Supplemental Appendix: An Assessment of the Marginal Predictive Content of Economic Uncertainty Indexes and Business Conditions Predictors *

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Abstract

This appendix contains additional tables and figures that are discussed in the main paper including all the empirical results with the Covid-19 period included in the ex-ante forecasting sample.

Keywords: Latent factor, business conditions index, macroeconomic uncertainty measure, principal components analysis, least absolute shrinkage operator, high dimensional data, big data.

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I. The following tables correspond to those included in the main paper, except that the numerator of the reported statistics is no longer the AR(SIC) model, as stated in the notes to the tables.

Table 1: Comparison of the Predictive Accuracy of AR(SIC) + BC Models with AR(SIC) + BC + EUI Models*

		Methods used to Construct Economic Uncertainty Indexes and Business Conditions Predictors									
	Target Variable	PCA(I)	LASSO(I)	LPCA(I)	AP(I)	GP1(I)	GP2(I)	GF1(I)	GF2(I)	EPCA(I)	JLN(I)
	RPI	1.04	1.005	1	1.016	**0.989**	1.039 *	0.993	1.016	1.043	1.045
	INDPRO	1.012	1.033	1.019	0.995 *	0.97	1.01	1.016	1.02	1.015	**0.869**
	UNRATE	1.02	1.057	1.03	1.038	1.012	1.022	1.029	1.041	1.013	**0.996**
	CLAIMS	1.027	1.029	1.026	1.02	1.015	1.012	1.035	1.024	1.031	**0.958**
h=1	HOUST	1.026	1.014 **	1.01	1.006	0.997	0.994	1.019	**0.983**	1.032	1.006
	PERMIT	0.962 *	0.987	1.004	0.98	**0.925**	1	0.955 *	0.935	0.962 ***	0.936
	RCON	1.007	0.883	0.898	0.976 *	0.881	1.037	**0.855**	0.912	1.007	1
	MTS	0.99	0.934 **	0.949 *	0.972	**0.91**	1.031	0.973 **	1.001	0.99	0.992
	M2	1.025 **	1.015	**1.012**	1.015	1.021	1.032	1.027	1.016	1.03 ***	1.053
	R10	1.092 **	**1.008**	1.024	1.012	1.035	1.061 **	1.02	1.029	1.084 **	1.122
	PPI	1.024	1.025	1.033	1.02	1.04	**1.014**	1.044	1.028	1.025	**1.014**
	CPI	1.022	1.021	1.033	**1.005**	1.042	1.012	1.045	1.025	1.032 **	1.017
	PCECI	1.018	1.037	1.046	1.024	1.024	1.01 *	1.011 *	**1.006**	1.019	1.012
	S&P 500	1	1.004	1.006	1.03	1.006	0.997	1.006	**0.996**	1	1.023
	RPI	1.019	1.005	0.984	1.02	1.015	1.017	**0.982**	1.012	1.019	1.01
	INDPRO	1.023	1.027 *	0.978	**0.963**	1.014	1.032	1.022	1.031	0.996	1.105
	UNRATE	0.996	0.996	0.97	0.992	1.031 ***	0.975	0.993	0.985	0.991	**0.967**
	CLAIMS	0.998	1.006	1.042	1.007	1.008	**0.984**	1.042	1.034	0.994	0.999
h=3	HOUST	0.968	1.047 **	0.956	0.896	0.982	0.938	0.963	**0.886**	0.972	1.015
	PERMIT	0.955	1.002	0.896	0.924	1.011	0.982	0.866	0.863	0.912	**0.857 ** **
	RCON	1.018	1.027	0.978	1.02	**0.938**	1.014	0.961	0.951	1.026	1.055
	MTS	1.025	1.012	1.02	**0.994**	1.01	1.019	1.012	1.014	1.003	1.043
	M2	1.03 *	**1.005**	1.041	1.022	1.017 ***	1.006	1.053 *	1.039	1.015	1.052
	R10	0.976	0.978	1.077	1.027	1.046	1.019	1.042	1.082	**0.962**	1.175
	PPI	1.013 **	1.001	1.048	1.031 *	1.024 ***	1.01	1.037	1.049 *	1.018 **	**0.975**
	CPI	1.015 **	**1.003**	1.064	1.02	1.019 *	1.012 **	1.058	1.063	1.019 ***	1.052
	PCECI	1.014 **	1.002	1.066	1.045	1.024 **	1.013 *	1.041	1.056	1.016 **	**0.959**
	S&P 500	1.009	1.028	1.052	1.109	1.017	**0.988**	1.081	1.079	1.008	1.078
	RPI	1.006	1.01 **	1.108	**0.958**	1.188	1.006	1.054	1.005	1.158	1.028
	INDPRO	1	1.026	1.025	**0.941**	1.048	1.005	1.064	1.057	1.05	0.958
	UNRATE	0.98	1.011	1.109	**0.914 ***	1.114	1.009	1.118	1.045	1.093 ***	1.046
	CLAIMS	1	1.004	1.107 *	1.008	1.034	1.016 *	1.033	1.046 ***	1.126 **	**0.981**
h=12	HOUST	0.938	1.003	1.068	**0.88**	1.206	0.993	1.051	0.985	1.093	1.002
	PERMIT	0.927	0.979	1.202	0.926	1.229	**0.869**	1.09 **	0.968	1.009	0.963 *
	RCON	0.983	1.035	1.077 **	**0.981**	1.085 **	0.996	1.071	1.036	1.036 **	1.041 *
	MTS	1.002	1.016	1.088	**0.986**	1.071	1.018 ***	1.053 **	1.043 **	1.07 *	1.019
	M2	1.01	**1.001**	1.057 *	1.034 **	1.053 ***	1.004 **	1.057	1.057	1.055	1.019 *
	R10	**0.992**	1.008	1.057	1.02	1.093	1.003	1.082	1.046	1.051	1.004
	PPI	1.008	**1.002**	1.065 **	1.02 *	1.049 ***	1.008 **	1.075 *	1.036 *	1.066 **	1.038
	CPI	1.009	**1.001**	1.031 ***	1.017 **	1.051 *	1.016 ***	1.039 **	1.022 ***	1.045 ***	1.025 **
	PCECI	1.011 **	**1.001**	1.035 ***	1.016	1.042	1.01	1.039 *	1.033 **	1.043 **	1.018
	S&P 500	1.021	1.017	1.058 ***	1.029	1.104 *	**1.002**	1.096 **	1.074 **	1.094 *	1.055

* Notes: See notes to Table 2 in the main paper. Tabulated entries are relative mean squared forecast error (MSFEs) for our 14 target variables, and for forecast horizons of h=1,3 and 12 months ahead. The benchmark model is AR(SIC) models that include business conditions predictors (BCs). The benchmark model is in the denominator of the reported statistics, so that entries less than unity indicate that our more complex models which include both business conditions predictors (BCs) and economic uncertainty indexes (EUIs) have lower MSFEs. The forecast period is 2004:6-2019:12, and all models are estimated anew prior to the construction of each forecast. Entries in bold denote method with lowest relative MSFE for a given target variable and forecast horizon. Starred entries indicate rejection of the null hypothesis of equal conditional predictive ability using the Giacomini and White (2006) conditional predictive accuracy test. Significance levels for the test include "$***$" for $p < 0.01$, "$**$" for $p < 0.05$, "$*$" for $p < 0.1$.

Table 2: Comparison of the Predictive Accuracy of AR(SIC) + EUI Models with AR(SIC) + BC + EUI Models*

		Methods used to Construct Economic Uncertainty Indexes and Business Conditions Predictors									
	Target Variable	PCA(I)	LASSO(I)	LPCA(I)	AP(I)	GP1(I)	GP2(I)	GF1(I)	GF2(I)	EPCA(I)	JLN(I)
	RPI	1.049	1.078	1.06	1.069	**1.011 ***	1.073	1.075	1.065	1.048	1.102
	INDPRO	1.076	1.193	1.018	1.062	1.005	1.131	**0.959**	0.975	1.082	1.434
	UNRATE	0.89	0.894	**0.828**	0.852	0.898 *	0.868	0.908	0.894 *	0.906	0.974
	CLAIMS	**0.98**	1.014	1.006	1.047	1.011	0.985	1.016 **	0.982 *	0.984	1.056
h=1	HOUST	0.808 *	0.757 **	0.915	0.833	**0.7 *****	0.851	0.764 **	0.897	0.811	0.907
	PERMIT	**0.892**	1.22	1.032	0.986	1.067	0.991	1.045	0.976	1.012	0.948
	RCON	1.165 *	1.021 *	**1.017**	1.087	1.089	1.052	1.114 **	1.112 *	1.152 *	1.055
	MTS	0.991	1.018 *	1.018 **	1.062	**0.966**	1.004	1.025	0.982	1.021	1.019
	M2	1.132	1.038	1.034	1.051	**0.993**	1.18	1.036	1.058	1.264 **	1.044
	R10	1.166	1.38 ***	**0.899**	1.017	0.999 *	1.075	1.18 **	0.934	1.172	1.287 *
	PPI	1.058	1.009	1.009	**0.908 ***	0.967	0.947	0.983	0.981	1.072	1.116
	CPI	1.158	0.935	0.935	1	1.008	1.044	0.95	**0.908**	1.071	1.011
	PCECI	1.118 *	0.904	0.904	0.961	1.376	1.048	**0.893**	0.903	1.118 *	0.965
	S&P 500	1.162	1.059	1.045	1.136	**1.018**	1.07	1.196 **	1.112	1.16	1.038
	RPI	1.006	1.068	1.028 *	1.034	1	0.99	1.03 *	**0.968**	1.011	1.068
	INDPRO	0.976	1.207	1.062 **	1.029	1.019	1.028	1.015	1.025	**0.969**	1.099
	UNRATE	0.936	0.962	0.95	0.932	**0.847**	0.926	0.984 *	0.935	0.964	1.062
	CLAIMS	1.075	1.047	1.08	1.071	0.996	1.048	1.058	**0.992**	1.074	1.103 *
h=3	HOUST	0.827 *	0.779 **	0.903 **	0.839	**0.769 ****	0.922	0.918	0.919	0.832 **	0.888
	PERMIT	0.917	**0.836**	0.84	0.88	0.992	0.954	1.035	0.979	0.864	0.97
	RCON	1.165	1.012	**1.004**	1.096	1.11 **	1.1	1.069	1.057	1.212 **	1.147
	MTS	1.187 **	**1.004**	1.007	1.061	1.023	1.149	1.102	1.106	1.196 **	1.108
	M2	1.154 ***	1.017	**0.997**	1.021	1.009	1.097	1.037	1.046	1.164 *	1.096
	R10	1.303	1.541 ***	1.016	1.018	1.028 *	1.177 **	1.068	**1.014**	1.301 *	1.784
	PPI	1.158 *	1.026 *	1.025 *	1.026	**1.012**	1.1 *	1.053 **	1.056 **	1.177 **	1.139
	CPI	1.214	1.076 *	1.059	1.163 *	**1.029**	1.119 **	1.062 *	1.053	1.235 **	1.114
	PCECI	1.208 **	1.044	1.036	1.126	1.236	1.121	1.045	1.053	1.19 **	**0.967**
	S&P 500	1.144	1.074	1.04	1.084	**0.992**	1.1	1.069	1.119 ***	1.118	1.082
	RPI	1.039	1.032	1.04	1.069	**1 ***	1.094	1.025	1.065	1.073	1.095
	INDPRO	1.157	1.057	1.033	**1.008**	1.022 ***	1.094	1.01	1.039 *	1.124	1.1
	UNRATE	0.991	**0.908**	0.964	1.087	1.012	1.025	1.239 *	1.086	1.027	1.201
	CLAIMS	1.058	1.007	1.019	1.008	1	1.048	0.995	1.015	1.107 ***	1.103
h=12	HOUST	0.627 ***	**0.387 *****	0.758 *	0.671 *	0.742	0.758 **	0.783	**0.955**	0.693 *	0.8
	PERMIT	0.628 ***	0.551 **	0.682	0.74 *	0.706	0.843	1.018	0.994	**0.507 *****	1.044
	RCON	1.158	0.972	**0.961**	0.996	1.044	1.086	0.994	1.025	1.152	1.051
	MTS	1.066	1.003	1.003	**0.978**	0.995	1.055	1.055	1.085	1.021	1.049
	M2	1.336 *	1.146 *	1.139 *	1.273 **	**1.011**	1.407 *	1.03	1.247 *	1.436 *	1.081 ***
	R10	1.165 **	1.622 ***	**1.012**	1.021 **	1.02	1.08	1.161 ***	1.021 **	1.206 ***	1.203 **
	PPI	1.116 ***	1.012	1.01	1.031 *	**1.007**	1.118 *	1.034	1.036	1.122 **	1.209 *
	CPI	1.118 **	1.055 *	1.056 **	1.107	**1.015**	1.095 **	1.061 *	1.064	1.144 ***	1.084 **
	PCECI	1.109	1.069	1.069	1.064	1.214	1.079	1.144	1.155	1.112 *	**1.063**
	S&P 500	1.098	0.995	0.987	1.117 ***	**0.977**	1.128	1	1.028	1.1	1.043

