

Forecasting and Nowcasting Emerging Market GDP Growth Rates: The Role of Latent Global Economic Policy Uncertainty and Macroeconomic Data Surprise Factors*

Oguzhan Cepni¹, I. Ethem Guney¹, and Norman R. Swanson²

¹Central Bank of the Republic of Turkey and ²Rutgers University

April 2019

Online Appendix

This contains additional figures and tables, discusses data transformations used in the paper, and lists Bloomberg definitions of all variables used in our experiments.

Keywords: Diffusion index, Factor extraction methods, Emerging markets, Factor model, Forecasting.

JEL Classification: C53, G17.

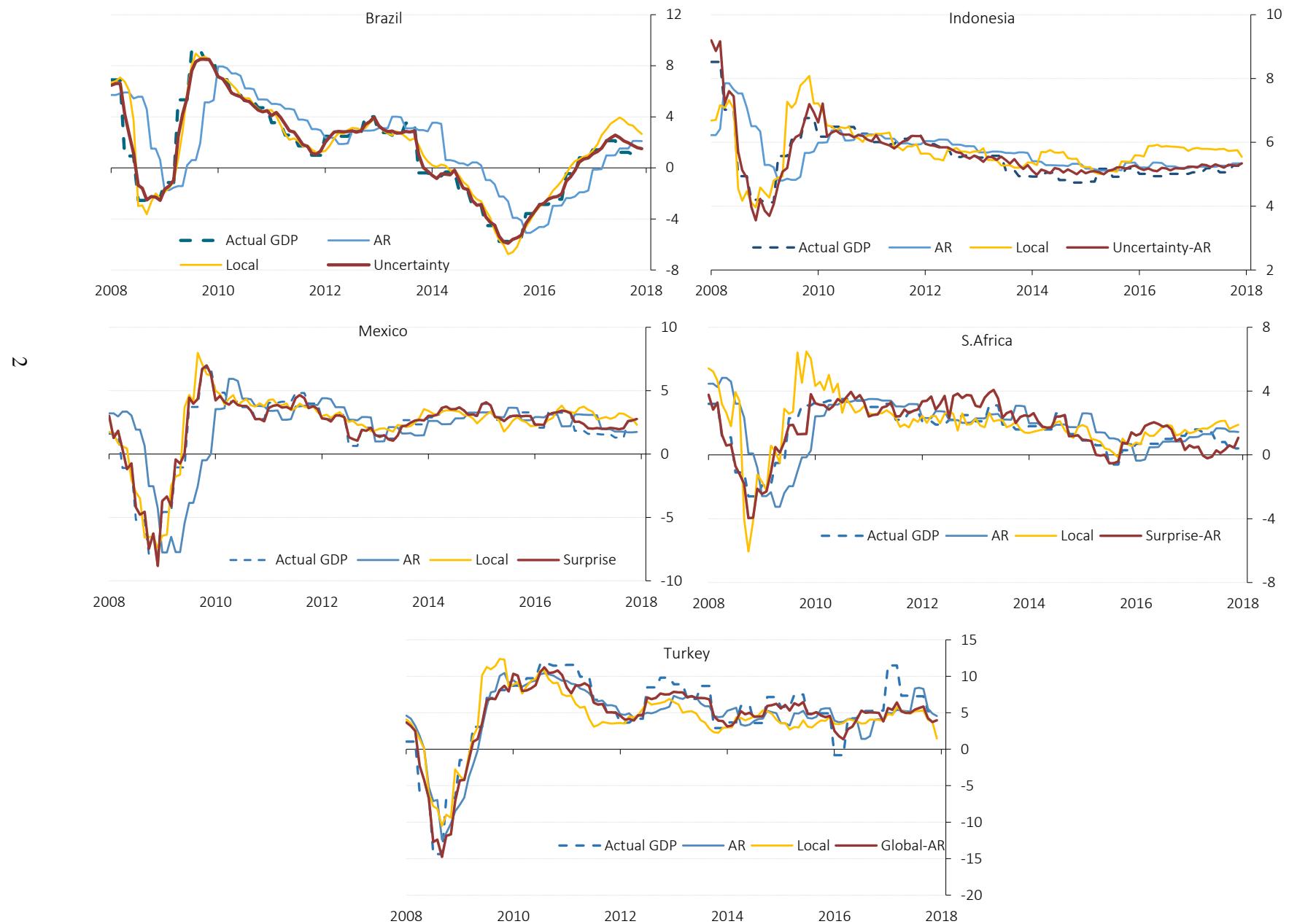
* Oguzhan Cepni (Oguzhan.Cepni@tcmb.gov.tr) and I. Ethem Guney (Ethem.Guney@tcmb.gov.tr), Central Bank of the Republic of Turkey, Anafartalar Mah. Istiklal Cad. No:10 06050 Ulus, Altndag, Ankara, Turkey. Norman R. Swanson (nswanson@econ.rutgers.edu), Department of Economics, 75 Hamilton Street, New Brunswick, NJ, 08901 USA.

1. Supplementary Figures

Figure 1: GDP growth rates plotted against local (country-specific) factors



Figure 2: Comparison of actual GDP growth rates with nowcasts based on an AR benchmark, local factor model and MSFE-best models



2. Data Transformation

Our dataset is a collection of monthly data taken either in levels or monthly YoY rates. To include quarterly YoY GDP data into the model, we construct the modified version of the relation described in Mariano and Murasawa (2003) to link YoY growth to its unobserved monthly equivalent. Let y_t^{MY} , Y_t^Q and Y_t^M denote the monthly unobserved year-over-year GDP growth rate, level of quarterly GDP and unobserved monthly level of GDP, respectively. Following the Giannone et al. (2013), GDP level data for a given quarter can be characterized as the sum of monthly unobserved contributions (i.e., $Y_t^Q = Y_t^M + Y_{t-1}^M + Y_{t-2}^M$). Also, assume that y_t^{MY} obeys the same factor structure as the monthly variables:

$$y_t^{MY} = \Lambda^Q F_t + \xi_t^Q \quad (1)$$

Then, the monthly unobserved YoY rate can be linked to a partially observed quarterly YoY rate using the following:

$$\begin{aligned} y_t^{QY} &= Y_t^Q - Y_{t-12}^Q \\ &= (1 - L^{12})Y_t^Q \\ &\approx (1 - L^{12})(1 + L + L^2)Y_t^M \\ &= (1 + L + L^2)y_t^{MY} \\ &= y_t^{MY} + y_{t-1}^{MY} + y_{t-2}^{MY} \end{aligned} \quad (2)$$

3. Real versus Nominal Variables

In order to explore a comment made by an anonymous referee, we carried out a small experiment in which we specified a nowcasting model that contains only real variables. Results were then compared with those based on the use of both real and nominal variables. The results of the out-of-sample exercise appear in Table A1 below. The main insight of this exercise is that for most of the cases in which prices and nominal variables are excluded, we observe forecast performance improvement, except for Turkey. One reason why including too many financial variables to estimate the factors is detrimental might be that the series are sometimes quite noisy. On the other hand, when we compare the MSFEs of factor model based on the use of only real variables with our MSFE-best models based on the use of different dimension reductions methods (see Table A2 below), we see improvement in the performance of the now-casting model, as compared with the factor model that uses only real variables. These suggest that imposing a sparse structure on the whole

dataset is generally a useful step towards increasing predictive accuracy. A possible explanation for this might be that dimension reduction methods might be delivering a set of real variables plus a limited number of financial variables. However, further exploration of this finding is left to future research. In summary, careful selection of financial variables seems to result in improved forecasting performance. This result is consistent with findings in Bragoli and Fosten (2018), Banbura et al. (2013) and Andreou et al. (2013).

Table A1: MSFEs based on the use of real and nominal variables

	Forecast (h=2)			Forecast (h=1)			Nowcast (h=0)			Backcast (h=-1)	
Brazil	1	2	3	1	2	3	1	2	3	1	
Benchmark-AR	4.43	4.43	4.20	3.85	3.85	3.52	2.99	2.99	2.62	2.62	
Real	0.91	0.83	0.81	0.73	0.63	0.57	0.47	0.31	0.25	0.36	
Real+Nominal	0.96	0.88	0.85	0.77	0.67	0.62	0.50	0.39	0.33	0.43	
Indonesia											
AR	1.07	1.07	1.01	1.05	1.05	0.97	0.80	0.80	0.73	0.73	
Real	0.74	0.71	0.78	0.65	0.60	0.68	0.74	0.73	0.80	1.13	
Real+Nominal	0.83	0.83	0.92	0.72	0.75	0.82	0.76	0.79	0.88	1.16	
Mexico											
Benchmark-AR	4.38	4.38	3.98	3.72	3.72	3.26	2.99	2.99	2.97	2.97	
Real	0.58	0.53	0.52	0.39	0.36	0.35	0.28	0.28	0.39	0.49	
Real+Nominal	0.63	0.53	0.52	0.45	0.38	0.44	0.32	0.30	0.45	0.50	
South Africa											
Benchmark-AR	2.55	2.55	2.38	2.10	2.10	1.90	1.44	1.44	1.30	1.30	
Real	0.86	0.78	1.07	0.79	0.63	0.94	0.60	0.60	0.93	0.91	
Real+Nominal	0.94	0.91	1.10	0.93	0.77	0.90	0.85	0.77	1.01	1.04	
Turkey											
Benchmark-AR	7.21	7.21	6.58	6.63	6.63	5.94	5.48	5.48	4.69	4.69	
Real	0.92	0.69	0.82	0.75	0.56	0.58	0.57	0.57	0.54	0.69	
Real+Nominal	0.68	0.65	0.72	0.62	0.56	0.60	0.56	0.55	0.66	0.67	

Table A2: Comparison of MSFEs based on model using only real variables and MSFE-best models

	Forecast (h=2)			Forecast (h=1)			Nowcast (h=0)			Backcast (h=-1)	
Brazil	1	2	3	1	2	3	1	2	3	1	
Benchmark-AR	4.43	4.43	4.20	3.85	3.85	3.52	2.99	2.99	2.62	2.62	
Real	0.91	0.83	0.81	0.73	0.63	0.57	0.47	0.31	0.25	0.36	
MSFE-Best	0.76	0.73	0.71	0.62	0.54	0.52	0.28	0.14	0.12	0.34	
Indonesia											
Benchmark-AR	1.07	1.07	1.01	1.05	1.05	0.97	0.80	0.80	0.73	0.73	
Real	0.74	0.71	0.78	0.65	0.60	0.68	0.74	0.73	0.80	1.13	
MSFE-Best	0.82	0.83	0.84	0.67	0.68	0.67	0.35	0.36	0.29	0.43	
Mexico											
Benchmark-AR	4.38	4.38	3.98	3.72	3.72	3.26	2.99	2.99	2.97	2.97	
Real	0.58	0.53	0.52	0.39	0.36	0.35	0.28	0.28	0.39	0.49	
MSFE-Best	0.53	0.48	0.48	0.41	0.36	0.42	0.19	0.16	0.18	0.64	
South Africa											
Benchmark-AR	2.55	2.55	2.38	2.10	2.10	1.90	1.44	1.44	1.30	1.30	
Real	0.86	0.78	1.07	0.79	0.63	0.94	0.60	0.60	0.93	0.91	
MSFE-Best	0.74	0.69	0.68	0.58	0.55	0.52	0.50	0.56	0.64	0.67	
Turkey											
Benchmark-AR	7.21	7.21	6.58	6.63	6.63	5.94	5.48	5.48	4.69	4.69	
Real	0.92	0.69	0.82	0.75	0.56	0.58	0.57	0.57	0.54	0.69	
MSFE-Best	0.68	0.64	0.68	0.54	0.50	0.52	0.36	0.35	0.30	0.46	

