**Data Section**

The data used in this paper comes from a variety of sources and spans from January 4, 2012 to July 31, 2020 for all ETFs except USO, which spans from July 15, 2013 to January 31, 2020 due to changes in the ETF holdings. ETF and Futures prices are gather from Bloomberg Terminal, Thomson Reuters Eikon, and Quandl data services. The futures prices are used to recreate the target asset baskets. For the ETFs which hold multiple contracts (CORN, SOYB, and WEAT), this means reconstructing asset baskets based on their target methodologies found in their prospectuses. For example, the CORN ETF holds three different futures contracts: the second to expire (35%), the third to expire (30%) and the December contract following the third to expire (35%.) To recreate the asset basket, we sum the price of each futures contract multiplied by target weighting. The true weightings will fluctuate as the contract prices move relative to each other and the fund rebalances. Our asset baskets are idealized as they do not include any weightings drift. All prices are quoted in dollars. To the best of our knowledge, none of the ETFs in our sample were split or reverse-split in our sample period. [Descriptive Statistics for ETFs and Futures]

There are temporal indicator variables for both months and years which take the value of either a 0 or a 1. When used in the model, January is excluded and used as the base year for months, and 2020 is excluded and used as the base year for years.

The handling of roll dates are of particular importance. Because futures contract expire, fund managers must move from one contract to the next during stated roll periods. Roll periods are scheduled before hand and can last multiple days. During this period, the ETF transfers from one contract to the next. Because there is uncertainty as to what the ETF holds during the roll period, these days are completely excluded. We make the assumption that by close on the last roll day, the ETF has fully rolled and now holds the new contracts at the target weightings. Thus, when calculating returns, the close-to-close return calculation for the day immediately preceding the roll period is unaffected. Overall, roll periods accounted for 4.88% of daily observations. [update this statistic.] Indicator variables are used to identify day-before and day-after rolls.

Daily volume data is gathered from Yahoo finance and represent the cumulative amount of ETFs shares traded that day. [I am searching for more information on what is and is not included in this number] [Descriptive Statistics of Volume.]

In addition to temporal indicator dummies, we include report day dummies for the major reports. For USO and UGA, the Short Term Energy Outlook (STEO), Drilling Productivity Report, Petroleum Supply and Demand Report, and Annual Energy Outlook is included. For CORN, SOYB, and WEAT, we include the major agricultural reports, including the WASDE, Prospective Plantings, Grain Stocks, and Acreage Reports. The WASDE report is often released on the same day at a Crop Progress Report. We separate WASDE + Crop Progress and only WASDE into two distinct indicator variables.

Currently, missing days, which include weekends, trading holidays, and roll dates, are not handled and left empty.

Suggestions for what to add:

* Report dates (started below)
* Descriptive statistics
* Updated percent roll days broken down by ETF
* Stationarity tests
* Log return explanations/equations

**Report Dates**

WASDE Dates

* January 12, 2012
* February 9, 2012
* March 9, 2012
* April 10, 2012
* May 10, 2012
* June 12, 2012
* July 11, 2012
* August 10, 2012
* September 12, 2012
* October 11, 2012
* November 9, 2012
* December 11, 2012
* January 11, 2013
* February 8, 2013
* March 8, 2013
* April 10, 2013
* May 10, 2013
* June 12, 2013
* July 11, 2013
* August 12, 2013
* September 12, 2013
* October , 2013 <- Missing
* November 8, 2013
* December 10, 2013
* January 10, 2014
* February 10, 2014
* March 10, 2014
* April 9, 2014
* May 9, 2014
* June 11, 2014
* July 11, 2014
* August 12, 2014
* September 11, 2014
* October 10, 2014
* November 10, 2014
* December 10, 2014
* January 12, 2015
* February 10, 2015
* March 10, 2015
* April 9, 2015
* May 12, 2015
* June 10, 2015
* July 10, 2015
* August 12, 2015
* September 11, 2015
* October 9, 2015
* November 10, 2015
* December 9, 2015
* January 12, 2016
* February 9, 2016
* March 9, 2016
* April 12, 2016
* May 10, 2016
* June 10, 2016
* July 12, 2016
* August 12, 2016
* September 12, 2016
* October 12, 2016
* November 9, 2016
* December 9, 2016
* January 12, 2017
* February 9, 2017
* March 9, 2017
* April 11, 2017
* May 10, 2017
* June 9, 2017
* July 12, 2017
* August 10, 2017
* September 12, 2017
* October 12, 2017
* November 9, 2017
* December 12, 2017
* January 12, 2018
* February 8, 2018
* March 8, 2018
* April 10, 2018
* May 10, 2018
* June 12, 2018
* July 12, 2018
* August 10, 2018
* September 12, 2018
* October 11, 2018
* November 8, 2018
* December 11, 2018
* January 2019 <- Missing
* February 8, 2019
* March 8, 2019
* April 9, 2019
* May 10, 2019
* June 11, 2019
* July 11, 2019
* August 12, 2019
* September 12, 2019
* October 10, 2019
* November 8, 2019
* December 10, 2019
* January 10, 2020
* February 11, 2020
* March 10, 2020
* April 9, 2020
* May 10, 2020
* June 11, 2020
* July 10, 2020

Prospective Plantings Dates

* March 30, 2012
* March 28, 2013
* March 31, 2014
* March 31, 2015
* March 31, 2016
* March 31, 2017
* March 29, 2018
* March 29, 2019
* March 31, 2020

Grain Stocks Report

* January 12, 2012
* March 30, 2012
* June 29, 2012
* September 28, 2012
* January 11, 2013
* March 28, 2013
* June 28, 2013
* September 30, 2013
* January 10, 2014
* March 31, 2014
* June 20, 2014
* September 30, 2014
* January 12, 2015
* March 31, 2015
* June 30, 2015
* September 30, 2015
* January 12, 2016
* March 31, 2016
* June 30, 2016
* September 30, 2016
* January 12, 2017
* March 31, 2017
* June 30, 2017
* September 29, 2017
* January 12, 2018
* March 29, 2018
* June 29, 2018
* September 28, 2018
* February 8, 2019 <- Rescheduled
* March 29, 2019
* June 28, 2019
* September 30, 2019
* January 10, 2020
* March 31, 2020
* June 30, 2020

Acreage Report

* June 29, 2012
* June 28, 2013
* June 30, 2014
* June 30, 2015
* June 30, 2016
* June 30, 2017
* June 29, 2018
* June 28, 2019
* June 30, 2020

Cattle on Feed

Short Term Energy Outlook (STEO)

Drilling Productivity Report

Petro Supply/Demand

Annual Energy Outlook