* Notes: See notes to Table 1. In this table, the benchmark model is the AR(SIC) models that includes economic uncertainty indexes (EUIs). The alternative model is the AR(SIC) models that include both business conditions predictors (BCs) and economic uncertainty indexes (EUIs).

Table 3: Comparison of the Predictive Accuracy of AR(SIC) + BC Models with AR(SIC) + EUI Models*

		Methods used to Construct Economic Uncertainty Indexes and Business Conditions Predictors									
	Target Variable	PCA(I)	LASSO(I)	LPCA(I)	AP(I)	GP1(I)	GP2(I)	GF1(I)	GF2(I)	EPCA(I)	JLN(I)
	RPI	0.992	0.932	0.943	0.951	0.979	0.969	**0.924**	0.954	0.994	0.948
	INDPRO	0.941	0.866	1.001	0.937	0.965	0.893	1.059	1.046	0.938	**0.606**
	UNRATE	1.146	1.182	1.243 *	1.218	1.127	1.177 *	1.133	1.165 **	1.118	**1.022**
	CLAIMS	1.048	1.015	1.019	0.974	1.004	1.027	1.018	1.043	1.048	**0.907**
h=1	HOUST	1.271 **	1.34 **	1.103	1.208	1.425 ***	1.167	1.333 **	**1.097**	1.271 *	1.11
	PERMIT	1.078	**0.808**	0.972	0.994	0.868 *	1.01	0.914	0.957	0.95	0.988
	RCON	0.864	0.864	0.883	0.898	0.809 *	0.986	**0.768 ****	0.82 *	0.874	0.948
	MTS	1	0.917 **	0.932 *	**0.915**	0.942	1.027	0.949	1.019	0.97	0.973
	M2	0.905	0.978	0.979	0.966	1.027	0.875	0.991	0.961	**0.815 ***	1.009
	R10	0.937	**0.731 ****	1.138	0.995	1.036	0.987	0.864 *	1.101	0.925	0.872
	PPI	0.968	1.016	1.024	1.123 **	1.075	1.07	1.062	1.048	0.956	**0.908**
	CPI	**0.883**	1.092	1.105	1.005	1.034	0.97	1.1	1.129	0.964	1.007
	PCECI	0.91 *	1.147 **	1.157 **	1.065	**0.745**	0.964	1.133	1.114	0.912 *	1.048
	S&P 500	0.861	0.948	0.963	0.907	0.988	0.932	**0.841 ****	0.896	0.862	0.986
	RPI	1.013	**0.942**	0.958	0.986	1.015	1.027	0.953 **	1.045	1.008	0.959
	INDPRO	1.048	**0.851**	0.921	0.935	0.995	1.004	1.007	1.006	1.029	1.01
	UNRATE	1.064	1.034	1.021	1.064	1.217 *	1.053	1.009 *	1.053	1.028	**0.925**
	CLAIMS	0.928	0.961	0.965	0.939	1.012	0.939	0.985	1.043	0.925 *	**0.906 ***
h=3	HOUST	1.171	1.345 **	1.059	1.067	1.276 *	1.018	1.049	**0.964**	1.167	1.156
	PERMIT	1.041	1.198	1.067	1.049	1.02	1.03	**0.837**	0.881	1.056	0.893
	RCON	0.873 *	1.015	0.975	0.931	**0.845 ****	0.922	0.899	0.9	0.847 **	0.922
	MTS	0.864 *	1.007	1.012	0.937 *	0.987	0.887	0.918 *	0.917	**0.838 ****	0.944
	M2	0.893 **	0.988	1.044	1.001	1.008	0.917	1.016	0.993	**0.872 ***	0.96 **
	R10	0.748 *	**0.634 *****	1.06	1.009	1.017	0.865 **	0.975	1.067	0.739 **	0.658
	PPI	0.874 *	0.976 *	1.022	1.005	1.012	0.918	0.984	0.993	0.865 **	**0.856 ****
	CPI	0.836	0.933	1.005	0.877 *	0.99	0.904 *	0.996	1.009	**0.825 ***	0.944 *
	PCECI	0.839 **	0.96	1.029	0.928	**0.829**	0.904	0.996	1.003	0.854 **	0.992
	S&P 500	**0.882**	0.957	1.012	1.023	1.026	0.898	1.012	0.965	0.901	0.998
	RPI	0.968	0.98	1.065	**0.896**	1.189 *	0.92	1.028	0.943	1.079	0.947
	INDPRO	0.864	0.971	0.992	0.933	1.025	0.918	1.054	1.017	0.934	**0.858**
	UNRATE	0.99	1.114	1.151	**0.841**	1.101	0.985	0.903	0.962	1.065	0.883
	CLAIMS	0.945	0.997	1.086	1	1.034	0.969	1.038	1.031	1.017	**0.883**
h=12	HOUST	1.496 ***	2.589 ***	1.409 *	1.312	1.625	1.31 *	1.341	**1.031**	1.577 **	1.351
	PERMIT	1.477 ***	1.776 **	1.762 **	1.252	1.74 **	1.031	1.07	**0.974**	1.99 ***	0.996
	RCON	**0.849**	1.064	1.121	0.985	1.039	0.917	1.077 *	1.011	0.9	1.015
	MTS	**0.939**	1.013	1.085	1.008	1.076	0.965	0.998	0.962	1.048	0.979
	M2	0.756 *	0.874 *	0.928	0.812 *	1.042	**0.713 ***	1.026	0.848	0.734	0.941 ***
	R10	0.851 **	**0.621 *****	1.044	0.999	1.072	0.929	0.932	1.025	0.871 ***	0.833 **
	PPI	0.903 ***	0.99	1.055	0.989	1.041	0.901 *	1.04	1.001	0.951	**0.862 ***
	CPI	**0.903 ***	0.949 **	0.976 *	0.919	1.035	0.927 *	0.98	0.961	0.913 ***	0.947
	PCECI	0.911	0.936	0.968	0.955	**0.858**	0.937	0.908	0.894	0.938 *	0.959
	S&P 500	0.93	1.022	1.072 *	0.921 *	1.13	**0.888**	1.096	1.044	0.995	1.008

* Notes: See notes to Table 1. In this table, the benchmark model is the AR(SIC) models that include business conditions predictors (BCs). The alternative model is the AR(SIC) model that includes economic uncertainty indexes (EUIs).

II. The following tables are the additional results that include forecasts made during the Covid-19 period. Tables 4-11 correspond to Tables 3-10 in the main paper, in that order. Similarly, the figure corresponds to Figure 1 in the main paper. Finally, Tables 12-14 correspond to Tables 1-3 above, but for the longer forecasting period.