4. Mean Forecast Errors

Table A3: Forecast bias results based on the use of different dimension reduction and shrinkage methods with added global diffusion indexes

Panel A: Brazil

All Sample	Forecast (h=2)			Forecast (h=1)			Nowcast (h=0)			Backcast (h=-1)	
	1	2	3	1	2	3	1	2	3	1	
AR	-0.72	-0.72	-0.71	-0.62	-0.62	-0.62	-0.53	-0.53	-0.52	-0.37	
Local	-0.26	-0.35	-0.41	-0.29	-0.34	-0.36	-0.27	-0.29	-0.27	0.00	
Uncertainty	-0.17	-0.17	-0.27	-0.24	-0.24	-0.28	-0.26	-0.26	-0.23	0.00	
Suprise	-0.20	-0.27	-0.27	-0.22	-0.26	-0.22	-0.19	-0.21	-0.14	0.07	
Global	-0.09	-0.08	-0.17	-0.15	-0.15	-0.17	-0.16	-0.15	-0.12	0.04	
Local-AR	-0.21	-0.26	-0.30	-0.22	-0.25	-0.26	-0.19	-0.21	-0.18	0.07	
Uncertainty-AR	-0.12	-0.08	-0.15	-0.18	-0.16	-0.17	-0.19	-0.18	-0.12	0.06	
Suprise-AR	-0.20	-0.24	-0.23	-0.21	-0.24	-0.19	-0.19	-0.20	-0.12	0.07	
Global-AR	-0.10	-0.04	-0.12	-0.15	-0.12	-0.13	-0.16	-0.14	-0.09	0.10	
LASSO											
Local	-0.52	-0.67	-0.50	-0.53	-0.61	-0.46	-0.47	-0.51	-0.38	-0.22	
Uncertainty	-0.36	-0.49	-0.53	-0.47	-0.54	-0.55	-0.51	-0.54	-0.50	-0.26	
Suprise	-0.30	-0.51	-0.16	-0.34	-0.43	-0.19	-0.29	-0.32	-0.15	-0.03	
Global	-0.27	-0.40	-0.19	-0.35	-0.41	-0.26	-0.36	-0.37	-0.25	-0.02	
Local-AR	-0.19	-0.35	-0.42	-0.21	-0.30	-0.33	-0.18	-0.21	-0.22	0.07	
Uncertainty-AR	-0.03	-0.17	-0.09	-0.16	-0.23	-0.15	-0.21	-0.23	-0.15	0.03	
Suprise-AR	-0.12	-0.33	-0.37	-0.17	-0.27	-0.29	-0.15	-0.18	-0.18	0.10	
Global-AR	-0.04	-0.16	-0.06	-0.15	-0.20	-0.11	-0.18	-0.19	-0.10	0.06	
AdaLASSO											
Local	-0.47	-0.47	-0.51	-0.43	-0.43	-0.42	-0.34	-0.33	-0.32	-0.07	
Uncertainty	-0.41	-0.39	-0.41	-0.39	-0.36	-0.37	-0.33	-0.31	-0.29	-0.07	
Suprise	-0.43	-0.43	-0.42	-0.38	-0.37	-0.33	-0.28	-0.27	-0.23	-0.02	
Global	-0.30	-0.25	-0.34	-0.29	-0.25	-0.29	-0.24	-0.20	-0.21	0.01	
Local-AR	-0.43	-0.40	-0.41	-0.36	-0.35	-0.33	-0.27	-0.26	-0.24	-0.02	
Uncertainty-AR	-0.34	-0.28	-0.26	-0.31	-0.27	-0.26	-0.25	-0.22	-0.18	0.00	
Suprise-AR	-0.42	-0.39	-0.36	-0.35	-0.34	-0.29	-0.26	-0.25	-0.20	-0.01	
Global-AR	-0.27	-0.18	-0.26	-0.26	-0.19	-0.23	-0.21	-0.17	-0.16	0.05	
Bayesian LASSO											
Local	-0.40	-0.36	-0.37	-0.24	-0.18	-0.21	-0.04	0.03	-0.01	0.16	
Uncertainty	-0.45	-0.43	-0.41	-0.30	-0.26	-0.25	-0.12	-0.06	-0.07	0.07	
Suprise	-0.38	-0.34	-0.36	-0.22	-0.16	-0.20	-0.02	0.05	0.00	0.18	
Global	-0.42	-0.39	-0.38	-0.27	-0.22	-0.23	-0.09	-0.04	-0.05	0.14	
Local-AR	-0.11	-0.09	-0.10	0.00	0.03	0.01	0.13	0.17	0.16	0.32	
Uncertainty-AR	-0.15	-0.15	-0.13	-0.06	-0.04	-0.02	0.05	0.09	0.11	0.25	
Suprise-AR	-0.11	-0.10	-0.12	0.00	0.03	0.00	0.12	0.18	0.15	0.32	
Global-AR	-0.15	-0.13	-0.12	-0.05	-0.02	-0.02	0.07	0.11	0.11	0.26	
Bayesian AdaLASSO											
Local	-0.60	-0.64	-0.58	-0.52	-0.54	-0.48	-0.42	-0.43	-0.36	-0.18	
Uncertainty	-0.60	-0.66	-0.56	-0.51	-0.54	-0.45	-0.42	-0.42	-0.33	-0.18	
Suprise	-0.49	-0.61	-0.48	-0.41	-0.48	-0.36	-0.29	-0.32	-0.22	-0.05	
Global	-0.35	-0.49	-0.35	-0.29	-0.36	-0.22	-0.17	-0.20	-0.09	-0.12	
Local-AR	-0.29	-0.33	-0.30	-0.21	-0.23	-0.20	-0.11	-0.12	-0.08	0.12	
Uncertainty-AR	-0.18	-0.19	-0.10	-0.11	-0.11	-0.04	-0.03	-0.01	0.06	0.21	
Suprise-AR	-0.25	-0.33	-0.23	-0.18	-0.23	-0.14	-0.08	-0.10	-0.02	0.15	
Global-AR	-0.10	-0.18	-0.06	-0.05	-0.09	0.02	0.04	0.04	0.13	0.28	

A mean forecast error (forecast bias) value other than zero suggests a tendency of the model to over-prediction on average (positive error) or under-prediction on average (negative error).

Table A4: Forecast bias results based on the use of different dimension reduction and shrinkage methods with added global diffusion indexes

Panel B: Indonesia

All Sample	Forecast (h=2)			Forecast (h=1)			Nowcast (h=0)			Backcast (h=-1)	
	1	2	3	1	2	3	1	2	3	1	
AR	-0.22	-0.22	-0.21	-0.19	-0.19	-0.18	-0.18	-0.18	-0.17	-0.09	
Local	-0.29	-0.33	-0.35	-0.29	-0.30	-0.36	-0.24	-0.23	-0.29	-0.13	
Uncertainty	-0.75	-0.85	-0.72	-0.74	-0.80	-0.71	-0.63	-0.67	-0.61	-0.53	
Suprise	-0.41	-0.45	-0.42	-0.41	-0.43	-0.43	-0.35	-0.35	-0.37	-0.25	
Global	-0.52	-0.57	-0.50	-0.56	-0.61	-0.54	-0.50	-0.53	-0.48	-0.40	
Local-AR	-0.30	-0.32	-0.32	-0.31	-0.32	-0.33	-0.27	-0.25	-0.28	-0.16	
Uncertainty-AR	-0.65	-0.73	-0.59	-0.64	-0.67	-0.58	-0.52	-0.53	-0.47	-0.43	
Suprise-AR	-0.41	-0.41	-0.39	-0.42	-0.40	-0.40	-0.34	-0.31	-0.33	-0.25	
Global-AR	-0.53	-0.54	-0.47	-0.57	-0.57	-0.50	-0.49	-0.49	-0.43	-0.40	
LASSO											
Local	-0.37	-0.38	-0.35	-0.39	-0.39	-0.37	-0.34	-0.33	-0.33	-0.23	
Uncertainty	-0.80	-0.81	-0.69	-0.80	-0.80	-0.69	-0.68	-0.69	-0.61	-0.59	
Suprise	-0.43	-0.42	-0.38	-0.45	-0.44	-0.41	-0.40	-0.40	-0.37	-0.30	
Global	-0.53	-0.51	-0.42	-0.58	-0.58	-0.47	-0.52	-0.54	-0.44	-0.43	
Local-AR	-0.30	-0.33	-0.30	-0.34	-0.35	-0.34	-0.30	-0.30	-0.30	-0.20	
Uncertainty-AR	-0.70	-0.72	-0.51	-0.69	-0.68	-0.51	-0.57	-0.55	-0.45	-0.47	
Suprise-AR	-0.39	-0.40	-0.34	-0.43	-0.41	-0.38	-0.37	-0.36	-0.35	-0.27	
Global-AR	-0.52	-0.50	-0.39	-0.58	-0.58	-0.45	-0.51	-0.51	-0.42	-0.42	
AdaLASSO											
Local	-0.19	-0.20	-0.23	-0.15	-0.16	-0.19	-0.12	-0.13	-0.14	0.00	
Uncertainty	-0.42	-0.50	-0.44	-0.40	-0.47	-0.42	-0.37	-0.44	-0.37	-0.26	
Suprise	-0.21	-0.26	-0.25	-0.17	-0.20	-0.21	-0.13	-0.16	-0.16	-0.02	
Global	-0.34	-0.37	-0.34	-0.32	-0.34	-0.31	-0.27	-0.31	-0.27	-0.17	
Local-AR	-0.11	-0.11	-0.19	-0.08	-0.06	-0.15	-0.05	-0.03	-0.09	0.07	
Uncertainty-AR	-0.23	-0.21	-0.32	-0.24	-0.21	-0.29	-0.22	-0.20	-0.24	-0.11	
Suprise-AR	-0.16	-0.13	-0.21	-0.10	-0.06	-0.16	-0.05	-0.01	-0.10	0.06	
Global-AR	-0.25	-0.18	-0.30	-0.23	-0.18	-0.26	-0.19	-0.15	-0.20	-0.09	
Bayesian LASSO											
Local	-0.23	-0.22	-0.32	-0.18	-0.17	-0.26	-0.09	-0.05	-0.06	0.00	
Uncertainty	-0.20	-0.20	-0.31	-0.14	-0.14	-0.24	-0.04	-0.01	-0.04	0.06	
Suprise	-0.30	-0.29	-0.38	-0.24	-0.25	-0.32	-0.15	-0.12	-0.12	-0.06	
Global	-0.27	-0.27	-0.39	-0.21	-0.21	-0.30	-0.10	-0.07	-0.09	-0.01	
Local-AR	-0.20	-0.19	-0.23	-0.17	-0.15	-0.19	-0.09	-0.05	-0.09	0.01	
Uncertainty-AR	-0.22	-0.23	-0.27	-0.17	-0.19	-0.22	-0.08	-0.07	-0.10	0.02	
Suprise-AR	-0.26	-0.25	-0.29	-0.23	-0.22	-0.24	-0.15	-0.11	-0.13	-0.05	
Global-AR	-0.30	-0.30	-0.34	-0.25	-0.27	-0.28	-0.15	-0.15	-0.15	-0.06	
Bayesian AdaLASSO											
Local	-0.31	-0.33	-0.34	-0.33	-0.33	-0.34	-0.29	-0.27	-0.29	-0.17	
Uncertainty	-0.52	-0.50	-0.51	-0.59	-0.58	-0.56	-0.56	-0.56	-0.52	-0.47	
Suprise	-0.34	-0.35	-0.33	-0.34	-0.33	-0.33	-0.29	-0.28	-0.28	-0.19	
Global	-0.51	-0.41	-0.40	-0.55	-0.47	-0.44	-0.51	-0.46	-0.41	-0.42	
Local-AR	-0.25	-0.29	-0.27	-0.29	-0.31	-0.29	-0.27	-0.26	-0.27	-0.16	
Uncertainty-AR	-0.41	-0.34	-0.34	-0.49	-0.44	-0.40	-0.47	-0.43	-0.39	-0.38	
Suprise-AR	-0.29	-0.29	-0.25	-0.30	-0.28	-0.27	-0.25	-0.21	-0.23	-0.15	
Global-AR	-0.47	-0.35	-0.32	-0.52	-0.43	-0.36	-0.47	-0.40	-0.35	-0.39	

See notes to Table A3.

