
Grains Cheat Sheet

The following cheat sheet was prepared for the community by Operator Jose. He's a professional grain trader out of Venezuela. Anyone interested in attacking the grain markets will find this extremely useful.

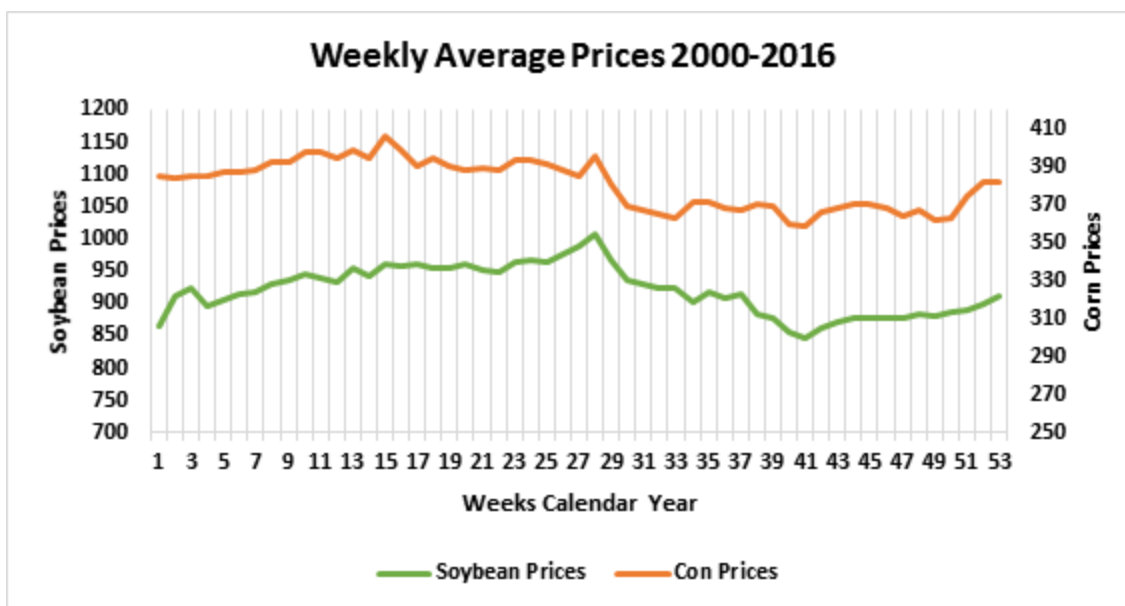
Quick Summary

- Commercial year starts on September 1st and ends on August 31th.
- Grains are almost never a Buy and Hold (for a long term portfolio).
- Corn Dec, Soybean Nov are the New Crop futures.
- On a normal year October 1st, or the first Friday of October is the lowest point in price for the Soybeans and Corn market.
- Weather has an asymmetrical effect on crops. It doesn't have to materialize to influence prices.
- Weather Risk Premium is the rise of prices due to concerns on production.
- Grain prices have a seasonal pattern, but this doesn't mean that prices are easy to predict every year.
- Be aware of exports bans and laws like Ethanol quotas for Corn.
- During February, because of China's New Year, Soybeans prices go down during festivities, then go up as they come back to the market.
- Corn to Soybean Ratio: if it's over 3, it pays to grow soybeans.
- If the Contango is too steep there might be an opportunity for an old crop/new crop calendar spread
- Storage costs and arbitrage plays explain the shape of the contango forward curve.
- If the market is at backwardation there's a supply concern and people need the grain now.
- WASDE is out the second week of every month.
- USDA is benchmark but be aware of consensus.
- Don't focus on forecast numbers, focus on price reactions.
- Don't follow the record crop trap.
- When open interest is trending down it is time to roll over.

Volatility Summary

- Prices Up, Volatility Up.
- Prices Down, Volatility Down.
- Stock to use ratio High, Volatility Low.
- Stock to use ratio Low, Volatility High.

Seasonality Summary



The weekly average price must be seen as a reference of a normal commercial year without any significant supply or demand shocks. It captures the grains seasonality pattern.