Table 4: Predictive Accuracy of Models that Include Economic Uncertainty Indexes*

		Methods Used to Construct Economic Uncertainty Indexes										
	Target Variable	PCAI	LASSOI	LPCAI	API	GP1I	GP2I	GF1I	GF2I	EPCAI	JLNI	VIX
	RPI	1.16	1.126	1.125	1.153	1.186	1.115	1.133	1.18	1.158	1.143	**0.984**
	INDPRO	0.919	0.928	0.93	0.932	0.901	0.926	0.927	0.923	0.923	0.954	**0.841**
	UNRATE	1.197	1.201	1.212	1.187	1.206	1.176	1.198	1.223	1.194	1.117	**1.017**
	CLAIMS	1.155	1.071	1.098	1.153	1.145	1.097	1.11	1.162	1.155	1.104	**1.003**
h=1	HOUST	1.11	1.083	1.088	1.099	1.091	1.086	1.082	1.115	1.108	1.069	**0.981**
	PERMIT	1.101	1.088	1.102	1.08	1.082	1.084	1.088	1.104	1.098	1.052	**1.02**
	RCON	0.87	**0.806**	0.866	0.908	0.86	0.866	0.849	0.909	0.885	0.835	0.966
	MTS	0.856	0.849	0.851	0.897	0.833	0.872	0.85	0.864	0.866	0.893	**0.766**
	M2	1.099	1.038	1.089	1.133	1.134	1.058	1.083	1.148	1.111	**1.014**	1.037
	R10	1.071	1.06	1.069	1.075	1.079	1.057	1.078	1.074	1.069	1.107	**1.02**
	PPI	1.15	1.133	1.141	1.142	1.161	1.113	1.148	1.148	1.149	1.13	**1.032**
	CPI	1.071	1.061	1.072	1.071	1.088	1.056	1.083	1.068	1.072	1.106	**1.054**
	PCECI	1.086	1.077	1.086	1.087	1.104	1.069	1.097	1.085	1.087	1.107	**1.044**
	S&P 500	1.211	1.183	1.179	1.207	1.223	1.166	1.204	1.223	1.207	1.216	**1.002**
	RPI	1.161	0.994	1.043	1.116	1.01	1.086	1.159	1.144	1.119	1.078	**0.97**
	INDPRO	1.344	0.94	1.016	1.047	0.969	1.062	1.165	1.321	1.269	**0.929**	0.946
	UNRATE	1.75	1.039	1.397	1.548	**1.005**	1.517	1.68	1.559	1.648	1.426	1.085
	CLAIMS	2.135	1.022	1.532	1.866	0.994	1.717	1.992	1.882	2.023	1.761	**0.973**
h=3	HOUST	1.116	1.023	1.01	1.061	1.009	1.077	1.067	1.063	1.05	0.995	**0.978**
	PERMIT	1.057	1.027 **	0.989 *	1.017	0.991	1.016	1.015	1.016	1.008	0.965 **	**0.967**
	RCON	2.094	1.009	1.33	1.367	1.01	1.458	1.628	1.852	1.935	1.018	**1.007**
	MTS	1.655	**0.928**	1.149	1.231	0.944	1.235	1.447	1.531	1.509	1.039	0.929
	M2	1.41	**1.012**	1.226	1.283	1.028	1.255	1.385	1.31	1.341	1.205	1.034
	R10	1.115	**1.005**	1.115	1.115	1.043	1.065	1.152	1.107	1.123	1.145	1.016
	PPI	1.165	**1.008**	1.114	1.152	1.026 **	1.121	1.193	1.146	1.139	1.146	1.026
	CPI	1.069	**1.005**	1.099	1.083	1.024 **	1.052 *	1.109	1.102	1.075 *	1.093	1.011
	PCECI	1.074	1.005	1.096	1.085	1.026 **	1.056	1.116	1.1	1.076	1.095	1.008
	S&P 500	1.08	1.017	1.079	1.149	1.017	1.052	1.165	1.1	1.081	1.157	**1.001**
	RPI	58.921	**1.002**	1.548	340.637	1.093	17.68	1.056 **	1.222	1.192	1.027	1.013 *
	INDPRO	33.635	1.008	1.605	26.084	**1.005**	21.243	1.021	1.203	1.236	1.031	1.013
	UNRATE	417.435	1.008	1.231	1.601	1.031	1.903	1.048	1.063	1.13	1.049	**1.007**
	CLAIMS	138.549	1.002	1.352	2901.979	1.007	15.343	1.029	1.051	1.081	0.996	**0.987**
h=12	HOUST	150.442	1.004	1.091	365.726	1.174	1.788	1.096	1.042	1.054	**0.879**	0.963
	PERMIT	654.074	1.009	1.333	2612.625	1.222	1.32	1.098	1.072	1.082	**0.906**	0.953
	RCON	6096.907	**0.994**	1.053	16338.42	1.002	159.552	1	1.222	1.736	1.05	1.049
	MTS	71.823	1.003 *	1.079	1.586	1.013	31.371	**0.988**	1.159	1.484	1.015	1.007
	M2	199.54	**0.999**	1.031 *	1212.375	1.028 *	26.192	1.033	1.037 *	1.045 ***	1.039	1.01
	R10	7.981	**1.004**	2.119	306.879	1.089	2.208	1.058	1.317	1.259	1.028	1.01
	PPI	271.163	1.002 *	1.069 ***	473.837	1.038 ***	2.285	1.074 **	1.048 *	1.056 **	**1.05**	1.015 *
	CPI	14.146	**1.002**	1.029 **	16.745	1.046	1.026	1.032 *	1.025 ***	1.064 *	1.026	1.006
	PCECI	2.779	**1.002**	1.103 **	16.816	1.037	1.017	1.045 ***	1.03 ***	1.042 ***	1.028	1.006
	S&P 500	108.692	1.008	1.047 ***	545.245	1.048	2.216	1.076 *	1.125 **	1.07 ***	1.037	**1.002**

* Notes: See notes to Table 2 in the main paper. The column headers define the big-data method used to construct our EUIs. For example, PCAI denotes EUIs constructed by utilizing business conditions predictors extracted using the PCA method. Likewise, LASSOI denotes EUIs constructed by utilizing business conditions predictors extracted using the LASSO method, etc. All methods are implemented in this way, except JLNI and VIX, for which indexes are collected from the internet, as discussed in Section 2.2 in the main paper. Tabulated entries are relative mean squared forecast error (MSFEs) for our 14 target variables, and for forecast horizons of h=1,3 and 12 months ahead. The AR(SIC) benchmark model is in the denominator of the reported statistics, so that entries less than unity indicate that our more complex models which include economic uncertainty indexes (EUIs) have lower MSFEs. The forecast period is 2004:6-2021:6, and all models are estimated anew prior to the construction of each forecast. Entries in bold denote method with lowest relative MSFE for a given target variable and forecast horizon. Starred entries indicate rejection of the null hypothesis of equal conditional predictive ability using the Giacomini and White (2006) conditional predictive accuracy test. Significance levels for the test include "$***$" for $p < 0.01$, "$**$" for $p < 0.05$, "$*$" for $p < 0.1$. See Sections 2 and 3 in the main paper for complete details.

Table 5: Predictive Accuracy of Models That Include Business Conditions Predictors*

		Methods used to Construct Business Conditions Predictors										
	Target Variable	PCA	LASSO	LPCA	AP	GP1	GP2	GF1	GF2	EPCA	JLN	ADS
	RPI	**1.063**	1.587	1.753	2.543	1.073	1.381	1.729	1.188	**1.063**	6.259	2.48
	INDPRO	1.108	0.956	1.015	1.188	0.917	0.989 *	0.999	**0.876**	1.114	9.5	2.584
	UNRATE	1.202	**0.626**	0.797	1.083	0.905	0.723	0.738	1.232	1.299	6.23	1.312
	CLAIMS	1.007	0.798	0.798	1.084	1.18	0.77	0.779	0.875	0.912	6.594	**0.508**
h=1	HOUST	0.773 **	0.828 *	0.908	0.79 **	**0.664 *** **	0.775	0.845	0.927	0.76 **	1.442	1.2
	PERMIT	1.597	1.384	1.043	**1.014**	1.097	1.12	1.208	1.328	1.348	1.14	1.639
	RCON	0.995	0.987	0.987	0.922	1.062	0.978	1.163	1.139	1.013	1.428	**0.818**
	MTS	0.452	0.95	0.95	**0.408**	1.079	0.48	0.961	0.953	0.482	1.357	1.157
	M2	1.241	1.124	1.124	1.249	0.981	1.349 *	**0.977**	1.472	1.559	1.301	1.275
	R10	1.33	1.679 ***	**0.924**	1.048	1.006 *	1.108	1.281 *	0.944	1.33	2.653	1.072
	PPI	1.654	1.009	1.009	1.072	**0.977**	1.115	1.035	1.035	1.662	8.283	1.211
	CPI	1.44 *	0.991	0.991	1.1	1.095	1.125	0.962	**0.903 ***	1.317	1.167	1.264
	PCECI	1.135 *	**0.897**	**0.897**	0.956	1.492	1.067	1.026	1.026	1.135 *	1.194	1.139
	S&P 500	1.174	1.07	1.07	1.228	**1.034**	1.092	1.176 *	1.141	1.174	1.045	1.318
	RPI	1.421	1.106	1.042	1.184	**0.998**	1.144	1.041	1.345	1.421	3.56	1.026
	INDPRO	1.235	1.019	0.955	1.194	0.993	1.057	1.062	**0.924**	1.233	4.945	1.445
	UNRATE	0.799	1.105	1.03	**0.697**	0.785	0.883	0.965	0.81	0.819	2.434	1.456
	CLAIMS	**1.083**	1.227	1.227	1.224	1.108	1.1	1.205	1.264	1.09	1.141	1.279
h=3	HOUST	0.85	0.784 ***	0.773 **	0.838	**0.755 *** **	0.943	0.838 *	0.843	0.833	1.695	1.232
	PERMIT	0.878	0.843 *	**0.821 ****	0.956	0.984	0.896	1.163	0.927	0.944	0.993	1.145
	RCON	1.095	0.951	0.951	1.075	**0.933**	1.043	0.974	0.946	1.124	1.051	1.141
	MTS	1.407	1.018	1.018	1.233	1.066	**0.983**	1.181	1.189	1.884	1.356	1.097
	M2	1.092	1.159	1.159	1.054	1.01	1.228	**0.997**	1.12	1.137 *	1.404	1.344
	R10	1.771	1.798 ***	1.016	1.044	1.028 *	1.188 ***	1.111	**1.009**	1.824	2.864	1.185
	PPI	1.121	1.026 **	1.026 **	1.057 *	**1.01**	1.123 **	1.068 **	1.068 **	1.145 *	2.73 *	1.264
	CPI	1.261	1.16	1.16	1.248 **	1.09	1.126 **	1.1 **	1.095 **	1.322 **	1.153 *	**1.058**
	PCECI	1.224 **	1.121	1.121	1.123	1.311	1.125	1.083	1.083	1.224 **	1.225	**1.062**
	S&P 500	1.346	1.057	1.057	1.213	**1.009**	1.13	1.101	1.114	1.346	1.072	1.052
	RPI	1.888	1.218	1.142	1.49	**0.969 ***	1.563	1.143	1.585	1.888	1.216	0.994
	INDPRO	1.135	1.515	1.218	1.34	1.021 *	**0.993**	1.032	0.995	1.118	1.429	1.09
	UNRATE	1.768	1.365	1.155	1.455	1.147	1.128	1.288	1.121	1.764	1.468	**1.049**
	CLAIMS	1.195	1.035	1.035	1.102	**0.978**	1.224	1.04	1.087	1.309	2.341	1.246
h=12	HOUST	0.714 **	**0.421 *** **	0.773 *	0.731	0.735 *	0.829	0.834 *	1.014	0.681 *	0.784	1.038
	PERMIT	0.786	0.566 **	0.641 *	0.748	0.705	1.024	1.001	1.074	**0.564 ****	0.948	1.012
	RCON	0.967	0.913	0.913	0.861	0.825	1.521	0.819	**0.81**	1.046	0.874	1.318
	MTS	1.065	**0.971**	**0.971**	1.177	1.029	0.983	1.036	1.044	1.152	1.134	0.986
	M2	1.473 **	1.173	1.173	1.129 **	1.018	1.235 *	**1.016**	1.104	1.501 *	1.059 ***	1.154
	R10	1.968 *	1.985 ***	**1.006**	1.038 *	1.03 *	1.081	1.467 **	1.01	1.954 **	4.582 *	1.051
	PPI	1.372	1.012	1.012	1.07	**1.006**	1.124 *	1.057	1.057	1.409	1.781	1.059
	CPI	1.777 *	1.183	1.183	1.249	**1.048**	1.161 *	1.142	1.137	1.766	1.095 **	1.051
	PCECI	2.425	1.099	1.099	**1.087**	1.229	1.109	1.404	1.404	2.425	1.572	1.199
	S&P 500	2.249	1.003	1.003	1.693	**0.964**	1.171	1.102	1.046	2.249	1.02	1.035 *