Table A5: Forecast bias results based on the use of different dimension reduction and shrinkage methods with added global diffusion indexes

Panel C: Mexico

All Sample	Forecast (h=2)			Forecast (h=1)			Nowcast (h=0)			Backcast (h=-1)	
	1	2	3	1	2	3	1	2	3	1	
AR	-0.01	-0.01	-0.05	0.03	0.03	0.00	0.08	0.08	0.05	0.11	
Local	-0.62	-0.52	-0.47	-0.44	-0.40	-0.37	-0.30	-0.30	-0.29	-0.23	
Uncertainty	-0.88	-0.75	-0.59	-0.58	-0.51	-0.46	-0.38	-0.35	-0.33	-0.31	
Suprise	-0.77	-0.63	-0.60	-0.58	-0.50	-0.49	-0.39	-0.37	-0.37	-0.32	
Global	-0.89	-0.75	-0.62	-0.59	-0.49	-0.48	-0.38	-0.34	-0.35	-0.32	
Local-AR	-0.55	-0.46	-0.42	-0.39	-0.35	-0.33	-0.28	-0.27	-0.26	-0.21	
Uncertainty-AR	-0.80	-0.73	-0.58	-0.55	-0.48	-0.43	-0.36	-0.34	-0.31	-0.30	
Suprise-AR	-0.60	-0.49	-0.46	-0.47	-0.40	-0.38	-0.34	-0.32	-0.31	-0.28	
Global-AR	-0.75	-0.65	-0.53	-0.52	-0.42	-0.41	-0.36	-0.31	-0.31	-0.30	
LASSO											
Local	-0.54	-0.42	-0.44	-0.41	-0.35	-0.37	-0.29	-0.24	-0.26	-0.21	
Uncertainty	-0.64	-0.60	-0.51	-0.41	-0.33	-0.38	-0.26	-0.19	-0.23	-0.19	
Suprise	-0.53	-0.37	-0.44	-0.40	-0.31	-0.36	-0.27	-0.22	-0.26	-0.21	
Global	-0.56	-0.46	-0.50	-0.35	-0.21	-0.31	-0.21	-0.11	-0.19	-0.14	
Local-AR	-0.43	-0.34	-0.40	-0.35	-0.31	-0.34	-0.25	-0.20	-0.24	-0.18	
Uncertainty-AR	-0.56	-0.58	-0.55	-0.39	-0.33	-0.42	-0.24	-0.16	-0.25	-0.18	
Suprise-AR	-0.37	-0.27	-0.38	-0.32	-0.26	-0.32	-0.23	-0.18	-0.23	-0.17	
Global-AR	-0.44	-0.43	-0.50	-0.30	-0.19	-0.33	-0.19	-0.09	-0.20	-0.13	
AdaLASSO											
Local	-0.34	-0.24	-0.27	-0.31	-0.24	-0.27	-0.40	-0.36	-0.34	-0.21	
Uncertainty	-0.70	-0.72	-0.79	-0.56	-0.55	-0.59	-0.39	-0.37	-0.37	-0.32	
Suprise	-0.47	-0.40	-0.56	-0.46	-0.40	-0.48	-0.36	-0.32	-0.35	-0.29	
Global	-0.55	-0.48	-0.73	-0.48	-0.40	-0.55	-0.35	-0.28	-0.35	-0.28	
Local-AR	-0.37	-0.42	-0.51	-0.36	-0.38	-0.42	-0.28	-0.27	-0.29	-0.21	
Uncertainty-AR	-0.57	-0.72	-0.87	-0.50	-0.55	-0.66	-0.37	-0.36	-0.40	-0.30	
Suprise-AR	-0.30	-0.33	-0.54	-0.35	-0.35	-0.44	-0.30	-0.29	-0.31	-0.23	
Global-AR	-0.38	-0.45	-0.75	-0.38	-0.37	-0.56	-0.31	-0.27	-0.35	-0.24	
Bayesian LASSO											
Local	0.43	0.22	0.16	0.10	0.02	0.06	-0.19	-0.16	-0.04	-0.14	
Uncertainty	0.41	0.32	0.16	0.08	0.07	0.06	-0.21	-0.09	-0.04	-0.16	
Suprise	0.43	0.23	0.15	0.10	0.02	0.05	-0.18	-0.14	-0.04	-0.13	
Global	0.39	0.30	0.14	0.07	0.06	0.04	-0.21	-0.09	-0.05	-0.16	
Local-AR	0.93	0.48	0.39	0.43	0.20	0.23	0.03	-0.13	0.07	0.08	
Uncertainty-AR	0.99	0.60	0.44	0.45	0.26	0.25	0.01	-0.10	0.06	0.06	
Suprise-AR	0.90	0.47	0.38	0.41	0.20	0.22	0.02	-0.13	0.06	0.07	
Global-AR	0.95	0.58	0.42	0.43	0.25	0.24	-0.01	-0.11	0.06	0.04	
Bayesian AdaLASSO											
Local	-0.46	-0.43	-0.39	-0.41	-0.39	-0.36	-0.30	-0.27	-0.27	-0.22	
Uncertainty	-0.50	-0.45	-0.44	-0.43	-0.38	-0.41	-0.31	-0.26	-0.28	-0.23	
Suprise	-0.33	-0.29	-0.30	-0.31	-0.29	-0.30	-0.27	-0.24	-0.24	-0.19	
Global	-0.36	-0.29	-0.35	-0.31	-0.24	-0.31	-0.25	-0.19	-0.22	-0.17	
Local-AR	-0.44	-0.44	-0.41	-0.42	-0.39	-0.36	-0.30	-0.26	-0.26	-0.23	
Uncertainty-AR	-0.45	-0.45	-0.48	-0.43	-0.40	-0.41	-0.31	-0.24	-0.27	-0.23	
Suprise-AR	-0.30	-0.29	-0.33	-0.31	-0.29	-0.31	-0.26	-0.22	-0.22	-0.18	
Global-AR	-0.34	-0.33	-0.39	-0.32	-0.26	-0.32	-0.25	-0.17	-0.21	-0.18	

See notes to Table A3.

Table A6: Forecast bias results based on the use of different dimension reduction and shrinkage methods with added global diffusion indexes

Panel D: South Africa

All Sample	Forecast (h=2)			Forecast (h=1)			Nowcast (h=0)			Backcast (h=-1)	
	1	2	3	1	2	3	1	2	3	1	
AR	-0.33	-0.33	-0.33	-0.25	-0.25	-0.25	-0.17	-0.17	-0.18	-0.04	
Local	-0.91	-1.06	-1.36	-0.63	-0.60	-0.76	-0.34	-0.28	-0.39	-0.20	
Uncertainty	-0.90	-0.90	-1.04	-0.44	-0.45	-0.52	-0.22	-0.15	-0.24	-0.09	
Suprise	-0.78	-0.96	-1.43	-0.56	-0.54	-0.83	-0.29	-0.20	-0.40	-0.16	
Global	-0.60	-0.73	-1.09	-0.40	-0.39	-0.60	-0.20	-0.06	-0.27	-0.07	
Local-AR	-0.70	-1.00	-1.42	-0.60	-0.59	-0.73	-0.28	-0.27	-0.34	-0.14	
Uncertainty-AR	-0.55	-0.64	-0.74	-0.36	-0.33	-0.24	-0.14	-0.09	-0.09	0.00	
Suprise-AR	-0.64	-0.92	-1.64	-0.55	-0.55	-0.93	-0.25	-0.19	-0.42	-0.11	
Global-AR	-0.35	-0.51	-0.95	-0.31	-0.28	-0.44	-0.11	0.00	-0.17	0.02	
LASSO											
Local	-1.10	-1.06	-1.25	-0.76	-0.69	-0.88	-0.52	-0.52	-0.55	-0.48	
Uncertainty	-0.81	-0.68	-1.15	-0.56	-0.42	-0.77	-0.37	-0.26	-0.45	-0.30	
Suprise	-1.03	-0.98	-1.27	-0.78	-0.67	-0.94	-0.54	-0.45	-0.59	-0.45	
Global	-0.78	-0.62	-1.09	-0.61	-0.43	-0.78	-0.40	-0.18	-0.44	-0.31	
Local-AR	-0.85	-0.86	-1.16	-0.51	-0.45	-0.76	-0.35	-0.27	-0.42	-0.25	
Uncertainty-AR	-0.61	-0.51	-1.00	-0.34	-0.20	-0.58	-0.25	-0.08	-0.27	-0.13	
Suprise-AR	-0.75	-0.92	-1.20	-0.49	-0.55	-0.85	-0.33	-0.29	-0.48	-0.22	
Global-AR	-0.49	-0.55	-1.02	-0.30	-0.29	-0.65	-0.22	-0.06	-0.32	-0.12	
AdaLASSO											
Local	-1.08	-1.05	-1.24	-0.77	-0.77	-0.95	-0.60	-0.59	-0.79	-0.48	
Uncertainty	-0.61	-0.45	-0.58	-0.43	-0.32	-0.39	-0.37	-0.24	-0.35	-0.23	
Suprise	-1.04	-0.99	-1.08	-0.74	-0.75	-0.76	-0.57	-0.56	-0.59	-0.45	
Global	-0.59	-0.46	-0.74	-0.42	-0.34	-0.60	-0.34	-0.22	-0.58	-0.20	
Local-AR	-1.22	-1.19	-1.29	-0.83	-0.92	-0.92	-0.58	-0.66	-0.65	-0.45	
Uncertainty-AR	-0.94	-0.78	-0.75	-0.63	-0.62	-0.43	-0.41	-0.37	-0.23	-0.19	
Suprise-AR	-0.97	-1.19	-1.36	-0.61	-0.91	-1.08	-0.36	-0.57	-0.93	-0.59	
Global-AR	-0.78	-0.76	-0.74	-0.54	-0.60	-0.45	-0.34	-0.31	-0.30	-0.21	
Bayesian LASSO											
Local	-1.09	-1.05	-1.27	-0.79	-0.70	-0.88	-0.44	-0.56	-0.69	-0.40	
Uncertainty	-1.19	-1.19	-1.31	-0.88	-0.81	-0.93	-0.50	-0.64	-0.75	-0.47	
Suprise	-0.98	-0.97	-1.26	-0.72	-0.65	-0.87	-0.42	-0.56	-0.67	-0.36	
Global	-1.18	-1.21	-1.32	-0.87	-0.84	-0.94	-0.57	-0.72	-0.75	-0.52	
Local-AR	-0.49	-0.41	-0.71	-0.23	-0.19	-0.38	-0.02	-0.09	-0.31	0.04	
Uncertainty-AR	-0.51	-0.41	-0.72	-0.26	-0.17	-0.39	0.00	-0.04	-0.30	0.06	
Suprise-AR	-0.53	-0.42	-0.72	-0.28	-0.19	-0.40	-0.05	-0.10	-0.31	0.03	
Global-AR	-0.58	-0.43	-0.75	-0.33	-0.19	-0.43	-0.06	-0.09	-0.33	0.01	
Bayesian AdaLASSO											
Local	-1.00	-0.74	-1.09	-0.58	-0.39	-0.64	-0.33	-0.28	-0.33	-0.19	
Uncertainty	-1.14	-0.83	-0.97	-0.68	-0.45	-0.60	-0.43	-0.30	-0.31	-0.28	
Suprise	-0.95	-0.67	-1.10	-0.57	-0.34	-0.68	-0.31	-0.22	-0.35	-0.16	
Global	-0.79	-0.77	-1.04	-0.48	-0.44	-0.66	-0.29	-0.18	-0.36	-0.14	
Local-AR	-1.00	-0.67	-1.34	-0.54	-0.33	-0.83	-0.26	-0.24	-0.39	-0.11	
Uncertainty-AR	-1.00	-0.79	-1.11	-0.51	-0.40	-0.71	-0.30	-0.28	-0.32	-0.17	
Suprise-AR	-1.03	-0.63	-1.46	-0.59	-0.24	-0.98	-0.27	-0.09	-0.47	-0.12	
Global-AR	-0.81	-0.86	-1.22	-0.43	-0.49	-0.82	-0.24	-0.19	-0.41	-0.10	

See notes to Table A3.