Crop Calendar

Corn

	Enero	Febrero	Marzo	Abril	Mayo	Junio	Julio	Agosto	Septiembre	Octubre	Noviembre	Diciembre
Brazil (summer)	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting
Brazil Safrinha	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting
Argentina	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting
Bolivia	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting
USA	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting

Soybeans

	Enero	Febrero	Marzo	Abril	Mayo	Junio	Julio	Agosto	Septiembre	Octubre	Noviembre	Diciembre
Safrinha	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting
Argentina	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting
Bolivia	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting
USA	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting	Planting

Harvest	Yellow
Planting	Green

If we track prices along with the Crop Calendar it's easier to know at which stage of the commercial year we are at any time. If prices don't follow the normal seasonality it means that there's new relevant information from either the demand or supply side. You should expect a commercial year where prices don't follow their usual seasonality pattern.

Building Blocks

The most important factors use in the analysis of agricultural commodities are:

Supply

1. Current Year Production.
2. Surplus stocks left from the previous year also known as carry in or inventory.
3. Imports from other countries.

Demand

1. Domestic Use.
2. Exports.

Commercial Year Is Key

Soybeans and Corn commercial year starts on September 1st. The 2015-2016 commercial year starts on September 1st 2015 and ends August 31th 2016. A minor but important trick is to arrange all your data, like exports, Commitment of Traders data, and price data so that they all start on a commercial year basis instead of the calendar year. Big players like producers, elevators, and grain processors will make most of their trading decisions this way.

Grains Seasonality

You've probably heard that commodities prices follow a seasonality pattern, Grains are no exception to this. It makes sense for prices to be low when the harvest just finished and there isn't enough room to store all the grain. The only option left for a producer is to sell his bushels.

Also notice that the farmers have bills to pay. They also have to pay interest on the loans they acquired to finance the year's crop. So the first part of the crop going out to the market is probably going to pay all of their production costs. But since everybody is doing that, supply outweighs demand and prices sink lower.

On the other side of the spectrum, the month before harvest only the grains in storage from last year's crop are available. Supply is tight, and if something goes horribly wrong with the current year's crop, prices should spike higher.

Keep in mind grain seasonality isn't a perfect indicator. Not all years will follow this price behavior.

Grains As A Story: How To Follow The Narratives For A Commercial Year

Planting Season - April To June

It all starts on the last day of May with the USDA prospective planting report. Producers will reveal their intention for the new crop. This is the first key information the market will receive regarding this year's crop.

Next, everybody will follow the planting pace on the Crop Progress report which is published every Monday by the USDA. If pace is within the average, nothing happens. But if rain or other types of delays happen, the planting pace starts to deviate from the average and production concerns will start to fester.

(Corn and Soybeans have an ideal window of planting. If they are not in the ground by this time, yields will suffer.)

This will continue until the USDA Acreages reports are out in June. By this time the market knows how much acres of Corn and how many of Soybeans are effectively on the ground.

Grains on the Ground - July To August

The next big thing will be yield. If you know how many acres are planted, and if you also know how much corn each acre will give you, you will be able to calculate the size of this year's production.

Crop progress will show if the grains are in great, good, or bad condition. This is the time when grains are most susceptible to weather, the number one risk in this market.

This time of the year is when you can expect high levels of volatility. Traders have more opportunities to speculate since prices can change rapidly. Weather news is really important during this period.

The Harvest - September To November

Next is harvest season. The Crop Progress report will show the pace at which the grain is being picked up from the ground. Just like in the planting pace, the market expects it to be close to average. If it goes too fast, it could imply a short term supply glut. And if it goes too slow it could lead to quality issues.

Rains aren't friendly at this point, besides slowing the harvest pace, they could damage perfectly good crop, or damage its quality, and as usual the market will focus on weather.

Demand Market - December To January

Now that the harvest is done, the supply driven market will turn into a demand driven market. Everybody will focus on the weekly exports report.

The expectation is for good numbers and a great start to the commercial year. If exports are strong it means the market is healthy and everything is going smoothly.

If bad weather impacts distribution and exports that's actually bearish for the CME grain contracts. Since the grain cannot be delivered people will buy it from other sources.

