
Portfolio	Expansion	Recession	Difference	Upper 80%	Lower 20%	Difference
Prevailing mean	−2.54%	−0.57%	1.97%	−3.49%	2.72%	6.22%
	[−1.55]	[−0.10]	[0.32]	[−2.15]**	[0.55]	[1.21]
OLS	4.20%	12.54%	8.34%	5.56%	5.34%	−0.22%
	[2.44]**	[2.45]**	[1.54]	[3.22]***	[1.14]	[−0.04]
OLS post-LASSO	4.62%	21.75%	17.13%	5.07%	16.14%	11.08%
	[2.99]***	[4.05]***	[3.06]***	[3.23]***	[3.56]***	[2.32]**

The table reports annualized average returns for long-short industry-rotation portfolios during good and bad macroeconomic states. At the end of each month, we sort 30 industry portfolios according to out-of-sample forecasts of their excess returns for the subsequent month. The out-of-sample industry excess return forecasts are based on predictive regression models estimated via OLS or OLS post-LASSO, as well as prevailing mean forecasts, as indicated in the first column. We then form equal-weighted quintile portfolios based on the sorts, and each long-short industry-rotation portfolio is a zero-investment portfolio that goes long (short) the top (bottom) quintile portfolio. Good (bad) states are months when the economy is in an expansion (recession) according to NBER-dated cyclical turning points or months in the upper 80% (lower 20%) of Chicago Fed national activity index (CFNAI) observations. Difference is the difference in average returns during bad versus good states. Brackets report t-statistics based on White (1980) heteroskedasticity-robust standard errors; *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table A8: Multifactor Model Estimation Results Using White (1980) Heteroskedasticity-Robust Standard Errors, 1970:01–2016:12

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	PM forecasts		OLS forecasts		OLS post-LASSO forecasts	
Factor	Carhart four-factor model	HXZ q-factor model	Carhart four-factor model	HXZ q-factor model	Carhart four-factor model	HXZ q-factor model
Ann. α	−1.84%	−2.91%	6.64%	5.57%	8.78%	8.04%
	[−1.22]	[−1.72]*	[3.47]***	[3.85]***	[4.43]***	[4.23]***
Market	−0.03	−0.02	−0.05	−0.02	−0.13	−0.10
	[−1.03]	[−0.45]	[−1.13]	[−0.36]	[−2.57]***	[−1.88]*
Size	−0.12	−0.04	−0.12	−0.13	−0.07	−0.07
	[−2.67]***	[−0.50]	[−1.85]*	[−1.79]*	[−1.00]	[−0.97]
Value	−0.38		−0.10		−0.12	
	[−7.37]***		[−1.39]		[−2.24]**	
Momentum	0.24		−0.01		0.004	
	[7.11]***		[−0.14]		[0.04]	
Investment		−0.37		0.13		0.002
		[−4.10]***		[1.16]		[0.02]
Profitability		0.45		−0.04		0.02
		[5.97]***		[−0.30]		[0.20]
R^2	27.80%	18.19%	2.22%	2.30%	4.06%	3.28%

The table reports Carhart (1997) four-factor and Hou et al. (2015, HXZ) q-factor model estimation results for long-short industry-rotation portfolios. At the end of each month, we sort 30 industry portfolios according to out-of-sample forecasts of their excess returns for the subsequent month. The out-of-sample industry excess return forecasts are based on predictive regression models estimated via OLS or OLS post-LASSO, as well as prevailing mean (PM) forecasts, as indicated at the top of the table. We then form equal-weighted quintile portfolios based on the sorts, and each long-short industry-rotation portfolio is a zero-investment portfolio that goes long (short) the top (bottom) quintile portfolio. The regressand for the multiple regression model is the excess return for the portfolio indicated at the top of the table. Brackets report t-statistics based on White (1980) heteroskedasticity-robust standard errors; *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.