Table A7: Forecast bias results based on the use of different dimension reduction and shrinkage methods with added global diffusion indexes

Panel E: Turkey

All Sample	Forecast (h=2)			Forecast (h=1)			Nowcast (h=0)			Backcast (h=-1)
	1	2	3	1	2	3	1	2	3	1
AR	0.89	0.78	0.98	0.72	0.64	0.81	0.65	0.59	0.73	0.36
Local	0.11	0.23	0.17	0.49	0.61	0.53	0.92	0.99	0.98	0.70
Uncertainty	0.98	1.28	0.97	1.17	1.35	1.15	1.45	1.56	1.45	1.29
Suprise	0.19	0.26	0.24	0.53	0.63	0.56	0.92	0.98	0.97	0.76
Global	0.86	1.15	0.87	1.06	1.23	1.04	1.35	1.47	1.35	1.21
Local-AR	0.09	0.15	0.10	0.25	0.34	0.28	0.52	0.60	0.56	0.41
Uncertainty-AR	0.64	0.92	0.62	0.61	0.74	0.62	0.77	0.88	0.78	0.67
Suprise-AR	0.25	0.27	0.27	0.37	0.43	0.40	0.58	0.64	0.62	0.50
Global-AR	0.43	0.68	0.46	0.41	0.51	0.45	0.56	0.66	0.61	0.49
LASSO										
Local	0.44	0.54	0.50	0.76	0.91	0.80	1.18	1.31	1.21	0.94
Uncertainty	0.93	1.19	0.95	1.20	1.42	1.15	1.54	1.73	1.49	1.34
Suprise	0.30	0.44	0.38	0.64	0.83	0.70	1.11	1.28	1.13	0.92
Global	0.66	1.03	0.78	1.00	1.32	1.00	1.42	1.69	1.38	1.24
Local-AR	0.57	0.56	0.52	0.62	0.70	0.63	0.79	0.91	0.82	0.67
Uncertainty-AR	0.66	0.84	0.61	0.69	0.86	0.66	0.86	1.05	0.83	0.74
Suprise-AR	0.44	0.46	0.45	0.52	0.63	0.55	0.71	0.86	0.75	0.62
Global-AR	0.35	0.63	0.43	0.44	0.70	0.51	0.66	0.92	0.69	0.56
AdaLASSO										
Local	-0.36	-0.12	-0.26	0.14	0.38	0.20	0.74	0.85	0.80	0.55
Uncertainty	1.14	1.59	1.09	1.51	1.83	1.40	1.81	1.98	1.74	1.71
Suprise	-0.10	0.05	-0.03	0.31	0.47	0.33	0.80	0.87	0.83	0.66
Global	0.88	1.42	0.87	1.34	1.74	1.24	1.72	1.94	1.63	1.63
Local-AR	-0.09	0.04	-0.11	0.13	0.30	0.15	0.45	0.58	0.50	0.37
Uncertainty-AR	0.65	1.04	0.59	0.75	1.00	0.68	0.93	1.10	0.88	0.87
Suprise-AR	0.00	0.09	0.02	0.22	0.35	0.23	0.50	0.61	0.54	0.44
Global-AR	0.32	0.80	0.34	0.51	0.83	0.49	0.75	0.97	0.73	0.71
Bayesian LASSO										
Local	0.23	0.29	0.29	0.34	0.45	0.48	0.55	0.65	0.69	0.24
Uncertainty	0.37	0.50	0.43	0.49	0.66	0.59	0.66	0.81	0.78	0.40
Suprise	0.18	0.25	0.25	0.29	0.41	0.42	0.49	0.60	0.62	0.25
Global	0.29	0.44	0.32	0.41	0.61	0.50	0.61	0.77	0.69	0.37
Local-AR	0.87	0.68	0.58	0.74	0.68	0.64	0.67	0.69	0.69	0.46
Uncertainty-AR	0.91	0.75	0.63	0.77	0.75	0.67	0.69	0.74	0.70	0.48
Suprise-AR	0.90	0.69	0.59	0.74	0.68	0.63	0.66	0.69	0.66	0.47
Global-AR	0.87	0.72	0.57	0.72	0.71	0.61	0.63	0.71	0.64	0.44
Bayesian AdaLASSO										
Local	0.53	0.54	0.54	0.65	0.75	0.73	0.92	1.05	1.02	0.68
Uncertainty	0.75	0.90	0.71	0.79	1.00	0.87	0.99	1.17	1.08	0.74
Suprise	0.50	0.53	0.52	0.63	0.75	0.72	0.93	1.07	1.01	0.69
Global	0.63	0.84	0.57	0.74	1.00	0.79	1.00	1.22	1.03	0.77
Local-AR	0.75	0.60	0.55	0.67	0.67	0.63	0.74	0.84	0.77	0.55
Uncertainty-AR	0.73	0.71	0.56	0.61	0.70	0.63	0.66	0.81	0.72	0.46
Suprise-AR	0.71	0.57	0.54	0.66	0.67	0.63	0.75	0.87	0.77	0.58
Global-AR	0.58	0.61	0.44	0.52	0.68	0.55	0.64	0.84	0.68	0.45

See notes to Table A3.

5. Data List

Table A8: Dataset-Brazil

Number	Ticker	Description
1	2236689 Index	IMF Brazil Unemployment Rate
2	BZJCYTOT Index	Brazil Government Registered Job Creation Total NSA YTD
3	BZMW Index	Brazil Minimum Wage
4	BZGDWGL Index	Brazil Wages and Salaries
5	BRMWRL Index	Brazil Real Minimum Wage
6	BZCCEXUN Index	Brazil CNI Consumer Confidence Expectations on Unemployment
7	BZCCEXIN Index	Brazil CNI Consumer Confidence Income Expectations
8	BZUETAYL Index	BR Unemployment Rate - Taylor Rule
9	BZREOFFR Index	Brazil Sao Paulo Secovi Real Estate Units Offered
10	BZRESTRT Index	Brazil Sao Paulo Secovi Real Estate Units Started
11	BZREPERD Index	Secovi Brazil Real Estate Units Average Sale Time Period
12	BZRESOLD Index	Brazil Sao Paulo Secovi Real Estate Units Sold
13	IBREINCM Index	FGV Brazil IGP-M Construction Prices INCC-M
14	USDBRL Curncy	USDBRL Spot Exchange Rate - Price of 1 USD in BRL
15	EURBRL Curncy	EURBRL Spot Exchange Rate - Price of 1 EUR in BRL
16	JPYBRL Curncy	JPYBRL Spot Exchange Rate - Price of 1 JPY in BRL
17	USDBRLV1M Index	USDBRL 1 Month ATM Implied Volatility
18	USDBRL25R3M Index	USDBRL 3 Month 25 Delta Risk Reversal
19	BISBBRR Index	Brazil Real Effective Exchange Rate Broad
20	IBOV Index	Ibovespa Brasil Sao Paulo Stock Exchange Index
21	WCAUBRAZ Index	Bloomberg Brazil Exchange Market Capitalization USD
22	IFNCBV Index	Brazil Financial Index
23	BZLIQDTY Index	Bovespa Volume Brazil Settlement
24	IBOVIEE Index	Sao Paulo Stock Exchange Electrical Energy Index
25	CBRZ1U5 Curncy	Federative Republic of Brazil
26	BZSTSETA Index	Brazil Selic Target Rate
27	BZTJLP Index	Brazil BNDES Long Term Interest Rate TJLP
28	BZAD1Y Index	Anbima Brazil Govt Bond Fixed Rate 1 Year
29	BZAD2Y Index	Anbima Brazil Govt Bond Fixed Rate 2 Years
30	GEBR5Y Index	Brazil Government Generic Bond 5 Year
31	GEBR10Y Index	Brazil Government Generic Bond 10 Year
32	GEBU10Y Index	Brazil Government Generic Bond 10 Year USD
33	BZLNTOTA Index	Brazil Financial System Loans
34	BZLNPTOT Index	Brazil Financial Private System Loans
35	BZMBMB Index	Brazil Monetary Base
36	BZMS1 Index	Brazil Money Supply M1 Brazil M1
37	BZMS2 Index	Brazil Money Supply M2 Brazil M2
38	BZMS3 Index	Brazil Money Supply M3 Brazil M3

Continued on next page

Table A8 – *Continued from previous page*

Number	Ticker	Description
39	BZMS4 Index	Brazil Money Supply M4 Brazil M4
40	BRCDDEFT Index	Brazil Personal Loans More Than 90 Days Late
41	BZIDINTL Index	Brazil International Daily Reserves
42	BRCCVEHB Index	Brazil Consumer Credit Operations for Vehicle Acquisition
43	BZPIIPCA Index	Brazil CPI IPCA Dec 1993=100
44	BZCILIVE Index	Brazil FIPE CPI Sao Paulo Living
45	BZCIFOOD Index	Brazil FIPE CPI Sao Paulo Food Main
46	BZCIPERS Index	Brazil FIPE CPI Sao Paulo Personal
47	BZCITRAN Index	Brazil CIPE CPI Sao Paulo Transportation
48	IPEAEXIN Index	Brazil IPEA Export Price Index
49	IPEAIMIN Index	Brazil IPEA Import Price Index
50	IBREIPAM Index	FGV Brazil IGP-M Wholesale Prices IPA-M
51	IBREIPA1 Index	FGV Brazil Wholesale Prices IPA-10
52	BZICINDX Index	CNI Brazil Industrial Confidence General
53	BZCCI Index	CNI Brazil Consumer Confidence
54	OLEDBRAZ Index	OECD Brazil Composite Leading Ind. Total Trend Restored Stck
55	OEBRI003 Index	OECD Brazil Cons. Opin. Confidence Composite & OECD Indicators SA amp adj
56	MPMIBRMA Index	Markit Brazil Manufacturing PMI SA
57	BZTBALM Index	Brazil Trade Balance FOB Balance NSA
58	BZTBEXP Index	Brazil Trade Balance FOB Exports
59	BZTBIMPM Index	Brazil Trade Balance FOB Imports NSA
60	BZTWBALW Index	Brazil Trade Balance Weekly Balance
61	BZDPGOD Index	Brazil General Government Net Debt
62	BZDPNDTL Index	Brazil Public Net Debt
63	BZPBPRDM Index	Brazil Public Primary Budget Result
64	BZCACURR Index	Brazil Current Account Monthly
65	BZEDTLEX Index	Brazil External Debt Brazil External Gross Debt
66	BZCA%GDP Index	Brazil Current Account % of GDP Last 12 Months Accumulated
67	BZFDTMON Index	Brazil Foreign Direct Investment Net
68	BZDPNDT% Index	Brazil Public Net Debt % of GDP
69	BSRFTOFD Index	Brazil Total Federal Revenue
70	BZBGEXP Index	Brazil Central Government Total Expenditures
71	BZPBNODM Index	Brazil Public Nominal Budget Result
72	BZBGPRIM Index	Brazil Central Government Primary Budget Surplus/Deficit
73	BZBGNOMI Index	Brazil Central Government Nominal Budget Surplus/Deficit
74	BZIPTLSA Index	Brazil Real Industrial Production SA 2012=100
75	BZIXEXTR Index	Brazil Industrial Production Activity Extractive Industry2012
76	BZASSUBT Index	Brazil Auto Sales Subtotal
77	BZCNCNIS Index	CNI Brazil Manufacture Industry Capacity Utilization SA
78	BZCNSALS Index	CNI Brazil Manufacture Industry Real Sales SA 2006=100
79	BZCNEMPS Index	CNI Brazil Manufacture Industry Employment SA 2006=100