No More Information Left - February To March

The market will keep an eye on demand for the time being until February. At this point everything is known like the size of the crop, and how the demand is shaping up. Unless some new story comes into play, there is not going to be new key information released for a while. The markets tend to be quiet until it's planting season once again.

The whole cycle then repeats.

Grains Are Almost Never Buy and Hold

Whenever you're trading grains, you're trading the specific crop condition for that year. (Supply and demand expectations for that year.)

When you buy a company it'll (hopefully) still be there after one year, 5 years, 10 years, etc. It's not like their buildings and infrastructure will suddenly disappear out of thin air. Market conditions can change, like new competitors, or new consumer preferences, but a company can adapt and still be in business. If it has added value through time you should be rewarded with a higher price for the stocks you own.

Grains on the other hand are literally destroyed every year. This condition is known as “Fungible” and is a property of most commodities. It means that in order for it to be used it must be destroyed. If you want more Corn it needs to be created from the ground once again. You can't reuse an old crop.

Every time a crop is destroyed or (used) you will be trading whatever is left in inventories plus the next crop's conditions and expectations. The new crop will have a completely different set of circumstances than what happened a year before.

For the new crop, demand could be growing at a faster rate than production. Or maybe there's a huge weather threat this year that wasn't around last year.

These characteristics are what give grain prices their seasonality.

So unlike a business that grows and adds value, corn can't add value. Therefore it makes no sense to hold corn in a portfolio for years at a time.

It's important to remember that each time you step into this market you are trading the specific conditions and expectations for that year's crop plus what's available in storage.

The only time you're going to want to hold grains for over a year is when a Food Crisis hits. A really bad crisis can take years for the production side to solve.

Seasonality Tricks

On a normal year October 1st, or the first Friday of October is the lowest price point for the Soybeans and Corn.

New Crop Futures

November Soybeans, December Corn are the New Crop Futures.

A Thing On Volatility

Grains volatility goes up when prices are high, and volatility goes down when prices are low. It's the opposite behavior to stocks.

When grain prices go up it doesn't mean good things for the economy. There are production concerns. The market thinks that the harvest won't be enough to fit everybody's needs. Prices rise and volatility climbs until the uncertainty is resolved.

The Carry-Over Explained

The carry-over is the remaining supply from the previous year plus current year production, plus imports, minus demand.

$$\text{Previous Year Supply} + \text{Current Year Production} + \text{Imports} - \text{Demand} = \text{Carry-Over}$$

The carry-over is the link between futures prices and different crop years.

What Is The Stocks To Use Ratio?

Stocks to Use Ratio is a really important indicator for the grains market. It measures how much grain is left as carry-over relative to its use (demand).

If last year's production of Soybeans was 100 tons, and the demand was 90 tons, that means that the carry-over from the year was 10 tons. The stock to use ratio would be: 10/90 or 11.11%. So in the case of a bad crop the next year, there will be still 11% of the total demand already accounted for.

Following this example, if the next year's production rises to 110 tons and demand stays the same (90 tons), we will have a 20 ton surplus. The carry-over will be the 10 tons that we had on stock plus the new surplus.

Our new stock to use ratio will look like this 30/90 or 33.33%. There are more than enough Soybeans to go around for everybody who wants them.

Now let's say in the third year it's a completely different story. China's GDP keeps growing, more people join the middle class and have bigger incomes so they start eating more meat. China's meat producers need grain feed for their cows, so the demand for Soybeans rises to 100 tons.

At the same time, El Niño decides is a good time to play with the American Farmers... this year crop production falls to 75 tons due to poor weather conditions.

So in year 3 we have a shortage of 25 tons. To meet the shortfall the savings from year 1 and 2 are consumed. The total carry now drops to 5 tons (30 in savings minus the 25 shortage).

Now the stock to use ratio looks like this... 5/100 or 5.00%.

The ratio captures the relationship between 3 variables: Supply, Demand, and Inventories.

Supply could be growing, but if Demand is also growing at the same rate they should offset each other. The stock to use ratio should stay the same.

If Demands grows faster or there's a production issue, the ratio will fall. (Less stock per unit of demand).

If Demands falls or supply grows faster, the ratio will increase. (More stock per unit of demand).