* Notes: See notes to Table 4. In this table, the benchmark model is again the AR(SIC) model. However, the alternative is our forecasting model that includes business conditions predictors (BCs), constructed using the big-data methods outlined in Section 2.2 in the main paper, including PCA, LASSO, etc. This nomenclature is used for all predictor extraction methods, including our benchmark ADS method, which is discussed in Section 2.2 in the main paper. Note that although the ADS is an index, results based on its use are included in this table. This is because it is not an uncertainty index, in the sense that it is not constructed using forecast errors. Also, the ADS is defined as a business conditions index on the website of Federal Reserve Bank of Philadelphia. See Section 4 in the main paper for further details.

Table 6: Predictive Accuracy of Models That Include Both Economic Uncertainty Indexes and Business Conditions Predictors*

		Methods used to Construct Economic Uncertainty Indexes and Business Conditions Predictors									
	Target Variable	PCA(I)	LASSO(I)	LPCA(I)	AP(I)	GP1(I)	GP2(I)	GF1(I)	GF2(I)	EPCA(I)	JLN(I)
	RPI	1.274	1.877	1.99	2.579	**1.2**	1.615	2.117	1.433	1.272	9.592
	INDPRO	1.312	1.154	1.176	1.31	1.01	1.095	**0.946**	1.016	1.317	13.017
	UNRATE	1.361	**0.747**	0.851	1.048	0.776	0.817	0.876	1.349	1.464	4.436
	CLAIMS	0.99	**0.843**	0.866	1.158	1.241	0.869	0.849	1.122	0.927	3.979
h=1	HOUST	**0.737 ***	0.881	0.933	0.813 **	0.776 **	0.791	0.843	0.841	0.741 *	1.114
	PERMIT	1.249	1.509	1.124	1.038	1.098	1.161	1.259	**1.012**	1.269	1.11
	RCON	0.872	**0.809**	0.871	0.833 *	0.916	**0.809**	0.838	0.9	0.92	0.87
	MTS	0.577	0.827	0.825	**0.505**	0.914	0.587	0.938	0.913	0.627	1.453
	M2	1.173	1.108	1.167	**1.069**	1.096	1.183	1.088	1.285	1.387	1.22
	R10	1.747	1.744 ***	**0.993**	1.233	1.092	1.411	1.506 **	1.019	1.736	5.317
	PPI	1.902	1.141	1.149	1.358	1.129	1.408	1.098	**1.091**	1.875	5.958
	CPI	1.553 **	1.009	1.022	1.115	1.145	1.237	1.03	**0.956**	1.42 *	1.346
	PCECI	1.149 **	**0.924**	0.93	0.979	1.558	1.158	1.089	1.132	1.149 **	1.054
	S&P 500	1.637 **	1.239	**1.231**	1.798 **	1.286	1.353 *	1.417	1.418 **	1.626 **	1.296
	RPI	1.501	1.123	1.206	1.336	**1.009**	1.283	1.368	1.509	1.412	2.09
	INDPRO	1.732	1.03 *	1.038	1.412	**0.992**	1.372	1.279	1.481	1.579	3.059
	UNRATE	1.276	1.122	1.178	0.925	**0.838**	1.187	1.272	1.25	1.152	2.642
	CLAIMS	4.176	1.443	2.853	2.733	**1.074**	2.574	3.779	3.828	3.867	7.471
h=3	HOUST	1.365	0.811 **	0.834 ***	0.885	**0.766 *** **	1.303	1.079	1.662	1.159	0.916
	PERMIT	1.329	0.885	**0.877**	1.034	0.992	1.01	1.391	1.512	1.266	0.908
	RCON	4.157	**0.96**	1.337	1.684	1.079	2.097	1.83	2.679	3.586	1.294
	MTS	2.733	**0.941**	1.231	1.615	1	1.911	2.373	3.201	2.524	1.182
	M2	1.45	1.182	1.495	1.139	**1.018**	1.338	1.401	1.309	1.446	1.521
	R10	2.185	1.763 ***	1.154	1.145	**1.07 ****	1.268 **	1.4	1.13	2.312	5.697
	PPI	1.428 *	**1.034 ****	1.141	1.262	1.036 *	1.36	1.229 *	1.23 **	1.393 **	3.424
	CPI	1.389 *	1.165	1.237 **	1.303 **	**1.108 ***	1.187 **	1.193 *	1.169 *	1.452 **	1.216
	PCECI	1.297 **	**1.125**	1.196 *	1.207 *	1.341	1.222 *	1.174 **	1.198 **	1.276 **	1.145
	S&P 500	1.338	1.09	1.127	1.37	**1.029**	1.179	1.27	1.254	1.332	1.225
	RPI	1346.386	1.227	1.405	9913.777	**1.096**	21.507	1.251	1.926	2.011	1.586
	INDPRO	2779.211	1.516	1.57	23285.129	**1.015**	40.381	1.043	1.146	1.123	2.08
	UNRATE	347.817	1.348	1.454	5229.126	**1.177**	1.198	1.379	1.183	1.597	1.212
	CLAIMS	1.228	1.048	1.454	821.169	**0.99**	12.996	1.064	1.164	1.397	1.733
h=12	HOUST	44.164	**0.418 *** **	0.836	122.325	0.878	3.049	0.874	1.039	0.745	0.786
	PERMIT	250.048	**0.551 ****	0.854	1196.629	0.862	3.022	1.092	1.045	0.572 **	0.948
	RCON	1211.563	0.907	0.923	11075.034	0.844	96.336	**0.812**	0.86	1.45	0.952
	MTS	2698.488	**0.974**	1.04	16163.276	1.041	38.916	1.032	1.154	1.672	1.258
	M2	10.163	1.196	1.263 **	6670.843	**1.041 ***	20.784	1.049 *	1.139	1.564 *	1.104
	R10	376.155	1.949 ***	2.24	1106.098 *	**1.116**	2.132	1.572 *	1.323	2.295	4.595
	PPI	482.845	**1.014**	1.082 ***	831.111	1.047 **	1.894 **	1.134 ***	1.093 ***	1.479 *	1.818
	CPI	267.152	1.185	1.228	404.363	**1.097 ****	2.066	1.202 **	1.254 *	1.883 **	1.124 **
	PCECI	275.821	**1.101**	1.438	623.302	1.275	2.495	1.436	1.356	2.489 *	1.765
	S&P 500	36.178	**1.013**	1.053	22.042	1.041	1.399	1.183 *	1.191	2.389 **	1.075 *

* Notes: See notes to Tables 4 and 5. In this table, the benchmark model is again the AR(SIC) model. However, the alternative is our forecasting model that includes both business conditions predictors (BCs) and economic uncertainty indexes (EUIs), which are constructed using the methods outlined in Section 2.2 and Section 2.3 in the main paper. Note that the case where both BC predictors and EUIs are constructed using PCA is denoted as PCA(I). This notation allows us to differentiate between the method called "PCA", where only BC predictors are used in our predictive regressions, and said predictors are extracted using PCA, and the method called "PCAI", where EUIs are used in our predictive regressions, and said EUIs are constructed using BC predictors extracted using PCA.

Table 7: Overall "MSFE-Best" Forecasting Models and Methods*

Target Variable	Rank	h=1	h=3	h=12
RPI	1	AR+EUI (VIX)	AR+EUI (VIX)	AR+BC (GP1) *
	2	AR	AR+EUI (LASSOI)	AR+BC (ADS)
	3	AR+BC (PCA)	AR+BC (GP1)	AR
INDPRO	1	AR+EUI (VIX)	AR+BC (GF2)	AR+BC (GP2)
	2	AR+BC (GF2)	AR+EUI (JLNI)	AR+BC (GF2)
	3	AR+EUI (GP1I)	AR+EUI (LASSOI)	AR
UNRATE	1	AR+BC (LASSO)	AR+BC (AP)	AR
	2	AR+BC (GP2)	AR+BC (GP1)	AR+EUI (VIX)
	3	AR+BC (GF1)	AR+BC (PCA)	AR+EUI (LASSOI)
CLAIMS	1	AR+BC (ADS)	AR+EUI (VIX)	AR+BC (GP1)
	2	AR+BC (GP2)	AR+EUI (GP1I)	AR+EUI (VIX)
	3	AR+BC (GF1)	AR	AR+BC+EUI (GP1(I))
HOUST	1	AR+BC (GP1) ***	AR+BC (GP1) ***	AR+BC+EUI (LASSO(I)) ***
	2	AR+BC+EUI (PCA(I)) *	AR+BC+EUI (GP1(I)) ***	AR+BC (LASSO) ***
	3	AR+BC+EUI (EPCA(I)) *	AR+BC (LPCA) **	AR+BC (EPCA) *
PERMIT	1	AR	AR+BC (LPCA) **	AR+BC+EUI (LASSO(I)) **
	2	AR+BC+EUI (GF2(I))	AR+BC (LASSO) *	AR+BC (EPCA) **
	3	AR+BC (AP)	AR+BC+EUI (LPCA(I))	AR+BC (LASSO) **
RCON	1	AR+EUI (LASSOI)	AR+BC (GP1)	AR+BC (GF2)
	2	AR+BC+EUI (GP2(I))	AR+BC (GF2)	AR+BC+EUI (GF1(I))
	3	AR+BC+EUI (LASSO(I))	AR+BC (LASSO)	AR+BC (GF1)
MTS	1	AR+BC (AP)	AR+EUI (LASSOI)	AR+BC (LASSO)
	2	AR+BC (PCA)	AR+EUI (VIX)	AR+BC (LPCA)
	3	AR+BC (GP2)	AR+BC+EUI (LASSO(I))	AR+BC+EUI (LASSO(I))
M2	1	AR+BC (GF1)	AR+BC (GF1)	AR+EUI (LASSOI)
	2	AR+BC (GP1)	AR	AR
	3	AR	AR+BC (GP1)	AR+EUI (VIX)
R10	1	AR+BC (LPCA)	AR	AR
	2	AR+BC (GF2)	AR+EUI (LASSOI)	AR+EUI (LASSOI)
	3	AR+BC+EUI (LPCA(I))	AR+BC (GF2)	AR+BC (LPCA)
PPI	1	AR+BC (GP1)	AR	AR
	2	AR	AR+EUI (LASSOI)	AR+EUI (LASSOI) *
	3	AR+BC (LASSO)	AR+BC (GP1)	AR+BC (GP1)
CPI	1	AR+BC (GF2) *	AR	AR
	2	AR+BC+EUI (GF2(I))	AR+EUI (LASSOI)	AR+EUI (LASSOI)
	3	AR+BC (GF1)	AR+EUI (VIX)	AR+EUI (VIX)
PCECI	1	AR+BC (LASSO)	AR	AR
	2	AR+BC (LPCA)	AR+EUI (LASSOI)	AR+EUI (LASSOI)
	3	AR+BC+EUI (LASSO(I))	AR+EUI (VIX)	AR+EUI (VIX)
S&P 500	1	AR	AR	AR+BC (GP1)
	2	AR+EUI (VIX)	AR+EUI (VIX)	AR
	3	AR+BC (GP1)	AR+BC (GP1)	AR+EUI (VIX)