Continued on next page

Table A8 – *Continued from previous page*

Number	Ticker	Description
80	BZCNHOUS Index	CNI Brazil Manufacture Industry Working Hours SA 2006=100
81	BZVPTLVH Index	Anfavea Brazil Vehicle Production
82	BZVTLVH Index	Anfavea Brazil Vehicle Sales Licensed
83	BZVXEXTL Index	Anfavea Brazil Vehicle Exports
84	BZVLTOL Index	Anfavea Brazil Vehicle Sales Licensed Cars
85	BZRTRTSA Index	Brazil Retail Sales Volume SA
86	BZRTCOSA Index	Brazil Retail Sales Volume Construction Materials Index SA
87	BZRTFDSA Index	Brazil Retail Sales Volume Supermarket Food Beverages & Tobacco SA
88	BZRTFURN Index	Brazil Retail Sales Volume Furniture & Domestic Appliance
89	OEBRV008 Index	OECD Brazil Prod. Manufacturing Total Manufacturing SA 2010=100
90	BZEASA Index	Economic Activity GDP SA IBC-BR
91	BZGDCAPX Index	Brazil GDP Qtrly Gross Formation of Fixed Capital SA 1995=100
92	BZGDFAMX Index	Brazil GDP Qtrly Family Consumption SA 1995=100
93	BZGDAGRX Index	Brazil GDP Qtrly Agriculture SA 1995=100
94	BZGDIDTX Index	Brazil GDP Qtrly Industry SA 1990=100
95	BZGDTRNX Index	Brazil GDP Qtrly Transformation Industry SA 1995=100
96	BZGDSERX Index	Brazil GDP Qtrly Services SA 1995=100
97	EHGDBR Index	Brazil Real GDP (Annual YoY %)

Table A9: Dataset-Indonesia

Number	Ticker	Description
1	IDELEMUNE% Index	Indonesia Unemployment Rate
2	IDELEMPL Index	Indonesia Number of People Emp
3	CPNFIDCU Index	BIS Indonesia Credit to Non Fi
4	EHPIID Index	Indonesia Consumer Price Index
5	IDTIBINC Index	Indonesia Business Tendency In
6	IDTIBPRD Index	Indonesia Business Tendency In
7	IDTIBTOT Index	Indonesia Business Tendency In
8	IDTINCGR Index	Indonesia Consumer Tendency In
9	IDTIIRCG Index	Indonesia Consumer Tendency In
10	IDTIHINC Index	Indonesia Consumer Tendency In
11	IDCABAL Index	Indonesia Balance of Payments
12	IDCAPORT Index	Indonesia BOP Financial Accoun
13	IDPUMANU Index	Indonesia Production Utilizati
14	IDPUTOTL Index	Indonesia Production Utilizati
15	IDCGRFY Index	Indonesia GDP Current Prices E
16	IDCGREXY Index	Indonesia GDP Current Prices E
17	IDCGRIMY Index	Indonesia GDP Current Prices E
18	IDCGRGY Index	Indonesia GDP Current Prices E
19	IDCGRHY Index	Indonesia GDP Current Prices P

Continued on next page

Table A9 – *Continued from previous page*

Number	Ticker	Description
20	IDWGCDN Index	Indonesia Wage for Construction
21	IDWGSMN Index	Indonesia Wage for Household Sector
22	IDEHLHOUS Index	Indonesia Property Loans House
23	IDANITEM Index	ANZ Roy Morgan Indonesia Consumer Confidence
24	USDIDR Index	USD-IDR X-RATE
25	JPYIDR Index	JPY-IDR X-RATE
26	CADIDR Curney	CAD-IDR X-RATE
27	USDIDRV1M Index	USD-IDR OPT VOL 1M
28	USDIDR25R3M Index	USD-IDR RR 25D 3M
29	BISBIDR Index	Indonesia Real Effective Exchange Rate
30	WCAUINDO Index	Bloomberg Indonesia Exchange M
31	MXID Index	MSCI INDONESIA
32	JCI Index	JAKARTA COMPOSITE INDEX
33	IDBIRATE Index	Bank Indonesia Reference Interest Rate
34	INDON CDS USD SR 5Y D14 Corp	INDON CDS USD SR 5Y D14
35	BIASINVP Index	BI Indonesian Bank Valuation
36	IDBRLDR Index	Indonesia Bank Ratio - Loan to Deposit Ratio
37	IDBRCAR Index	Indonesia Bank Ratio - Capital Adequacy Ratio
38	IDBRNIM Index	Indonesia Bank Ratio - Net Interest Margin
39	IDBRROA Index	Indonesia Bank Ratio Return on Assets
40	GTIDR1Y Govt	INDONESIA GOVERNMENT
41	GTIDR5Y Govt	INDONESIA GOVERNMENT
42	GTIDR10Y Govt	INDONESIA GOVERNMENT
43	GTUSDID5Y Govt	REPUBLIC OF INDONESIA
44	IDGBFRGN Index	Indonesia Govt Bond Outstanding
45	ELI GIND Index	J.P. Morgan EMBIG Indonesia Sovereign Bond
46	IDBLHOUS Index	Indonesia Outstanding Loans by Household
47	IDBLOTHR Index	Indonesia Outstanding Loans by Non Household
48	IDBLSHOP Index	Indonesia Outstanding Loans by Shop
49	IDWCTOTL Index	Indonesia Working Capital Loan Total
50	IDWCLIO Index	ID Total Working Capital Loans
51	IDWCCONS Index	Indonesia Working Capital Loan Construction
52	IDWCMANU Index	Indonesia Working Capital Loan Manufacturing
53	IDBRNPPLG Index	Indonesia Bank Ratio - Non Performing Loans
54	IDBDTD Index	Indonesia All Commercial Banks Deposits
55	IDBDALLR Index	Indonesia All Commercial Banks Assets
56	IDBDALLF Index	Indonesia All Commercial Banks Liabilities
57	IDM2YOY Index	Indonesia Money Supply M2 YoY
58	IDM1YOY Index	Indonesia Money Supply M1 YoY
59	IDRMR Index	Indonesia Reserve Base Money
60	IDPGDEBT Index	Indonesia Government Portfolio

Continued on next page

Table A9 – *Continued from previous page*

Number	Ticker	Description
61	IDNRIRR Index	Indonesia Net Foreign Assets I
62	IDGFA Index	Indonesia Net International Re
63	IDGFFORC Index	Indonesia International Reserv
64	IDCPIY Index	Indonesia CPI YoY
65	IDCCI Index	Bank Indonesia Consumer Confid
66	MPMIIDMA Index	Nikkei Indonesia Manufacturing
67	IDANCCT Index	ANZ Roy Morgan Indonesia Consu
68	IDANFL1Y Index	ANZ Roy Morgan Indonesia Consu
69	IDANFN1Y Index	ANZ Roy Morgan Indonesia Consu
70	IDEXPY Index	Indonesia Exports YoY
71	IDBALTOL Index	Indonesia Trade Balance
72	IDEXPETY Index	Indonesia Export Oil & Gas YoY
73	IDIMPTLY Index	Indonesia Import Total YoY
74	IDIMPEGY Index	Indonesia Import Oil & Gas YoY
75	IDEDDTOL Index	Indonesia External Debt Total
76	IDEDGI Index	Indonesia External Debt Govern
77	IDMPIYOY Index	Indonesia Industrial/Manufactu
78	ASEAINDO Index	Automotive Production by Indon
79	ASEAINDS Index	Automotive Sales for Indonesia
80	IDVHCLOC Index	Gaikindo Indonesia Motor Vehic
81	IDVHMTLC Index	Asosiasi Industri Sepedamotor
82	IDRSTOTY Index	Indonesia Retail Sales Survey
83	IDCETOTL Index	Indonesia Cement Consumption
84	IDTOTOT Index	Indonesia Tourist Arrivals
85	IDHTTOTL Index	Indonesia Hotel Occupancy Rate
86	OLE3INDO Index	OECD Indonesia Composite Leadi
87	EHGDID Index	Indonesia Real GDP (Annual YoY

Table A10: Dataset-Mexico

Number	Ticker	Description
1	MXR4TTSA Index	Mexico Real GDP by Industry Total SA
2	MXR4CNSA Index	Mexico Real GDP by Industry Construction SA
3	MXR4MFSA Index	Mexico Real GDP by Industry Manufacturing SA
4	MXR4RESA Index	Mexico Real GDP by Industry Wholesale and Retail Trade SA
5	MXGNTTAL Index	Mexico Nominal GDP Total SA
6	MXCACUAC Index	Mexico Nominal Current Account Balance
7	MXSDPRYO Index	Mexico Supply & Demand Private Consumption YoY
8	MXSDPUYO Index	Mexico Supply & Demand Public Consumption YoY
9	MXSDGCFY Index	Mexico Supply & Demand Total SA Annual Change 2008 Pesos
10	MEXHMEXY Index	Mexico House Price Index YoY

Continued on next page

Table A10 – *Continued from previous page*

Number	Ticker	Description
11	MXUEUNSA Index	Mexico Unemployment Rate SA for Workers 15 and Older ENOE
12	MXWICONS Index	Mexico Formal Job Temporary & Permanent Workers Construction
13	MXWIRETL Index	Mexico Formal Job Temporary & Permanent Workers Retail
14	MXWITRCO Index	Mexico Formal Job Temporary & Permanent Workers Transportation & Communication
15	MXWICOSV Index	Mexico Formal Job Temporary & Permanent Workers Commercial Services
16	MXWIMANU Index	Mexico Formal Job Temporary & Permanent Workers Manufacturing
17	MXWITOTL Index	Mexico Formal Job Temporary & Permanent Workers Total
18	MXUETEPT Index	Mexico Employment Rate
19	MXMIMITO Index	Mexico Wages by Manufacturing Industry Total
20	IMEFMNOR Index	Mexico Manufacturing Index New Orders SA
21	IMEFNMNO Index	Mexico Non Manufacturing Index New Orders SA
22	MXBLMORT Index	Mexico Bank Lending Mortgages
23	MXCSBUIL Index	Mexico Construction Spending Buildings
24	USDMXN Index	USDMXN Spot Exchange Rate - Price of 1 USD in MXN
25	JPYMXN Index	JPYMXN Spot Exchange Rate - Price of 1 JPY in MXN
26	CADMXN Curncy	CADMXN Spot Exchange Rate - Price of 1 CAD in MXN
27	USDMXNV1M Index	USDMXN 1 Month ATM Implied Volatility
28	USDMXN25R3M Index	USDMXN 3 Month 25 Delta Risk Reversal
29	BISBMXR Index	Mexico Real Effective Exchange Rate Broad
30	WCAUMEX Index	Bloomberg Mexico Exchange Market Capitalization USD
31	MEXBOL Index	Mexican Stock Exchange Mexican Bolsa IPC Index
32	MXONBR Index	Bank of Mexico Official Overnight Rate
33	MEX CDS USD SR 5Y D14 Corp	United Mexican States
34	MXFRCINR Index	BOM Government Funding Rate Closing Interest Rate
35	MPTBF CMPN Curncy	MXN T-BILL 6 MO
36	MPTB1 CMPN Curncy	MXN T-BILL 1 YR
37	GMXN02YR Index	Mexico Generic 2 Year
38	GMXN05YR Index	Mexico Generic 5 Year
39	MXLCLFCB Index	Mexico Loans from Commercial Banks
40	MXLCMOLO Index	Mexico Mortgage Loans
41	MXLCCOLO Index	Mexico Consumption Loans
42	MXBDNPLR Index	Mexico Non-Performing Loans as % of Total Loans
43	MXLCEXSE Index	Mexico External Sector
44	MXBLCNST Index	Mexico Bank Lending Construction
45	MXBLMAIN Index	Mexico Bank Lending Manufacturing Industry
46	MXBLFFAF Index	Mexico Bank Lending Farming Forestry and Fishing
47	MXBLSAOA Index	Mexico Bank Lending Services and Other Activities
48	MXDFCCONS Index	Mexico Private Sector Direct Financing Total
49	MXBLPERF Index	Mexico Bank Lending Performing Loans
50	MXBLNONB Index	Mexico Bank Lending Performing Loans for Non Bank Financial
51	MXMB Index	Mexico Monetary Base Money Base