Stocks To Use Ratio And Volatility

This ratio should not be used to simply predict price. (Sadly, It ain't that easy). But it's a great tool to predict volatility.

When the ratio goes up volatility goes down. There's enough grain for everybody and people aren't worried about shortage shocks.

If the ratio goes down, volatility goes up. People fear a grain shortage and price action turns wild.

Don't Follow The RECORD CROP Trap:

Everybody likes to scream New Record! And Biggest Crop Ever!

Check how this will affect the Stocks to Use Ratio, and you will have a better sense of the impact this crop will have on the market and ultimately price.

It doesn't mean anything for traders if farmers produce their biggest corn crop ever but demand from China follows the same growth rate. The effects should offset each other and price probably will remain the same.

Nevertheless, Kudos to the farmers! Their hard work and effort will earn them more income from record output.

USDA The "FED" of Grains Markets

The data from the USDA is important... REALLY important. They work as a benchmark and a reference for the entire market, from farmers, to grains processors, to commodity hedge funds. Everybody checks their releases.

Here are some key reports:

WASDE

On the second week of every month the USDA releases it's WASDE report. (World Agricultural Supply and Demand). Here you will find the Balance Sheet, which has all information you need to know regarding Supply, Demand and Inventories from the most important Countries.

Please notice that not all WASDE are equally important, some are more than others, and this has to do with the planting season. The USDA does a first forecast and adjusts it when needed from month to month until harvest time.

Their forecasts are usually very accurate.

Prospective Planting Report

This one is released on the last day of May. It's a producer survey, and it tries to forecast how many acres of Corn, and how many acres of Soybeans they will plant.

It's important to understand that this report expresses the *Intentions* of the Producers, so the crops aren't on the ground yet.

Acreage Report

This report shows the effective distribution of acres between Corn and Soybeans. It is released in June. If farmers decided to change their mind during planting season, you will find that the numbers on this report are different from the ones in the Prospective Planting report.

USDA is the benchmark but be aware of consensus.

Alongside the USDA forecasts, there are a number of private reports who try to do the same, and they are fairly accurate too.

But sometimes USDA numbers will differ greatly from the consensus of the private reports.

When this happens a shock in prices usually occurs.

Story time: In 2016 USDA had a forecast for the Corn Yield of 175 bushels per acre. This was a record yield, and implies a really big crop. The biggest American Corn crop the world has ever seen actually.

With such an abundant amount of Corn prices SHOULD go lower right?

Well, the consensus of the market was that USDA was overestimating its yield numbers, and the crop should be smaller than what the USDA predicted. Around 170 was the private yield forecast. The price reaction to this situation was that Corn Futures went UP instead of down after the USDA report was released.

Fast-forward a couple of months later, and guess what the final yield was? Yup, 175... Old USDA had it right all along.

Please notice that I'm not suggesting to trade the consensus side. That would be equally as bad as blindly trading the USDA numbers.

All I'm trying to say is that you should know what the benchmark is. Check if the consensus agrees or diverts from the benchmark, and then focus on price reaction. You will need to develop your price action skills sharply! That will help you more on the long run than just memorizing fundamental data.

Don't Fall For The Most Accurate Forecast Trap

Our last point should tell you a thing or two about forecast reports. If you are a TRADER your focus must be on PRICE, period.

If you're an analyst who is getting paid a salary to come up with a forecast, then yes, you should commit yourself to be as accurate as humanly possible.

But if you want to trade grains and be profitable, you shouldn't pay that close attention to the actual yield number. You must look for the benchmark and the consensus, that's it.
(Benchmark=USDA Consensus=Private Reports)

As a Trader it just doesn't matter if your forecast of a number is correct. You want to be right on price! So don't waste your energy trying to forecast where supply or demand is going to be. Focus on market expectations, price reaction and trade accordingly. Play The Player!

The Corn and Soybean Spread

Corn and Soybeans compete for the same acreages area. Ultimately farmers must decide how much of their space they are going commit to plant Corn, and therefore how much Soybean they will put into the ground.

The ratio is Soybeans over Corn, and it tracks how much money a farmer receives for their Soybean crop relative to their Corn crop.