* Notes: See notes to Table 6. Entries in this table are the top 3 "MSFE-best" forecasting models, selected by comparing forecasts from our benchmark AR(SIC) model with our AR(SIC)+EUI, AR(SIC)+BC, and AR(SIC)+BC+EUI models. For each of these models, the associated predictors extraction method used when constructing the EUIs and BCs is also given, in parentheses. Starred entries indicate rejection of the null hypothesis of equal conditional predictive ability, and indicate that our alternative models that include EUIs and BCs are yield more accurate predictions than our AR benchmark model, using the Giacomini and White (2006) conditional predictive accuracy test. Significance levels for the test include "$***$" for $p < 0.01$, "$**$" for $p < 0.05$, "$*$" for $p < 0.1$. See Section 3 in the main paper for complete details.

Table 8: Top 3 "MSFE-Best" Methods for Models Including Economic Uncertainty Indexes*

Target Variable	Rank	h=1	h=3	h=12
RPI	1	AR+EUI (VIX)	AR+EUI (VIX)	AR
	2	AR	AR+EUI (LASSOI)	AR+EUI (LASSOI)
	3	AR+EUI (GP2I)	AR	AR+EUI (VIX) *
INDPRO	1	AR+EUI (VIX)	AR+EUI (JLNI)	AR
	2	AR+EUI (GP1I)	AR+EUI (LASSOI)	AR+EUI (GP1I)
	3	AR+EUI (PCAI)	AR+EUI (VIX)	AR+EUI (LASSOI)
UNRATE	1	AR	AR	AR
	2	AR+EUI (VIX)	AR+EUI (GP1I)	AR+EUI (VIX)
	3	AR+EUI (JLNI)	AR+EUI (LASSOI)	AR+EUI (LASSOI)
CLAIMS	1	AR	AR+EUI (VIX)	AR+EUI (VIX)
	2	AR+EUI (VIX)	AR+EUI (GP1I)	AR+EUI (JLNI)
	3	AR+EUI (LASSOI)	AR	AR
HOUST	1	AR+EUI (VIX)	AR+EUI (VIX)	AR+EUI (JLNI)
	2	AR	AR+EUI (JLNI)	AR+EUI (VIX)
	3	AR+EUI (JLNI)	AR	AR
PERMIT	1	AR	AR+EUI (JLNI) **	AR+EUI (JLNI)
	2	AR+EUI (VIX)	AR+EUI (VIX)	AR+EUI (VIX)
	3	AR+EUI (JLNI)	AR+EUI (LPCAI) *	AR
RCON	1	AR+EUI (LASSOI)	AR	AR+EUI (LASSOI)
	2	AR+EUI (JLNI)	AR+EUI (VIX)	AR
	3	AR+EUI (GF1I)	AR+EUI (LASSOI)	AR+EUI (GF1I)
MTS	1	AR+EUI (VIX)	AR+EUI (LASSOI)	AR+EUI (GF1I)
	2	AR+EUI (GP1I)	AR+EUI (VIX)	AR
	3	AR+EUI (LASSOI)	AR+EUI (GP1I)	AR+EUI (LASSOI) *
M2	1	AR	AR	AR+EUI (LASSOI)
	2	AR+EUI (JLNI)	AR+EUI (LASSOI)	AR
	3	AR+EUI (VIX)	AR+EUI (GP1I)	AR+EUI (VIX)
R10	1	AR	AR	AR
	2	AR+EUI (VIX)	AR+EUI (LASSOI)	AR+EUI (LASSOI)
	3	AR+EUI (GP2I)	AR+EUI (VIX)	AR+EUI (VIX)
PPI	1	AR	AR	AR
	2	AR+EUI (VIX)	AR+EUI (LASSOI)	AR+EUI (LASSOI) *
	3	AR+EUI (GP2I)	AR+EUI (VIX)	AR+EUI (VIX) *
CPI	1	AR	AR	AR
	2	AR+EUI (VIX)	AR+EUI (LASSOI)	AR+EUI (LASSOI)
	3	AR+EUI (GP2I)	AR+EUI (VIX)	AR+EUI (VIX)
PCECI	1	AR	AR	AR
	2	AR+EUI (VIX)	AR+EUI (LASSOI)	AR+EUI (LASSOI)
	3	AR+EUI (GP2I)	AR+EUI (VIX)	AR+EUI (VIX)
S&P 500	1	AR	AR	AR
	2	AR+EUI (VIX)	AR+EUI (VIX)	AR+EUI (VIX)
	3	AR+EUI (GP2I)	AR+EUI (GP1I)	AR+EUI (LASSOI)

* Notes: See notes to Table 7. This table lists the top 3 predictors extraction methods used in our"MSFE-best" forecasting models, when comparing our benchmark AR(SIC) model with our AR(SIC)+EUI model.

Table 9: Top 3 "MSFE-Best" Methods for Models Including Business Conditions Predictors*

Target Variable	Rank	h=1	h=3	h=12
RPI	1	AR	AR+BC (GP1)	AR+BC (GP1) *
	2	AR+BC (PCA)	AR	AR+BC (ADS)
	3	AR+BC (EPCA)	AR+BC (ADS)	AR
INDPRO	1	AR+BC (GF2)	AR+BC (GF2)	AR+BC (GP2)
	2	AR+BC (GP1)	AR+BC (LPCA)	AR+BC (GF2)
	3	AR+BC (LASSO)	AR+BC (GP1)	AR
UNRATE	1	AR+BC (LASSO)	AR+BC (AP)	AR
	2	AR+BC (GP2)	AR+BC (GP1)	AR+BC (ADS)
	3	AR+BC (GF1)	AR+BC (PCA)	AR+BC (GF2)
CLAIMS	1	AR+BC (ADS)	AR	AR+BC (GP1)
	2	AR+BC (GP2)	AR+BC (PCA)	AR
	3	AR+BC (GF1)	AR+BC (EPCA)	AR+BC (LASSO)
HOUST	1	AR+BC (GP1) ***	AR+BC (GP1) ***	AR+BC (LASSO) ***
	2	AR+BC (EPCA) **	AR+BC (LPCA) **	AR+BC (EPCA) *
	3	AR+BC (PCA) **	AR+BC (LASSO) ***	AR+BC (PCA) **
PERMIT	1	AR	AR+BC (LPCA) **	AR+BC (EPCA) **
	2	AR+BC (AP)	AR+BC (LASSO) *	AR+BC (LASSO) **
	3	AR+BC (LPCA)	AR+BC (PCA)	AR+BC (LPCA) *
RCON	1	AR+BC (ADS)	AR+BC (GP1)	AR+BC (GF2)
	2	AR+BC (AP)	AR+BC (GF2)	AR+BC (GF1)
	3	AR+BC (GP2)	AR+BC (LASSO)	AR+BC (GP1)
MTS	1	AR+BC (AP)	AR+BC (GP2)	AR+BC (LASSO)
	2	AR+BC (PCA)	AR	AR+BC (LPCA)
	3	AR+BC (GP2)	AR+BC (LASSO)	AR+BC (GP2)
M2	1	AR+BC (GF1)	AR+BC (GF1)	AR
	2	AR+BC (GP1)	AR	AR+BC (GF1)
	3	AR	AR+BC (GP1)	AR+BC (GP1)
R10	1	AR+BC (LPCA)	AR	AR
	2	AR+BC (GF2)	AR+BC (GF2)	AR+BC (LPCA)
	3	AR	AR+BC (LPCA)	AR+BC (GF2)
PPI	1	AR+BC (GP1)	AR	AR
	2	AR	AR+BC (GP1)	AR+BC (GP1)
	3	AR+BC (LASSO)	AR+BC (LASSO) **	AR+BC (LASSO)
CPI	1	AR+BC (GF2) *	AR	AR
	2	AR+BC (GF1)	AR+BC (ADS)	AR+BC (GP1)
	3	AR+BC (LASSO)	AR+BC (GP1)	AR+BC (ADS)
PCECI	1	AR+BC (LASSO)	AR	AR
	2	AR+BC (LPCA)	AR+BC (ADS)	AR+BC (AP)
	3	AR+BC (AP)	AR+BC (GF1)	AR+BC (LASSO)
S&P 500	1	AR	AR	AR+BC (GP1)
	2	AR+BC (GP1)	AR+BC (GP1)	AR
	3	AR+BC (JLN)	AR+BC (ADS)	AR+BC (LASSO)

* Notes: See notes to Table 8. This table lists the top 3 predictors extraction methods used in our"MSFE-best" forecasting models, when comparing our benchmark AR(SIC) model with our AR(SIC)+BC model.