Continued on next page

Table A10 – *Continued from previous page*

Number	Ticker	Description
52	MXMSM1 Index	Mexico Money Supply M1-M4 M1 Total
53	MXMSM2 Index	Mexico Money Supply M1-M4 M2 Total
54	MXMSM3 Index	Mexico Money Supply M1-M4 M3 Total
55	MXMSM4 Index	Mexico Money Supply M1-M4 M4 Total
56	MXDEINT Index	Mexico Federal Government Net Domestic Debt in Millions of Mexican Pesos
57	MXDEEXT Index	Mexico Public Sector Net External Debt in Millions of U.S. Dollars
58	MXERBUDD Index	Mexico Public Rev & Expend Budgetary Deficit YTD
59	MXIRINUS Index	Mexico International Reserves in USD
60	MXDBPDDV Index	Mexico Development Banks Total Public Demand Deposits Volume
61	MXDBPTDV Index	Mexico Development Banks Total Public Time Deposits Volume
62	2735E55 Index	IMF Mexico Financial Corp Deposits
63	MXPII Index	Mexico Producer Price Index
64	MFGSMANU Index	Mexico Fin Gds & Svcs Secondary Sector Manufacturing 2012
65	MFGSCONS Index	Mexico Fin Gds & Svcs Secondary Sector Construction 2012
66	MXPIIXO Index	Mexico Producer Price Index Ex Oil
67	MFGSMINE Index	Mexico Fin Gds & Svcs Primary Sector Mining 2012
68	MFGSELGA Index	Mexico Fin Gds & Svcs Tertiary Water Electricity and Gas 2012
69	MPPRIMPT Index	Mexico International Trade Import Price NSA 1980=100
70	MPPREXPT Index	Mexico International Trade Export Price NSA 1980=100
71	MXCPI Index	Mexico CPI
72	MXCCCORE Index	Mexico Core CPI
73	MXCNFDAT Index	Mexico CPI Index 2010=100 Food Drinks and Tobacco
74	MXCNNFGD Index	Mexico CPI Index 2010=100 Non Food Goods
75	MXCNNSERV Index	Mexico CPI Index 2010=100 Services
76	MXCNAGRI Index	Mexico CPI Index 2010=100 Agriculture
77	MXCNERAG Index	Mexico CPI Index 2010=100 Energy Rates Auth by Govt
78	MXCIHOUS Index	Mexico CPI by Expenditure Housing
79	IMEFMAIN Index	Mexico Manufacturing Index SA
80	IMEFNMIN Index	Mexico Non Manufacturing Index SA
81	IMEFMPRO Index	Mexico Manufacturing Index Production SA
82	SCMXPROI Index	Mexico Producer Confidence Indicator SA
83	MXMAAITR Index	Mexico Manufacturing Aggregate Trend Indicator
84	MXMAEXPT Index	Mexico Manufacturing Aggregate Trend Indicator Exports
85	MXMAMNOR Index	Mexico Manufacturing Aggregate Orders Indicator Manufacturing Orders SA
86	CSMXCONU Index	MX Consumer Confidence Index SA
87	CSMXPOSU Index	Mexico Compared Economic Situation with a Year Ago at Present SA
88	MXCLYLEA Index	Mexico Leading Indicator YoY
89	MXCLSALE Index	Mexico Seasonally Adjusted Leading Indicator
90	MXCLSACO Index	Mexico Seasonally Adjusted Coincident Indicator
91	MXTBBEXP Index	Mexico Trade Balance Exports Monthly Total USD Million
92	MXOTAMER Index	Petroleos Mexicanos (Pemex) Crude Oil Mexico Trade Data/Americas

Continued on next page

Table A10 – *Continued from previous page*

Number	Ticker	Description
93	MXOTEURO Index	Petroleos Mexicanos (Pemex) Crude Oil Mexico Trade Data/Europe
94	MXEXPETR Index	Mexico Nominal Current Account Balance
95	MXEXNONP Index	Mexico Exports by Sector Non Petroleum Mexico Exports Monthly Total USD Million
96	MXRETOT\$ Index	Mexican Remittances Money Sent from Workers Outside Mexico
97	IGAEINDX Index	Mexico Indicator of Economic Activity Index SA
98	IGAEPADI Index	Mexico Economic Activity Primary Activities Series Index SA
99	MINVCNST Index	Mexico Capital Investment Construction
100	MXPSTOTL Index	Mexico Industrial Production Total Seasonally Adjusted
101	MXPSOGSA Index	Mexico Industrial Production Oil and Gas Extraction Seasonally Adjusted
102	MXPSELEC Index	Mexico Industrial Production Utilities Seasonally Adjusted
103	MXPSCONS Index	Mexico Industrial Production Construction Seasonally Adjusted
104	MXPSMANF Index	Mexico Industrial Production Manufacturing Seasonally Adjusted
105	MXSATOTL Index	Mexico Antad Same-Store Sales Overall YoY%
106	MXSLMOGA Index	Mexico Gasoline Sales Monthly
107	MXSLDIES Index	Mexico Diesel Sales Monthly
108	MXMNMCEQ Index	Mexico Capacity Utilization Manufacture of Machinery and Equipment
109	MXMNPECO Index	Mexico Capacity Utilization Manufacture of Petroleum Products and Coal
110	MXVPTOTL Index	Mexico Vehicle Production Total Production
111	MXWRTWHO Index	Mexico Wholesale/Retail Sale Totl Whole
112	MXVHTOTL Index	Mexican Vehicle Sales Auto+truck NSA
113	MXVETOTL Index	Mexican Vehicle Exports Total
114	MDPCSAIN Index	Mexico Total Season Adjusted Index Base 2008
115	MINVTOSA Index	Mexico Gross Fixed Inv Total Seasonally Adjusted
116	EHGDMX Index	Mexico Real GDP (Annual YoY %)

Table A11: Dataset-South Africa

Number	Ticker	Description
1	SAUEQEMP Index	South Africa Labour- Employed
2	SAUEQABS Index	South Africa Labour - Labor Absorption Rate
3	SAUEQPRT Index	South Africa Labour - Labor Force Participation Rate
4	SAUEQNLF Index	South Africa Labour - Not in the Labor Force
5	EHUPZA Index	South Africa Unemployment Rate (%)
6	SACWC Index	South Africa Consumer Confidence
7	SACWE Index	South Africa Consumer Confidence Economic Position in Next 12m
8	SACWF Index	South Africa Consumer Confidence Financial Position During Next 12m.
9	SACTLVL Index	South Africa Current Account SA
10	SACTMEX Index	South Africa Current Account SA - Merchandise Exports Free on Board
11	SACTGEX Index	South Africa Current Account SA - Net Gold Exports
12	SACTLMI Index	South Africa Current Account SA - Less Merchandise Imports
13	SACTCTR Index	South Africa Current Account SA - Current Transfers Net Receipts

Continued on next page

Table A11 – *Continued from previous page*

Number	Ticker	Description
14	SACUI Index	South Africa Utilization of Production Capacity
15	SABTHDIQ Index	South Africa Household Debt to Disposable Income of Households
16	SAGNDISA Index	South Africa Nominal Household Disposable Income SA
17	SADXFCFR Index	South Africa Real GDP Gross Fixed Capital Formation SA
18	SASGAGR Index	South Africa Agriculture SA Constant Prices
19	SASGMINE Index	South Africa Mining SA Constant Prices
20	SASGMANU Index	South Africa Manufacturing SA Constant Prices
21	SASGELEC Index	South Africa Electricity SA Constant Prices
22	SASGCON Index	South Africa Construction sa constant 2000 prices
23	SASGWRH Index	South Africa Wholesale Retail Hotels SA Constant Prices
24	SADXRGSA Index	South Africa Real GDP Expenditure on GDP
25	SATCTREM Index	Trade Activity Index Employment
26	SAPME Index	South Africa Barclays PMI Employment SA
27	SATCTRBL Index	Trade Activity Index Backlog on Orders
28	SATCTEBL Index	Trade Expectations Index Backlog on Orders
29	SATCTRNO Index	Trade Activity Index New Orders
30	SATCTENO Index	Trade Expectations Index New Orders
31	SACSPSTO Index	SA Recorded Building Plans Total SA
32	SACSPSRB Index	SA Recorded Building Plans Residential Buildings SA
33	SACSPSNR Index	SA Recorded Building Plans Non-Residential Buildings SA
34	SACSPSAA Index	SA Recorded Building Plans Additions and Alterations SA
35	SACSCSTO Index	SA Completed Buildings Recorded Total SA
36	SACSCSRB Index	SA Completed Buildings Recorded Residential Buildings SA
37	SACSCSNR Index	SA Completed Buildings Recorded Non-Residential Buildings SA
38	SACSCSAA Index	SA Completed Buildings Recorded Additions and Alterations SA
39	ZAR Curncy	USDZAR Spot Exchange Rate - Price of 1 USD in ZAR
40	EURZAR Curncy	EURZAR Spot Exchange Rate - Price of 1 EUR in ZAR
41	GBPZAR Curncy	GBPZAR Spot Exchange Rate - Price of 1 GBP in ZAR
42	JPYZAR Curncy	JPYZAR Spot Exchange Rate - Price of 1 JPY in ZAR
43	TRYZAR Curncy	TRYZAR Spot Exchange Rate - Price of 1 TRY in ZAR
44	USDZARV1M Index	USDZAR 1 Month ATM Implied Volatility
45	USDZAR25R3M Index	USDZAR 3 Month 25 Delta Risk Reversal
46	BISBZAR Index	South Africa Real Effective Exchange Rate Broad
47	TOP40 Index	FTSE/JSE Africa Top40 Tradeable Index
48	JFINX Index	FTSE/JSE Africa Financials Index
49	JBIND Index	FTSE/JSE Africa Basic Materials Index
50	JGIND Index	FTSE/JSE Africa Industrials Index
51	JGOLD Index	FTSE/JSE Africa Gold Mining Index
52	WCAUSAF Index	Bloomberg South Africa Exchange Market Capitalization USD
53	JALSH Index	FTSE/JSE Africa All Share Index
54	REPSOU CDS USD SR 5Y D14 Corp	Republic of South Africa