It's usually around 2/1. Whenever it's over 3/1, it means that it pays more to grow Soybeans over Corn. For every ton of Soybeans a producer sells he will have to sell at least 3 tons of Corn to get the same amount of income.

It's important to realize that corn yields are bigger than soybean yields. That means that an acreage of Corn gives more bushels than an acreage of Soybeans. Since farmland is a limited resource that can't be quickly scaled up or down, it's important to pay attention to this indicator.

It gives you an insight on how the producers could decide to plant for the year.

Weather Is THE Real Risk Factor, it doesn't have to materialize... the rumor is enough.

For Macro Ops narratives are important. And it's no different for grain markets. The concept of Weather Premium is an important one to understand in order to trade grains. Whenever the crops are on the ground, they are really sensitive to bad weather conditions. Volatility tends to go up.

If you add a rumor about bad weather that COULD have a negative impact on yields, prices will go up. This higher price is known as Weather Risk Premium. The reason being is that now there are concerns that supply won't be enough for everybody.

Some key players absolutely need corn for their operations. They are price acceptant which means that no matter the price they have to purchase the corn.

This type of player is willing to buy at a higher price just to secure its operative needs (think of Kellogg's for example).

This type of behavior is what brings prices up.

Now, if we fast-forward to harvest time, and the Weather wasn't as bad as previously thought. (The genetically modified seeds are pretty resilient by the way.) Then prices should go lower as the weather premium is no longer baked in anymore.

The point to take home here is bad weather didn't become a reality, nevertheless the rumor was enough to make some key players take action, and this ended up influencing prices. So, pay attention to Weather Narratives and try to identify when you are in a Weather Risk Premium Market.

Weather has an asymmetric effect.

The real reason why markets are willing to pay a Premium for weather risk is because weather has an asymmetric effect on yields and therefore on the supply.

Bad weather has the potential to literally destroy a year's crop potential (that's why insurance for farmers exists).

There are many ways horrible weather conditions could mess up crops. If it's too dry or too wet while the grains are in the ground it has a negative effect on yields.

Too much rain when it's planting season means a slower planting pace. There's a critical window of opportunity for planting corn and soybeans. If they are not planted in the right moment yields will suffer.

On the other hand, during harvest season if there is too much rain it also slows the pace and could lead to quality issues. Grains must have a standard dryness otherwise they are considered lower quality.

A storm could mess up piers and ships and create distribution worries. In South America where infrastructure isn't so great, heavy rains imply bad muddy roads which makes some farms impossible to reach.

Good weather on the other hand, doesn't have the same effect... it just helps yields to some degree, but only if everything else was done properly, and that's pretty much it.

If you are trading Soybeans, China's New Year Holidays matter.

Check your calendar around February. China's holiday celebration lasts a week. That means that all physical operations for Soybeans stops during this time of the year, If there aren't any other relevant news on the market like a weather story, prices tend to go down as a result of the lesser demand while the East is asleep.

By the same logic, when the festivities are over they tend to come back with a buying frenzy so it's good to be aware of this behavior.

It's easy to pinpoint this trend in China's Soybean Imports report. February tends to be the smallest month of all.

Commitment of Trader Reports though a lagging indicator is an important one.

The COT is a really useful indicator to understand the structure of the market you're in. It divides all market players into 3 key classifications, Commercials, Managed Money and Speculators. Commercials will be guys like ADM, Cargill, or Kellogg's. They use the futures market not to speculate but to hedge out the risk that commodities prices have on their physical operations.

Managed Money will be hedge funds with big amounts of money. They are the so called "Smart Money." Speculators are all the small players like you and me.

If you take each group's long contracts minus their short contracts you will be able to pinpoint whether they are Net long or Net short.

Commercials tend to be net short almost all the time.

Managed Money can be both net short or net long. If they switch positions from a very net short position, like 150.000 contracts, to net long 50.000 contracts this should tell you that the "smart money" is now bullish on that commodity and betting on higher prices.

Referencing how long or how short the funds and the commercials are relative to their previous positions gives tremendous insight on the market.

Speculators have a tendency to be on the wrong side of the trade consistently, OUCH! (Don't be one of them).

Unlike other bigger markets. Fund money is big enough to move prices on the grains futures market. It's important to track their actions. A good way to keep an eye on their activities is to take their net position and divide that by the open interest.

