Evaluating Event Embeddings on Commodity Future Prices

Benjamin Steel[1] and Derek Ruths[2]

[1,2]School of Computer Science, McGill University
[1]benjamin.steel@mail.mcgill.ca, [2]derek.ruths@mcgill.ca

1 Introduction

2 Supplementary Table S1

		Commodities			
Method	Lag	Crude Oil	Brent Crude Oil	Natural Gas	RBOB Gasoline
Financial Sentiment	1	0.0033-0.9991	**0.0001-0.5968**	0.0191-0.5851	0.0504-0.9933
	3	**0.0005-0.1300**	0.0079-0.9989	0.1353-0.9926	0.0681-0.9978
	5	0.5314-0.9964	**0.0000-0.1560**	0.0166-0.5185	0.6790-0.9597
	10	0.6075-0.9989	0.4987-1.0000	0.0142-0.7591	0.0313-0.9813
	30	0.0331-1.0000	0.0019-1.0000	0.2467-0.9898	0.0018-0.9921
EventEmbed 32	1	0.1304-1.0000	0.0129-0.9945	0.7401-1.0000	0.0916-1.0000
	3	0.1881-1.0000	0.3197-0.9999	0.6547-0.9999	0.6780-1.0000
	5	0.0443-1.0000	0.5166-1.0000	0.8584-0.9972	0.0568-1.0000
	10	0.7443-0.9990	0.0020-0.9723	0.0427-0.9977	0.9941-1.0000
	30	0.0545-0.9966	0.0644-0.8047	0.0445-0.9432	0.9346-1.0000
		Copper	Palladium	Platinum	Gold	Silver
Financial Sentiment	1	0.0012-0.7796	0.0294-0.9397	0.0219-0.9703	0.1736-0.8981	0.0893-0.7589
	3	0.0035-0.6909	0.0683-0.9329	0.0547-0.9409	0.1524-0.7728	0.1795-0.8268
	5	0.1740-0.9749	0.0674-0.9210	0.2183-0.9792	0.1579-0.8449	0.2366-0.6277
	10	0.0035-0.8134	0.1397-0.9437	0.0180-0.9878	0.0895-0.4670	0.2201-0.7758
	30	0.4813-0.9981	0.0467-0.9303	0.0891-0.9156	0.1067-0.4624	0.2516-0.8059
EventEmbed 32	1	0.7044-0.9999	0.2820-0.9999	0.1688-0.8522	0.2191-1.0000	0.0426-0.9804
	3	0.9999-1.0000	0.2418-1.0000	0.2642-0.9728	0.0092-1.0000	0.8237-0.9999
	5	0.0098-1.0000	0.9992-1.0000	0.4008-0.9823	0.3193-0.9998	0.9966-1.0000
	10	0.0427-1.0000	0.9988-1.0000	0.6223-0.8593	0.0282-1.0000	0.0914-0.9995
	30	**0.0007-0.9956**	0.1217-0.9871	0.0744-0.9348	0.0050-1.0000	0.3098-1.0000
		Corn	Cotton	Soybean	Sugar	Wheat
Financial Sentiment	1	**0.0002-0.9985**	0.0890-0.9290	**0.0001-0.9976**	0.0754-0.9814	0.0378-0.9994
	3	0.0359-0.9981	0.0289-0.9028	0.0078-0.9774	0.3808-0.9986	0.1031-0.9855
	5	0.0119-0.9999	0.0134-0.8825	0.0287-1.000	0.2630-0.6394	0.0093-0.9672
	10	0.0139-0.9980	0.0374-0.6351	**0.0000-0.9279**	0.0027-0.6311	0.0206-0.9708
	30	0.0011-0.8198	0.0449-0.8800	0.0144-0.9738	**0.0000-0.9960**	0.0499-0.9665
EventEmbed 32	1	0.8926-1.0000	0.6215-0.9998	0.2680-1.0000	0.1735-1.0000	0.2229-1.0000
	3	1.0000-1.0000	0.8814-0.9799	0.9998-1.0000	0.9995-1.0000	0.9997-1.0000
	5	0.0075-1.0000	0.7691-0.9988	1.0000-1.0000	0.0027-1.0000	0.9997-1.0000
	10	0.0312-1.0000	0.3640-0.9992	0.0042-1.0000	0.3080-0.9998	0.9992-1.0000
	30	0.9991-1.0000	0.1528-0.9866	0.0414-1.0000	0.0125-0.9997	0.2629-1.0000

Table 1: Granger causality prediction results. We ran 3 models for each of the 4 price types, resulting in 12 results for each commodity. Of those, we include the maximum and minimum P values from our models for each commodity. We bold only the values where we have significance at 1%, given a Bonferri correction for 12 tests.