Continued on next page

Table A11 – *Continued from previous page*

Number	Ticker	Description
55	SARPRT Index	South Africa Repo Avg Rate
56	GSAB2YR Index	South Africa Govt Bonds 2 Year Note Generic Bid Yield
57	GSAB3YR Index	South Africa Govt Bonds 3 Year Note Generic Bid Yield
58	GSAB5YR Index	South Africa Govt Bonds 5 Year Note Generic Bid Yield
59	GSAB10YR Index	South Africa Govt Bonds 10 Year Note Generic Bid Yield
60	SALQCMPI Index	South Africa Liquidations Cos
61	SACEI Index	South Africa Private Credit Extension
62	SACEINV Index	South Africa Private Credit Extension Investments
63	SACEMORT Index	South Africa Private Credit Extension Mortgage Advances
64	SACELEAS Index	South Africa Private Credit Extension Leasing Finance
65	SACELOAN Index	South Africa Private Credit Extension Total Loans and Advances
66	SACESALE Index	South Africa Private Credit Extension Installment Sales Credit
67	SACEHOUS Index	South Africa Private Credit Extension Of Which To Households
68	SAMYSAM3 Index	South Africa Money Supply M3 Seasonally Adjusted
69	SAMYM1 Index	South Africa Money Supply M1
70	SAMYM2 Index	South Africa Money Supply M2
71	SAMYM0 Index	South Africa Money Supply M0
72	199.055 Index	IMF South Africa Foreign Exchange Reserves in Millions of USD
73	SANOGOL\$ Index	South Africa Gold Reserves
74	SANOGR\$ Index	South Africa Gross Reserves
75	1995E55 Index	IMF South Africa Deposits in Rand
76	SACPI Index	South Africa CPI 2012=100
77	SABCI Index	SACCI South Africa Business Confidence
78	SAPMI Index	South Africa Barclays SA
79	SAPMIPP Index	South Africa Barclays PMI Prices NSA
80	SCP8COUN Index	South Africa CPI For Total Country NSA
81	SCP8EPNY Index	South Africa Ex Food NAB Petrol & Energy YoY
82	SCP8EENR Index	South Africa Ex Energy
83	MPMIZAWA Index	Standard Bank South Africa PMI SA
84	SACBLI Index	Composite Business Cycle Indicator - Leading Indicator
85	SACBLG Index	Composite Business Cycle Indicator - Lagging Indicator
86	SACBCI Index	Composite Business Cycle Indicator - Coincident Indicator
87	SANOFP\$ Index	South Africa Net Open Foreign Currency Position
88	SABBAL Index	South Africa Budget Summary National Budget Balance
89	SATBAL Index	South Africa Trade Balance Incl Oil Arms & Bullion
90	SATEBX Index	South Africa Trade Balance Exports Incl Oil Arms & Bullion
91	SATBEOTH Index	South Africa Trade Export Other Gd
92	SATBIM Index	South Africa Trade Balance Imports Incl Oil Arms & Bullion
93	SABBEXP Index	South Africa Budget Summary National Expenditures
94	SABBREV Index	South Africa Budget Summary National Revenue
95	NAAMTTMS Index	NAAMSA South Africa Total Market Sales Level

Continued on next page

Table A11 – *Continued from previous page*

Number	Ticker	Description
96	SARSTCSA Index	South Africa Retail Sales Total Sales Constant Prices SA 2012=100
97	SASRGEN Index	South Africa Retail Trade Sales Constant 2012 Prices General
98	SATWCOS Index	South Africa Wholesale Trade Constant 2000 Prices SA
99	SFMPPET Index	South Africa Manufacturing Production SA 2005=100 Petroleum Chemical Prod
100	SFPMI Index	South Africa Manufacturing Production SA 2010=100
101	SFMPFB Index	South Africa Manufacturing Production SA 2005=100 Food & Beverages
102	SFMPTCF Index	South Africa Manufacturing Production SA 2005=100 Textile Leather Footwear
103	SFMPMVP Index	South Africa Manufacturing Production SA 2005=100 Parts & Other Transport Equip
104	SAMSTGSA Index	South Africa Mining Sales Total Including Gold SA
105	SAMPGDSY Index	South Africa Mining Production Volume Gold SA YoY
106	SAMPTTSY Index	South Africa Mining Production Volume Total Inc Gold SA YoY
107	SAPW09Y Index	South Africa Electricity Production Index Year on Year %
108	SAPW08Y Index	South Africa Electricity Consumption Year on Year %
109	EHGDZA Index	South Africa Real GDP (Annual YoY %)

Table A12: Dataset-Turkey

Number	Ticker	Description
1	TULSUR Index	Turkey Labor Statistics Unemployment Rate SA
2	TULSER Index	Turkey Labor Statistics Employment Rate SA
3	TULSCO Index	Turkey Labor Statistics Employment in Construction SA
4	TULSSER Index	Turkey Labor Statistics Employment in Services SA
5	TULSIN Index	Turkey Labor Statistics Employment in Industry SA
6	TULSAGRI Index	Turkey Labor Statistics Employment in Agriculture SA
7	TULSLPAR Index	Turkey Labor Statistics Labor Participation Rate SA
8	TULSNO Index	Turkey Labor Statistics Non Agricultural Unemployment Rate SA
9	TULSYOU Index	Turkey Labor Statistics Youth Unemployment Rate SA
10	TUPYUK1 Index	Turkey Non-Residents Holdings of Equity Stock
11	TUPYUK2 Index	Turkey Non-Residents Holdings Government Domestic Debt Securities (GDSS) Stock
12	USDTRY Index	USDTRY Spot Exchange Rate - Price of 1 USD in TRY
13	EURTRY Index	EURTRY Spot Exchange Rate - Price of 1 EUR in TRY
14	JPYTRY Curncy	JPYTRY Spot Exchange Rate - Price of 100 JPY in TRY
15	USDTRYV1M Index	USDTRY 1 Month ATM Implied Volatility
16	USDTRY25R3M Index	USDTRY 3 Month 25 Delta Risk Reversal
17	CPIXBREX Index	Turkey Real Effective Exchange Rate (2003=100) CPI
18	XU100 Index	Borsa Istanbul 100 Index
19	XBANK Index	Borsa Istanbul Banks Sector Index
20	XUSIN Index	Borsa Istanbul Industrials Sector Index
21	WCAUTURK Index	Bloomberg Turkey Exchange Market Capitalization USD
22	CTURK1US Curncy	Republic of Turkey
23	TUBRONRA Index	Turkey Overnight Lending Rate Announcement

Continued on next page

Table A12 – *Continued from previous page*

Number	Ticker	Description
24	TUBROBRA Index	Turkey Overnight Borrowing Rate Announcement
25	IECM2Y Index	Turkish Government Bond 2Y Compound Yield
26	TUBOL54 Index	Turkey Banks Balance Sheet Deposits - Residents in Dollars (\$)
27	WAIRCASH Index	Weighted Average Interest Rates for Turkish Banks Loans - Cash
28	WAIRVEHI Index	Weighted Average Interest Rates for Banks Loans - Vehicles
29	WAIRHOUS Index	Weighted Average Interest Rates for Banks Loans - Housing
30	WAIRCOMM Index	Weighted Average Interest Rates for Banks Loans - Commercial
31	GTRU2YR Index	USD Turkey Govt Bond Generic Bid Yield 2 Year
32	GTRU5YR Index	USD Turkey Govt Bond Generic Bid Yield 5 Year
33	GTRU10YR Index	USD Turkey Govt Bond Generic Bid Yield 10 Year
34	TBRDELT Index	Export Loans - Total
35	TBRDWCLT Index	Working Capital Loans - Total
36	TBRDTLTL Index	Total Loans
37	TUCRTOTL Index	Turkey Consumer Loans Total
38	DPMLAUTO Index	Deposit Money Banks Loans Private Sector - Automobile
39	DPMLINCC Index	Deposit Money Banks Loans Private Sector - Individual Credit Cards
40	DPMLHOUS Index	Deposit Money Banks Loans Private Sector - Housing
41	DPMLCOOT Index	Deposit Money Banks Loans Private Sector - Consumer & Other
42	TUNMM1 Index	Turkey Money Supply M1
43	TUNMM2 Index	Turkey New Money Supply M2
44	TUNMM3 Index	Turkey New Money Supply M3
45	TUNMTDTR Index	Turkey Money Supply Time Deposits TRY
46	TUNMSDFX Index	Turkey Money Supply Sight Deposits FX
47	TUNMSDTR Index	Turkey Money Supply Sight Deposits TRY
48	TUNMTDFX Index	Turkish Money Supply Time Deposits FX
49	TBRDLOAN Index	Turkey SME Loans Total
50	TURWL Index	Turkey Gross Foreign Exchange Reserves (Weekly)
51	TUDPPI Index	Turkey Domestic PPI
52	TUDPC Index	Turkey Domestic PPI Manufacturing
53	TUDPB Index	Turkey Domestic PPI Mining & Quarrying
54	TUDP6 Index	Turkey Domestic PPI Crude Petroleum & Natural Gas
55	TUDP10 Index	Turkey Domestic PPI Food Products YoY
56	TUDP29 Index	Turkey Domestic PPI Motor Vehicles Trailers & Semi-Trailers
57	TUDP25 Index	Turkey Domestic PPI Fabricated Metal Products Except Machinery & Equipment
58	TUCPI Index	Turkey CPI
59	TUCPF Index	Turkey CPI Food & Non Alcoholic Beverages
60	TUCPH Index	Turkey CPI Housing Water Electricity Gas & Other Fuels
61	TUCPHO Index	Turkey CPI Hotels Cafes & Restaurants
62	TUCPFH Index	Turkey CPI Furnishings Household Equipment & Routine House Maintenance
63	TUCPR Index	Turkey CPI Recreation & Culture
64	TUCXSG Index	Turkey CPI Ex Seasonal Goods

Continued on next page

Table A12 – *Continued from previous page*

Number	Ticker	Description
65	TUCXEF Index	Turkey CPI Ex Energy Food Non Alcoholic Bev Alcoholic Bev Tobacco & Gold
66	TUCOGY2S Index	Turkey Real Sector Confidence Index Volume of Orders (Current Situation) SA
67	TUCOGY3S Index	Turkey Real Sector Confidence Stocks of Finished Goods (Current Situation) SA
68	TUCOGY7S Index	Turkey Real Sector Confidence Index Export Orders (Next 3 Months) SA
69	TUCOREAL Index	Turkey Conf IndxReal Sect
70	TUCDCONF Index	Consumer Confidence
71	TUCOGY1S Index	TU Real Sector Confidence SA
72	TUCOGY9S Index	TU Business Situation SA
73	MPMITRMA Index	Markit Turkey Manufacturing PMI
74	TUCALVLP Index	Turkey Balance of Payments Portfolio Investment 12M YoY Level Change USD
75	TUCADIT Index	Turkey Balance of Payments Direct Investment in Turkey
76	TUDDTOTL Index	Turkey Domestic Debt Position Total
77	TUBTREV Index	Turkey Budget Deficit Revenue
78	TUTBEX Index	Turkey Trade Exports WDA
79	TUTBIM Index	Turkey Trade Imports WDA
80	ECOCTRN Index	Turkey Current Account Balance (Billion USD) NSA
81	TUKVDB17 Index	Turkey Short Term External Debt Stock
82	TUCSET Index	Turkey Motor Vehicle Industry Export Total
83	TUCSEP Index	Turkey Motor Vehicle Industry Export Passenger Cars
84	E50DGTR Index	EU Ind Prod Durable Consumer Goods Turkey SWDA
85	E50IGTR Index	EU Ind Prod Intermediate Goods Turkey SWDA
86	E50KGTR Index	EU Ind Prod Capital Goods Turkey SWDA
87	TUIOMT Index	Turkey Industrial Production Manufacturing 2010=100
88	TUINTURN Index	Turkey Industry Turnover 2010=100
89	TUIOSA Index	Turkey Industrial Production SWDA 2010=100
90	TUIOST Index	Turkey Industrial Production Mining 2010=100
91	TUIOET Index	Turkey Industrial Production Electricity 2010=100
92	TYCOLEVS Index	Turkey Capacity Utilization SA
93	TUCSPT Index	Turkey Motor Vehicle Industry Production Total
94	TUCSMT Index	Turkey Motor Vehicle Industry Sales Total
95	TUCSMP Index	Turkey Motor Vehicle Industry Sales Passenger Cars
96	TUTOARTO Index	Turkey Tourism Arriving Visitors Total
97	EHBBTR Index	Turkey Budget Balance (% GDP)
98	EHCATR Index	Turkey Current Account Balance (% GDP)
99	TUQRRESY Index	Turkey GDP at Constant Prices Final Consumption Expenditure of Residents YoY
100	TUQRGFY Index	Turkey Real GDP Imports of Goods and Services WDA YoY
101	TUQRIMY Index	Turkey GDP Transportation & Storage Constant Prices SWDA
102	TUGPIGDY Index	Turkey Real GDP (Annual YoY %)