The Open Interest

Open Interest is an indicator that confuses a lot of stock traders since it's exclusive to derivative markets.

Here's a simple example:

If you go long 5 contracts of Corn, you have raised the volume indicator by 5 contracts. If by the end of the day you decided to take profits and close 2 contracts, you will have to sell two corn futures.

The volume will end up being 7 contracts for the day.

But since you closed out two contracts you are only left with 3 contracts overnight. The open interest indicator will show 3 contracts.

Open Interest tracks how many futures are still open at the end of the day. Every time you short or go long on a futures contract you will add one point to Open Interest. You will “create” one contract. When you offset the position by making a closing trade, you will eliminate the contract thus reducing the OI.

The higher the OI the more contracts are created. Therefore more people are trading that particular futures contract.

If OI starts to trend lower it usually means traders are starting to roll their exposure over to the next month’s contract. Liquidity will dry up in the expiring contract and flow into the new contract.

The Forward Curve: Contango and Backwardation

The forward curve is simply the chart representation of all the tradable futures contracts in any point in time. Futures contracts are available in most months.

The forward curve will plot all the prices on Y axis, thus giving you a picture on how the market is pricing the contracts from today until many months into the future.



In this example prices went up from yesterday. The spread between different contracts remains the same, because otherwise there'll be arbitrage opportunities.

When the front month is the cheapest one, and contracts further out in time are higher in price, you are in a Contango Market.

When the front month is the most expensive one, and contracts further out in time are lower in price, you are in a Backwardation market.

Calendar Spreads and the Grain Elevators Business

A calendar spread is a trading strategy which consists of profiting from a movement in price on the same underlying asset with two different expiry dates.

When we were discussing the Corn to Soybeans ratio, we were trying to get into a farmer's head and play the game just like he would.

Whenever you are talking about calendar spreads we are entering in the domains of the Grain Elevators. Their business focuses on this.

They receive the grain from the farmers when it is abundant and cheap, store it, and then sell it when it's scarce and expensive. They didn't add value, they just keep it in the same conditions they received it. The idea is only to profit later on when prices are higher.

When you are trading calendar spreads you are working in a similar fashion. All you are saying is that the prices of Corn in May should go higher relative to the Corn in September or vice-versa.

Forward Curve and the Storage Theory

It always intrigued me how the market could figure out how to price Corn futures so many months in advance, especially when nobody knows how future events will unveil. To understand why the Corn market is usually in Contango we are going to need two additional concepts: Storage costs and Arbitrage.

Let's say today's Corn is priced at 350 cents per bushel and the futures with delivery 3 months from now are trading at 400 cents. If someone is able to buy the corn today at \$3.50 and store it with a cost of 5 cents per month, he will end up with a price of $3.50 + 0.15 = 3.65$ per bushel three months into the future.

So what this opportunist needs to do is to buy the Corn at today's prices, sell the 3 month futures contract for 4.00 and wait three months. At the end of it, he will end up with a profit 0.35 ($4.00 - 3.65 = 0.35$) per bushel.

The point here is that there wasn't any risk, no matter what happens to prices he'll end up with a profit. That's an Arbitrage trade.

If the contango curve is too steep it means that prices are too high between one contract and the next forward. Many people will be able to do a similar arbitrage trade like the one we just described. This brings down the prices on the further out futures until the arbitrage disappears.

I like to think about the forward curve in this way. If the Sep Contract is trading at 350 and the December Contract is trading at 355, then it probably costs 5 cents to store that corn from September to December. Otherwise there will be an Arbitrage Opportunity. It's important to get a feeling of how steep the forward curve should be. If it gets too high maybe there's an opportunity!

Backwardation Case

When prices are in Backwardation it's not possible to do the same arbitrage trade we just described.

When prices are at backwardation it usually implies that there are supply concerns and people need their grain NOW.

But if the prices of the closest futures get too high, people just will stop buying altogether. They will postpone their purchase plan and try to take advantages of cheaper prices in the future.

This two cases should give you an idea on how the market is able to maintain a reasonable Forward Curve. Of course new information could mess up with these relationships, and that is where opportunities arrive!