Table 10: Top 3 "MSFE-Best" Methods for Models Including Both Economic Uncertainty Indexes and Business Conditions Predictors*

Target Variable	Rank	h=1	h=3	h=12
RPI	1	AR	AR	AR
	2	AR+BC+EUI (GP1(I))	AR+BC+EUI (GP1(I))	AR+BC+EUI (GP1(I))
	3	AR+BC+EUI (EPCA(I))	AR+BC+EUI (LASSO(I))	AR+BC+EUI (LASSO(I))
INDPRO	1	AR+BC+EUI (GF1(I))	AR+BC+EUI (GP1(I))	AR
	2	AR	AR	AR+BC+EUI (GP1(I))
	3	AR+BC+EUI (GP1(I))	AR+BC+EUI (LASSO(I)) *	AR+BC+EUI (GF1(I))
UNRATE	1	AR+BC+EUI (LASSO(I))	AR+BC+EUI (GP1(I))	AR
	2	AR+BC+EUI (GP1(I))	AR+BC+EUI (AP(I))	AR+BC+EUI (GP1(I))
	3	AR+BC+EUI (GP2(I))	AR	AR+BC+EUI (GF2(I))
CLAIMS	1	AR+BC+EUI (LASSO(I))	AR	AR+BC+EUI (GP1(I))
	2	AR+BC+EUI (GF1(I))	AR+BC+EUI (GP1(I))	AR
	3	AR+BC+EUI (LPCA(I))	AR+BC+EUI (LASSO(I))	AR+BC+EUI (LASSO(I))
HOUST	1	AR+BC+EUI (PCA(I)) *	AR+BC+EUI (GP1(I)) ***	AR+BC+EUI (LASSO(I)) ***
	2	AR+BC+EUI (EPCA(I)) *	AR+BC+EUI (LASSO(I)) **	AR+BC+EUI (EPCA(I))
	3	AR+BC+EUI (GP1(I)) **	AR+BC+EUI (LPCA(I)) ***	AR+BC+EUI (JLN(I))
PERMIT	1	AR	AR+BC+EUI (LPCA(I))	AR+BC+EUI (LASSO(I)) **
	2	AR+BC+EUI (GF2(I))	AR+BC+EUI (LASSO(I))	AR+BC+EUI (EPCA(I)) **
	3	AR+BC+EUI (AP(I))	AR+BC+EUI (JLN(I))	AR+BC+EUI (LPCA(I))
RCON	1	AR+BC+EUI (GP2(I))	AR+BC+EUI (LASSO(I))	AR+BC+EUI (GF1(I))
	2	AR+BC+EUI (LASSO(I))	AR	AR+BC+EUI (GP1(I))
	3	AR+BC+EUI (AP(I)) *	AR+BC+EUI (GP1(I))	AR+BC+EUI (GF2(I))
MTS	1	AR+BC+EUI (AP(I))	AR+BC+EUI (LASSO(I))	AR+BC+EUI (LASSO(I))
	2	AR+BC+EUI (PCA(I))	AR	AR
	3	AR+BC+EUI (GP2(I))	AR+BC+EUI (GP1(I))	AR+BC+EUI (GF1(I))
M2	1	AR	AR	AR
	2	AR+BC+EUI (AP(I))	AR+BC+EUI (GP1(I))	AR+BC+EUI (GP1(I)) *
	3	AR+BC+EUI (GF1(I))	AR+BC+EUI (AP(I))	AR+BC+EUI (GF1(I)) *
R10	1	AR+BC+EUI (LPCA(I))	AR	AR
	2	AR	AR+BC+EUI (GP1(I)) **	AR+BC+EUI (GP1(I))
	3	AR+BC+EUI (GF2(I))	AR+BC+EUI (GF2(I))	AR+BC+EUI (GF2(I))
PPI	1	AR	AR	AR
	2	AR+BC+EUI (GF2(I))	AR+BC+EUI (LASSO(I)) **	AR+BC+EUI (LASSO(I))
	3	AR+BC+EUI (GF1(I))	AR+BC+EUI (GP1(I)) *	AR+BC+EUI (GP1(I)) **
CPI	1	AR+BC+EUI (GF2(I))	AR	AR
	2	AR	AR+BC+EUI (GP1(I)) *	AR+BC+EUI (GP1(I)) **
	3	AR+BC+EUI (LASSO(I))	AR+BC+EUI (LASSO(I))	AR+BC+EUI (JLN(I)) **
PCECI	1	AR+BC+EUI (LASSO(I))	AR	AR
	2	AR+BC+EUI (LPCA(I))	AR+BC+EUI (LASSO(I))	AR+BC+EUI (LASSO(I))
	3	AR+BC+EUI (AP(I))	AR+BC+EUI (JLN(I))	AR+BC+EUI (GP1(I))
S&P 500	1	AR	AR	AR
	2	AR+BC+EUI (LPCA(I))	AR+BC+EUI (GP1(I))	AR+BC+EUI (LASSO(I))
	3	AR+BC+EUI (LASSO(I))	AR+BC+EUI (LASSO(I))	AR+BC+EUI (GP1(I))

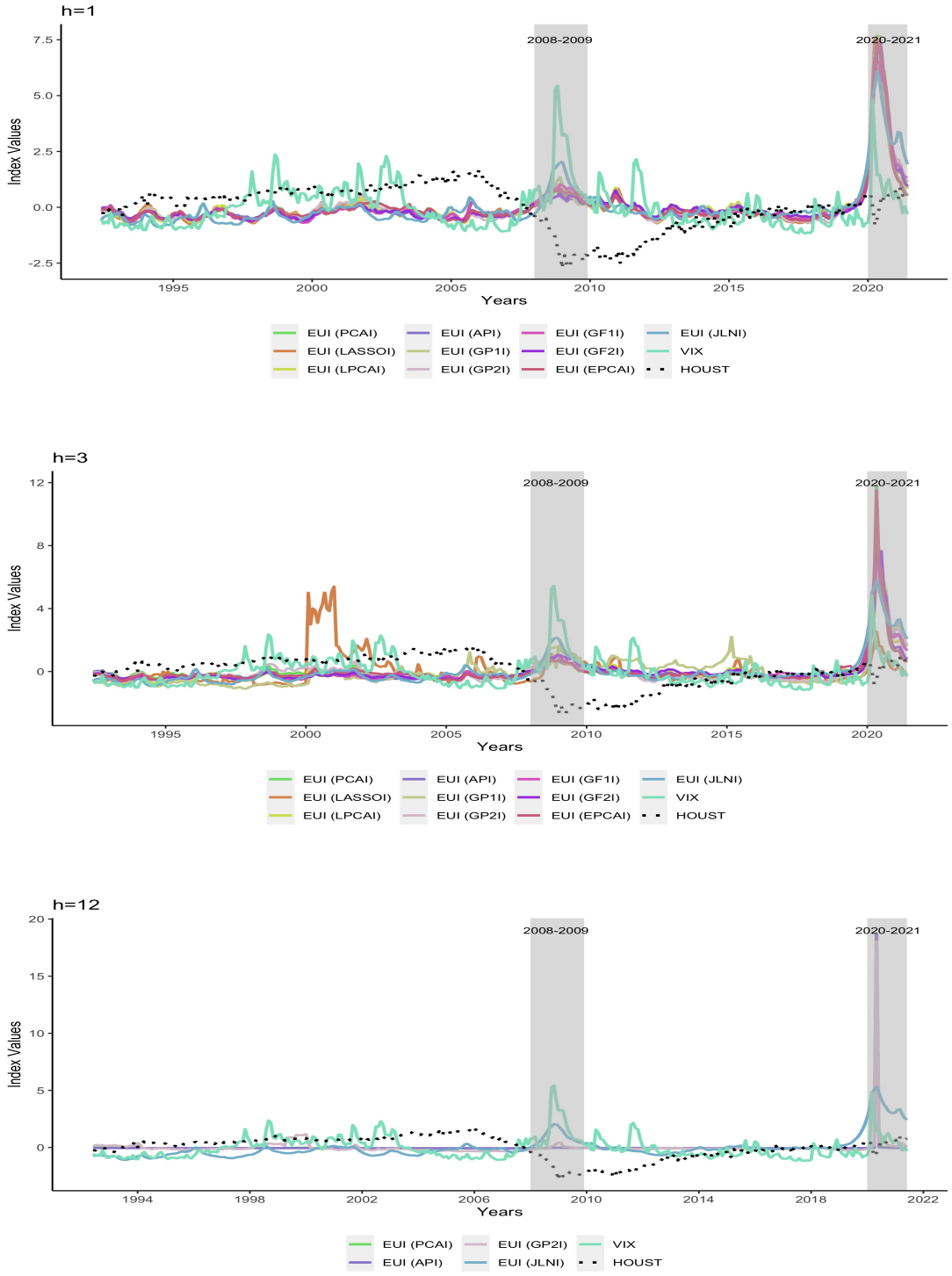
* Notes: See notes to Table 9. This table lists the top 3 predictors extraction methods used in our "MSFE-best" forecasting models, when comparing our benchmark AR(SIC) model with our AR(SIC)+BC+EUI model.

Table 11: Predictive Accuracy of Average Economic Uncertainty Indexes Forecasts and Forecasts Combinations*

		Methods for Indexes Average and Forecasts Combinations					
	Target Variable	FAV1	FAV2	FAV3	Comb1	Comb2	Comb3
	RPI	1.151	0.985	0.991	1.143	1.119	1.172
	INDPRO	0.923	0.838	0.899	0.916	0.898	0.915
	UNRATE	1.197	1.02	1.002	1.191	1.150	1.125
	CLAIMS	1.128	1.004	1.023	1.121	1.092	0.991
h=1	HOUST	1.093	0.982	0.997	1.090	1.070	1.072
	PERMIT	1.09	1.021	1.017	1.085	1.067	1.093
	RCON	0.867	0.961	1.007	0.860	0.847	0.813
	MTS	0.857	0.762	0.915	0.854	0.837	0.780
	M2	1.1	1.035	1.036	1.092	1.044	1.017
	R10	1.072	1.021	1.017	1.068	1.061	1.058
	PPI	1.146	1.033	1.025	1.142	1.125	1.126
	CPI	1.074	1.055	1.048	1.070	1.067	1.077
	PCECI	1.089	1.045	1.037	1.085	1.080	1.083
	S&P 500	1.208	1.003	1.003	1.196	1.164	1.164
	RPI	1.058	0.969	0.977	1.046	1.030	1.020
	INDPRO	1.053	0.943	1.004	0.999	0.946	0.921
	UNRATE	1.441	1.088	1.045	1.411	1.363	1.347
	CLAIMS	1.581	0.974	0.947	1.491	1.390	1.345
h=3	HOUST	1.082	0.978	0.979	1.008	0.988	0.968
	PERMIT	1.037	0.967	0.969	0.970	0.952	0.937
	RCON	1.409	1.002	1.018	1.341	1.205	1.175
	MTS	1.19	**0.925**	0.986	1.088	1.001	0.963
	M2	1.207	1.034	1.017	1.196	1.163	1.159
	R10	1.052	1.016	1.008	1.065	1.058	1.061
	PPI	1.092	1.026	1.021	1.111	1.104	1.111
	CPI	1.035	1.012	1.012	1.062	1.058	1.056
	PCECI	1.038	1.008	1.008	1.064	1.059	1.057
	S&P 500	1.037	1.001	1.004	1.055	1.052	1.048
	RPI	1.036	1.036	1.036	11.795	8.218	7.060
	INDPRO	1.011 *	1.011 *	1.011 *	1.323	1.221	1.192
	UNRATE	1.035 **	1.035 **	1.035 **	6.759	4.929	4.341
	CLAIMS	1.004	1.004	1.004	58.953	39.569	33.272
h=12	HOUST	1.128	1.128	1.128	11.992	8.225	7.008
	PERMIT	1.177	1.177	1.177	73.612	49.518	41.670
	RCON	0.998	0.998	0.998	578.735	386.410	323.962
	MTS	1.012	1.012	1.012	3.227	2.460	2.216
	M2	1.009	1.009	1.009	37.070	25.202	21.375
	R10	1.028	1.028	1.028	6.230	4.525	3.961
	PPI	1.027 *	1.027 *	1.027 *	20.584	14.293	12.241
	CPI	1.029	1.029	1.029	1.019	1.017	1.017
	PCECI	1.04	1.04	1.04	1.100	1.072	1.067
	S&P 500	1.025	1.025	1.025	16.080	11.131	9.515