Table A13: Uncertainty indices

Number	Ticker	Description
1	EPUCCUSM Index	US Economic Policy Uncertainty Composite Index
2	EPUCTRAD Index	US Categorical Economic Policy Uncertainty Trade Policy
3	EPUCEUM Index	European Economic Policy Uncertainty Composite Index
4	EPUCNUSM Index	US Economic Policy Uncertainty Index
5	EPUCUK Index	United Kingdom Economic Policy Uncertainty Index
6	EPUCMONE Index	US Categorical Economic Policy Uncertainty Monetary Policy
7	EPUCIT Index	Italy Economic Policy Uncertainty Index
8	CONSHOMS Index	UMich Buying Conditions for Houses: Uncertain
9	EPUCJP Index	Japan Economic Policy Uncertainty
10	EPUCBRAZ Index	Brazil Economic Policy Uncertainty
11	EPUCAUST Index	Australia Economic Policy Uncertainty
12	EPUCDE Index	Germany Economic Policy Uncertainty
13	EPUCFR Index	France Economic Policy Uncertainty
14	SBOIUNCR Index	NFIB Small Business Uncertainty
15	EPUCFINR Index	US Categorical Economic Policy Uncertainty Financial Regulation
16	EPUCNINM Index	India Economic Policy Uncertainty Index
17	EPUCTAX Index	US Categorical Economic Policy Uncertainty Taxes
18	EPUCGOVT Index	US Categorical Economic Policy Uncertainty Government Spending
19	EPUCSP Index	Spain Economic Policy Uncertainty Index
20	EPUCCCTGR Index	US Categorical Economic Policy Uncertainty
21	EPUCNATL Index	US Categorical Economic Policy Uncertainty National Security
22	EPUCFISC Index	US Categorical Economic Policy Uncertainty Fiscal Policy
23	EPUCCAND Index	Canada Economic Policy Uncertainty Index
24	EPUCSWED Index	Sweden Economic Policy Uncertainty
25	FEPUUSE Index	USA Migration Economic Policy Uncertainty Index
26	FEPUGEE Index	Germany Migration Economic Policy Uncertainty Index
27	EPUCKSKOR Index	South Korea Economic Policy Uncertainty
28	EPUCENTI Index	US Categorical Economic Policy Uncertainty Entitlement Programs
29	EPUCREGU Index	US Categorical Economic Policy Uncertainty Regulation
30	EPUCRU Index	Russia Economic Policy Uncertainty
31	EPUCNL Index	Netherlands Economic Policy Uncertainty
32	CONSDURS Index	UMich Buying Conditions for Large Household Durables: Uncertain
33	EPUCCCHIL Index	Chile Economic Policy Uncertainty
34	EPUCIREL Index	Ireland Economic Policy Uncertainty
35	FEPUFRE Index	France Migration Economic Policy Uncertainty Index
36	FEPUGBE Index	UK Migration Economic Policy Uncertainty Index
37	http://www.policyuncertainty.com/	Japan Categorical Fiscal Policy Uncertainty Index
38	http://www.policyuncertainty.com/	Japan Categorical Monetary Policy Uncertainty Index
39	http://www.policyuncertainty.com/	Japan Categorical Trade Policy Uncertainty Index
40	http://www.policyuncertainty.com/	Japan Categorical Exchange Rate Policy Uncertainty Index

Continued on next page

Table A13 – *Continued from previous page*

Number	Ticker	Description
41	http://www.policyuncertainty.com/	US Equity Market Uncertainty Index
42	http://www.policyuncertainty.com/	Mexico Economic Policy Uncertainty
43	http://www.policyuncertainty.com/	Hong Kong Economic Policy Uncertainty
44	http://www.policyuncertainty.com/	China Economic Policy Uncertainty
45	http://www.policyuncertainty.com/	Singapore Economic Policy Uncertainty

Table A14: Surprise indices

Number	Ticker	Description
1	GSERMEM Index	Goldman Sachs MAP Economic Surprise Index - EM
2	CESICNY Index	Citi Economic Surprise Index - China
3	GSERMUS Index	Goldman Sachs MAP Economic Surprise Index - US
4	GSERMWD Index	Goldman Sachs MAP Economic Surprise Index - Global
5	CESIG10 Index	Citi Economic Surprise Index - Major Economies
6	CESIJPY Index	Citi Economic Surprise - Japan
7	CESIUSD Index	Citi Economic Surprise - United States
8	CESIEUR Index	Citi Economic Surprise Index - Eurozone
9	CESIEM Index	Citi Economic Surprise Index - Emerging Markets
10	ECSURPUS Index	Bloomberg ECO US Surprise Index
11	CESIGBP Index	Citi Economic Surprise - United Kingdom
12	CESIGL Index	Citi Economic Surprise Index - Global
13	CESICAD Index	Citi Economic Surprise - Canada
14	CESIAUD Index	Citi Economic Surprise Index - Australia
15	CSIIUSD Index	Citi Inflation Surprise Index - United States
16	CSIIGL Index	Citi Inflation Surprise Index - Global
17	ECSURPEA Index	Bloomberg ECO Euro Area Surprise Index
18	CESIAPAC Index	Citi Economic Surprise Index - Asia Pacific
19	CESINZD Index	Citi Economic Surprise Index-New Zealand
20	CESISEK Index	Citi Economic Surprise Index - Sweden
21	CSIIEUR Index	Citi Inflation Surprise Index - Eurozone
22	ECSUHOUS Index	Bloomberg ECO US Housing and Real Estate Market Surprise Index
23	CSIITEM Index	Citi Inflation Surprise Index - Emerging Markets
24	CESICHF Index	Citi Economic Surprise Index - Switzerland
25	CESILTAM Index	Citi Economic Surprise Index - Latin America
26	CESIEMXP Index	Citi Economic Surprise Index - Emerging Markets Exports
27	CESIG10F Index	Citi Economic Surprise Index - Major Economies Fixed Weight
28	ECSUSUUS Index	Bloomberg ECO US Surveys & Business Cycle Indicators Surprise Index
29	CSIIG10 Index	Citi Inflation Surprise Index - Major Economies
30	CSIJPY Index	Citi Inflation Surprise Index - Japan
31	ECSURPGB Index	Bloomberg ECO UK Surprise Index
32	CSIICNY Index	Citi Inflation Surprise Index - China

Continued on next page

Table A14 – *Continued from previous page*

Number	Ticker	Description
33	GSERMEA Index	Goldman Sachs MAP Economic Surprise Index - Euro Area
34	CESIBRIC Index	Citi Economic Surprise Index - BRIC
35	CSIIGBP Index	Citi Inflation Surprise Index - United Kingdom
36	ECSUINUS Index	Bloomberg ECO US Industrial Sector Surprise Index
37	CSIIDE Index	Citi Inflation Surprise Index - Germany
38	ITMRBI Index	Brazil Itau Economics Surprise Index
39	CESIEMFW Index	Citi Economic Surprise Index - Emerging Markets Fixed Weight
40	CESICMEA Index	Citi Economic Surprise Index - CEEMEA
41	CSIIAUD Index	Citi Inflation Surprise Index - Australia
42	CSIILTAM Index	Citi Inflation Surprise Index - Latin America
43	CSIAPAC Index	Citi Inflation Surprise Index - Asia Pacific
44	GSERMCA Index	Goldman Sachs MAP Economic Surprise Index - Canada
45	WSUREURP Index	Westpac Positive Surprise Euro
46	ITMRMI Index	Mexico Economic Itau Surprise Index
47	GSERMDM Index	Goldman Sachs MAP Economic Surprise Index - DM
48	CSIICAD Index	Citi Inflation Surprise Index - Canada
49	WSUREURS Index	Westpac Size of Surprise Euro
50	CSIIFR Index	Citi Inflation Surprise Index - France
51	CSIISEK Index	Citi Inflation Surprise Index - Sweden
52	GSERMCE Index	Goldman Sachs MAP Economic Surprise Index - CEEMEA
53	GSERMJP Index	Goldman Sachs MAP Economic Surprise Index - Japan
54	ITMRLAI Index	Latin America Itau Surprise Index
55	WSURCADP Index	Westpac Positive Surprise Canada
56	WSURDMRP Index	Westpac Positive Surprise Developed Markets
57	CSIINOK Index	Citi Inflation Surprise Index - Norway
58	GSERMUK Index	Goldman Sachs MAP Economic Surprise Index - UK
59	GSERMLA Index	Goldman Sachs MAP Economic Surprise Index - LatAm
60	CSIIBRIC Index	Citi Inflation Surprise Index - BRIC
61	CSIICMEA Index	Citi Inflation Surprise Index - CEEMEA
62	GSERMAJ Index	Goldman Sachs MAP Economic Surprise Index - AeJ
63	SCGRMYES Index	Standard Chartered Economic Surprise Index - Malaysia
64	WSURCHFS Index	Westpac Size of Surprise Switzerland
65	WSURJPYP Index	Westpac Positive Surprise Japan
66	WSURNOKP Index	Westpac Positive Surprise Norway
67	WSURSEKP Index	Westpac Positive Surprise Sweden
68	WSURUSAS Index	Westpac Size of Surprise US
69	CSIIES Index	Citi Inflation Surprise Index - Spain
70	CSIINZD Index	Citi Inflation Surprise Index - New Zealand
71	WSURCHFP Index	Westpac Positive Surprise Switzerland
72	WSURNZDP Index	Westpac Positive Surprise New Zealand
73	WSURAUDS Index	Westpac Size of Surprise Australia

Continued on next page

Table A14 – *Continued from previous page*

Number	Ticker	Description
74	WSURUKP Index	Westpac Positive Surprise UK

References

- Banbura M, Giannone D, Modugno M, Reichlin L (2013) Now-casting and the real-time data-flow. In: Elliott G, Timmermann A (eds) Handbook of economic forecasting, vol 2. Elsevier- North Holland, Amsterdam, pp 195237
- Bragoli, D., Metelli, L., and Modugno, M. (2015). The importance of updating: Evidence from a Brazilian nowcasting model. OECD Journal: Journal of Business Cycle Measurement and Analysis, 2015(1), 5-22.
- Giannone, D., Agrippino, S. M. and Modugno, M. (2013). Nowcasting China Real GDP. Mimeo.
- Mariano, R. S., and Murasawa, Y. (2003). A new coincident index of business cycles based on monthly and quarterly series. Journal of applied Econometrics, 18(4), 427-443.