* Notes: The column headers define three average indexes forecasts and three forecasts combinations. Tabulated entries are relative mean squared forecast error (MSFEs) for our 14 target variables, and for forecast horizons of h=1,3 and 12 months ahead. The AR(SIC) benchmark model is in the denominator of the reported statistics, so that entries less than unity indicate that our more complex models which include average of economic uncertainty indexes (EUIs) or forecasts combinations have lower MSFEs. The forecast period is 2004:6-2021:6, and all models are estimated anew prior to the construction of each forecast. Entries in bold denote method can beat all other forecast models summarized in Table 7 for a given target variable and forecast horizon. Starred entries indicate rejection of the null hypothesis of equal conditional predictive ability using the Giacomini and White (2006) conditional predictive accuracy test. Significance levels for the test include "$***$" for $p < 0.01$, "$**$" for $p < 0.05$, "$*$" for $p < 0.1$. See Sections 2 and 3 in the main paper for complete details.

Figure 1: Plots of Housing Starts, Various Economic Uncertainty Indexes, and the VIX*



*Notes: See notes to Table 4. The above three figures include various plots of our economic uncertainty indexes (EUIs), HOUST, and the VIX. All EUI plots depict real-time measures constructed for the period 1992:6-2021:6, and updated prior to the construction of each new forecast reported on in Tables 4-10. The shaded regions in the plots correspond roughly to the 2008 Financial Crisis (2008:1-2009:12) and Covid-19 period (2020:1-2021:6). And we only keep some reasonable EUIs in h=12 because EUIs do not perform well in h=12 forecasting experiments.

Table 12: Comparison of the Predictive Accuracy of AR(SIC) + BC Models with AR(SIC) + BC + EUI Models*

		Methods used to Construct Economic Uncertainty Indexes and Business Conditions Predictors									
	Target Variable	PCA(I)	LASSO(I)	LPCA(I)	AP(I)	GP1(I)	GP2(I)	GF1(I)	GF2(I)	EPCA(I)	JLN(I)
	RPI	1.198	1.183	1.135	**1.014**	1.119	1.169	1.224	1.205	1.196	1.532
	INDPRO	1.185	1.207	1.159	1.102	1.101	1.107	**0.947**	1.16	1.182	1.37
	UNRATE	1.132	1.193	1.067	0.967	0.857	1.131	1.187	1.094	1.127	**0.712**
	CLAIMS	0.982	1.057	1.085	1.069	1.051	1.128	1.089	1.283	1.016	**0.603**
h=1	HOUST	0.954	1.063	1.028	1.029	1.169	1.021	0.997	0.907	0.975	**0.773**
	PERMIT	0.782	1.09	1.078	1.024	1.001 **	1.036	1.042	**0.762**	0.942	0.974
	RCON	0.877	0.82	0.883	0.903	0.862	0.827	0.72	0.79	0.908	**0.609**
	MTS	1.275	0.87	0.869	1.238	**0.847**	1.223	0.976	0.957	1.301	1.071
	M2	0.946	0.986	1.038	**0.856**	1.117	0.877	1.113	0.873	0.89	0.938
	R10	1.314	**1.039**	1.074	1.177	1.086	1.273	1.175	1.08	1.305	2.004
	PPI	1.15	1.13	1.138	1.267	1.155	1.263	1.062	1.054	1.129	**0.719**
	CPI	1.079	1.018	1.031	**1.014**	1.046	1.1	1.071	1.059	1.078	1.153
	PCECI	1.012	1.031	1.037	1.025	1.044	1.085	1.061	1.103	1.012	**0.883**
	S&P 500	1.395	1.158	**1.151**	1.465	1.244	1.239	1.204	1.243	1.385	1.24
	RPI	1.056	1.015	1.157	1.128	1.011	1.121	1.314	1.122	0.993	**0.587**
	INDPRO	1.402	1.01	1.087	1.182	0.999	1.298	1.204	1.603	1.281	**0.619**
	UNRATE	1.596	**1.015**	1.144	1.327	1.068	1.344	1.318	1.542	1.406	1.086
	CLAIMS	3.855	1.176	2.325	2.233	**0.969**	2.34	3.136	3.028	3.549	6.547
h=3	HOUST	1.605	1.034 **	1.079	1.056	1.015	1.382	1.288	1.971	1.392	**0.541**
	PERMIT	1.515	1.05	1.069	1.082	1.008	1.127	1.196	1.632	1.34	**0.914**
	RCON	3.798	**1.01**	1.406	1.566	1.156	2.011	1.878	2.832	3.189	1.231
	MTS	1.942	0.924	1.209	1.309	0.938	1.944	2.009	2.691	1.34	**0.872**
	M2	1.328	1.02	1.29	1.081	**1.008**	1.089	1.406	1.169	1.272	1.083
	R10	1.234	**0.981**	1.136	1.096	1.041	1.067	1.259	1.119	1.268	1.989
	PPI	1.274	**1.008**	1.112	1.194	1.026 **	1.21	1.15	1.151	1.217	1.255
	CPI	1.101	1.004 **	1.067	**1.044**	1.016 *	1.055	1.085	1.068	1.098	1.054
	PCECI	1.059	1.003 *	1.066	1.074	1.023 **	1.086	1.084	1.106	1.042	**0.935**
	S&P 500	0.994	1.031	1.066	1.129 *	1.02	1.043	1.153	1.126	**0.989**	1.143
	RPI	713.113	**1.007**	1.231	6655.461	1.131	13.76	1.094	1.215	1.065	1.304
	INDPRO	2448.132	1.001	1.289	17376.806	**0.994**	40.684	1.011	1.151	1.004	1.456
	UNRATE	196.734	0.987	1.259	3593.744	1.026	1.062	1.07	1.055	0.905 **	**0.826**
	CLAIMS	1.027	1.013	1.405	744.869	1.012	10.617	1.023	1.071	1.067 **	**0.74**
h=12	HOUST	61.827	**0.992**	1.081	167.365	1.194	3.677	1.048	1.024	1.093	1.003
	PERMIT	318.127	0.974	1.332	1599.085	1.223	2.952	1.091 **	**0.973**	1.014	1 **
	RCON	1253.384	0.993	1.011	12860.31	1.023	63.336	**0.992**	1.062	1.386	1.089
	MTS	2534.503	1.003 *	1.072	13731.73	1.012	39.577	**0.996**	1.106	1.451	1.11
	M2	6.901	**1.02**	1.077	5906.334	1.023	16.829	1.032 *	1.032	1.042 **	1.043
	R10	191.121	**0.982**	2.226	1065.179	1.084	1.973	1.072	1.31	1.175	1.003
	PPI	351.981	1.002 *	1.069 ***	777.023	1.041 ***	1.685	1.073 **	1.034 **	1.049 **	**1.02**
	CPI	150.374	**1.001**	1.038 ***	323.757	1.047 *	1.779 ***	1.052 ***	1.103 **	1.066 *	1.026 ***
	PCECI	113.753	**1.001**	1.308	573.666	1.037	2.249	1.023	0.966 ***	1.026 ***	1.123
	S&P 500	16.086	**1.01**	1.051 ***	13.023	1.08 *	1.195	1.074 **	1.138	1.062 *	1.055

* Notes: See notes to Table 4. The benchmark model is AR(SIC) models that include business conditions predictors (BCs). The benchmark model is in the denominator of the reported statistics, so that entries less than unity indicate that our more complex models which include both business conditions predictors (BCs) and economic uncertainty indexes (EUIs) have lower MSFEs. The forecast period is 2004:6-2021:6, and all models are estimated anew prior to the construction of each forecast. Entries in bold denote method with lowest relative MSFE for a given target variable and forecast horizon. Starred entries indicate rejection of the null hypothesis of equal conditional predictive ability using the Giacomini and White (2006) conditional predictive accuracy test. Significance levels for the test include "$***$" for $p < 0.01$, "$**$" for $p < 0.05$, "$*$" for $p < 0.1$.

Table 13: Comparison of the Predictive Accuracy of AR(SIC) + EUI Models with AR(SIC) + BC + EUI Models*

		Methods used to Construct Economic Uncertainty Indexes and Business Conditions Predictors									
	Target Variable	PCA(I)	LASSO(I)	LPCA(I)	AP(I)	GP1(I)	GP2(I)	GF1(I)	GF2(I)	EPCA(I)	JLN(I)
	RPI	1.099	1.667	1.768	2.237	**1.011**	1.449	1.868	1.214	1.098	8.389
	INDPRO	1.428	1.243	1.264	1.405	1.121	1.182	**1.02**	1.101	1.427	13.652
	UNRATE	1.137	**0.622**	0.702	0.883	0.643	0.695	0.731	1.103	1.226	3.971
	CLAIMS	0.857	0.787	0.789	1.005	1.084	0.792	**0.765**	0.966	0.802	3.603
h=1	HOUST	**0.664 ***	0.813	0.858	0.739 *	0.712 **	0.729 *	0.779	0.754	0.669 *	1.043
	PERMIT	1.134	1.386	1.02	0.961	1.015	1.071	1.156	**0.917**	1.156	1.055
	RCON	1.002	1.004	1.006	**0.918**	1.065	0.934	0.988	0.99	1.039	1.042
	MTS	0.674 **	0.973	0.97	**0.562**	1.097	0.674	1.103	1.056	0.724 **	1.627
	M2	1.067	1.067	1.071	**0.944**	0.966	1.118	1.004	1.12	1.249	1.203
	R10	1.631 *	1.646 ***	**0.929**	1.147	1.012	1.334	1.397 **	0.949	1.624 *	4.803
	PPI	1.654	1.007	1.007	1.189	0.972	1.265	0.957	**0.95**	1.632	5.274
	CPI	1.45 *	0.951	0.953	1.041	1.052	1.172	0.951	**0.895**	1.324	1.217
	PCECI	1.058	0.858	**0.856**	0.901	1.412	1.083	0.993	1.043	1.058	0.953
	S&P 500	1.352	1.048	**1.045**	1.49	1.052	1.16	1.177	1.16 **	1.347	1.065
	RPI	1.293	1.13	1.156	1.197	**0.999**	1.181	1.18	1.319	1.262	1.938
	INDPRO	1.288	1.095 *	**1.021**	1.348	1.023	1.291	1.099	1.122	1.245	3.293
	UNRATE	0.729	1.08	0.844	**0.598**	0.835	0.782	0.757	0.802	0.699	1.852
	CLAIMS	1.956	1.412	1.862	1.464	**1.081**	1.499	1.897	2.034	1.911	4.242
h=3	HOUST	1.223	0.793 **	0.826	0.834	**0.759 *** **	1.209	1.011	1.563	1.104	0.921
	PERMIT	1.258	**0.861 ***	0.886	1.017	1	0.994	1.371	1.489	1.256	0.942
	RCON	1.985	**0.952**	1.005	1.232	1.068	1.438	1.124	1.447	1.853	1.272
	MTS	1.652	**1.015**	1.071	1.311	1.059	1.547	1.64	2.091	1.673	1.138
	M2	1.029	1.169	1.219	**0.888**	0.99	1.066	1.012	0.999	1.078	1.262
	R10	1.96	1.754 ***	1.035	1.027	1.026 *	1.19 **	1.215	**1.021**	2.059	4.974
	PPI	1.225	1.026 **	1.024 **	1.095	**1.01**	1.212	1.029	1.073	1.223 *	2.988
	CPI	1.299	1.159	1.126	1.204 **	1.081 *	1.129 **	1.076 **	**1.061 ***	1.35 **	1.112
	PCECI	1.208 **	1.119	1.091	1.112	1.307	1.157 *	1.052	1.089	1.185 **	**1.046**
	S&P 500	1.239	1.071	1.045	1.193	**1.012**	1.121	1.09	1.141 **	1.232	1.058
	RPI	22.851	1.224	**0.907**	29.104	1.003 **	1.216	1.185	1.576	1.688	1.545
	INDPRO	82.629	1.503	0.978	892.7	1.01 *	1.901	1.021	0.953	**0.909**	2.016
	UNRATE	0.833	1.336	1.181	3265.922	1.141	**0.629**	1.315	1.112	1.414	1.156
	CLAIMS	**0.009**	1.046	1.075	0.283	0.983	0.847	1.034	1.108	1.293	1.739
h=12	HOUST	**0.294**	0.416 ***	0.766 *	0.334	0.748	1.706	0.798	0.997	0.707 *	0.894
	PERMIT	**0.382**	0.546 **	0.64 **	0.458	0.706	2.289	0.995	0.974	0.529 **	1.046
	RCON	**0.199**	0.912	0.877	0.678	0.842	0.604	0.812	0.704	0.835	0.906
	MTS	37.571	0.971	**0.964**	10193.307	1.027	1.24	1.044	0.996	1.126	1.239
	M2	**0.051**	1.198	1.224	5.502	1.012	0.794 *	1.015	1.099	1.497 *	1.063 **
	R10	47.134	1.942 ***	1.057	3.604	1.025 *	**0.966**	1.486 **	1.005	1.823	4.472
	PPI	1.781	1.012	1.012	1.754	1.008	**0.829 ***	1.056 *	1.043	1.401	1.731
	CPI	18.886	1.183	1.194 *	24.149	**1.049**	2.014	1.165 *	1.223	1.771	1.096 **
	PCECI	99.267	**1.099**	1.304	37.067	1.229	2.454	1.374	1.317	2.389	1.716
	S&P 500	0.333	1.005	1.006	**0.04**	0.993	0.631	1.099	1.059	2.232 *	1.037

* Notes: See notes to Table 12. In this table, the benchmark model is AR(SIC) models that include economic uncertainty indexes (EUIs). However, the alternative forecasting model is AR(SIC) models that include both business conditions predictors (BCs) and economic uncertainty indexes (EUIs).

Table 14: Comparison of the Predictive Accuracy of AR(SIC) + BC Models with AR(SIC) + EUI Models*

		Methods used to Construct Economic Uncertainty Indexes and Business Conditions Predictors									
	Target Variable	PCA(I)	LASSO(I)	LPCA(I)	AP(I)	GP1(I)	GP2(I)	GF1(I)	GF2(I)	EPCA(I)	JLN(I)
	RPI	1.091	0.709	0.642	0.453	1.106	0.807	0.655	0.993	1.089	**0.183**
	INDPRO	0.829	0.971	0.917	0.784	0.982	0.936	0.928	1.054	0.829	**0.1**
	UNRATE	0.996	1.919	1.52	1.095	1.333	1.627	1.623	0.992	0.919	**0.179**
	CLAIMS	1.147	1.342	1.376	1.064	0.97	1.424	1.424	1.328	1.267	**0.167**
h=1	HOUST	1.436 *	1.308	1.199 *	1.392 *	1.642 **	1.402	1.28	1.203	1.458 **	**0.741**
	PERMIT	**0.689**	0.786	1.057	1.065	0.986	0.968	0.901	0.831	0.815	0.923
	RCON	0.875	0.817	0.878	0.984	0.81	0.885	0.73	0.798	0.874	**0.585**
	MTS	1.893	0.894	0.896	2.202	0.772	1.815	0.885	0.907	1.797	**0.658**
	M2	0.886	0.924	0.969	0.907	1.156	0.784	1.108	0.78	**0.712**	0.78
	R10	0.805	0.631 ***	1.156	1.026	1.073	0.954	0.841 *	1.138	0.804	**0.417**
	PPI	0.695	1.122	1.13	1.065	1.188	0.999	1.11	1.11	0.692	**0.136**
	CPI	**0.744 ***	1.071	1.083	0.974	0.994	0.939	1.126	1.183	0.814	0.947
	PCECI	0.956 **	1.201	1.212 *	1.138	**0.74**	1.002	1.069	1.058	0.957 **	0.927
	S&P 500	1.032	1.106	1.102	**0.983**	1.183	1.068	1.024	1.072	1.028	1.164
	RPI	0.817	0.899	1.002	0.942	1.012	0.949	1.113	0.851	0.787	**0.302**
	INDPRO	1.089	0.923 *	1.064	0.877	0.976	1.005	1.096	1.429	1.029	**0.189**
	UNRATE	2.189	0.94	1.356	2.22	1.28	1.719	1.741	1.923	2.012	**0.597**
	CLAIMS	1.972	**0.833**	1.249	1.525	0.897	1.561	1.653	1.489	1.857	1.597
h=3	HOUST	1.313	1.305 ***	1.307	1.266	1.337 **	1.142	1.274	1.261	1.26	**0.595**
	PERMIT	1.204	1.219	1.206	1.064	1.008	1.134	**0.872 ***	1.096	1.067	0.986 **
	RCON	1.913	1.06	1.399	1.272	1.083	1.399	1.671	1.957	1.721	**1.02**
	MTS	1.176	0.911	1.128	0.999	0.886	1.256	1.225	1.287	0.801	**0.783**
	M2	1.291	0.873	1.058	1.217	1.018	1.022	1.389	1.17	1.179	**0.866**
	R10	0.629	0.559 ***	1.097	1.068	1.015	0.897	1.036	1.096	0.616	**0.404**
	PPI	1.039	0.983	1.086	1.09	1.016	0.998	1.117	1.073	0.995	**0.421**
	CPI	0.848	0.866	0.947	0.867 *	0.94	0.934	1.008	1.006	**0.813 ***	0.949
	PCECI	0.877	0.896	0.977	0.966	**0.783**	0.939	1.03	1.015	0.879 *	0.894
	S&P 500	**0.803**	0.963	1.021	0.947	1.008	0.931	1.058	0.987	**0.803**	1.075
	RPI	31.208	0.823	1.356	228.682	1.128 *	11.311	0.924	0.77	**0.631**	0.852
	INDPRO	29.628	**0.666**	1.318	19.465	0.985	21.403	0.99	1.208	1.105	0.728
	UNRATE	236.112	0.739	1.066	1.1	0.899	1.687	0.814	0.949	**0.64**	0.708
	CLAIMS	115.916	0.968	1.306	2632.338	1.03	12.535	0.989	0.966	0.826	**0.417**
h=12	HOUST	210.607	2.384 ***	1.41 *	500.386	1.598	2.156	1.314	**1.028**	1.547 *	1.209
	PERMIT	832.153 *	1.783 **	2.08 **	3491.314	1.733 **	1.289	1.096	**0.998**	1.918 ***	1.037
	RCON	6307.358	**1.088**	1.153	18972.145	1.214	104.896	1.222	1.508	1.659	1.192
	MTS	67.459	1.033	1.111	1.347	0.985	31.904	0.953	1.11	1.288	**0.9**
	M2	135.489	0.852	0.879	1073.431	1.01	21.207 *	1.017	0.939	**0.696**	0.974 ***
	R10	4.055	0.506 ***	2.105	295.526	1.057	2.042	0.721	1.303	0.645	**0.226 ***
	PPI	197.671	0.99	1.057 *	443	1.032	2.033	1.016 *	0.991	0.749	**0.592**
	CPI	7.962	0.847	0.87 *	13.407	0.998	0.883	0.903	0.902	**0.602**	0.938 *
	PCECI	1.146	0.911	1.003	15.476	0.844	0.917	0.744	0.733	**0.43**	0.655
	S&P 500	48.328	1.005	1.044	322.142	1.087	1.893	0.977	1.075	**0.476**	1.014

* Notes: See notes to Table 12. In this table, the benchmark model is AR(SIC) models that include business conditions predictors (BCs). However, the alternative forecasting model is AR(SIC) model includes economic uncertainty indexes (EUIs).

References

Giacomini, R., & White, H. (2006). Tests of conditional predictive ability. *Econometrica*, *74*(6), 1545–1578.