



**MACRO Voices**

*with hedge fund manager Erik Townsend*

# Art Berman: Will the crude oil market catch the Coronavirus

February 6<sup>th</sup> 2020

**Erik:** Joining me now is petroleum geologist Art Berman.

Regular listeners already know it wouldn't be an Art Berman interview without an Art Berman slide deck. You'll find the download link for the Art Berman slide deck in your Research Roundup email. If you don't have a Research Roundup email, that means you're not yet registered at macrovoices.com. So just go to our home page at macrovoices.com, and look for the red button that says [Looking for the Download?](#) next to Art's picture.

Art, it's great to get you back.

Before we dive into your excellent slide deck, I want to start with the big picture.

First of all, I want to congratulate you. [When we last had you on the show just before Christmas](#), you were getting very, very sharply criticized for an article you had just published called "The Oil Rally Won't Last."

And at that point we're at \$61. A whole bunch of people were saying, hey, we're headed to \$90. This is it, this is the big one.

You said maybe \$63 and it's going to roll over. And I think we ended up with, what was the high? \$63.05 or something? So you blew it by a nickel. Not quite up to your past perfection.

But that was before any of this coronavirus stuff hit the tape, so to speak.

Since then, not only did we see the market sell off as you predicted it would, back down to the fair value that you calculated using your comparative inventory modeling system. You said it would probably overshoot to the downside.

Now, that was all before we knew about coronavirus.

My question to you (before we get into the slide deck) is how do you see this whole coronavirus thing? A lot of people have criticized me too, thinking that I'm overblowing this.

I think it's a really big deal.

We just had the stock market, in the last couple of days, rally to new all-time highs because of a headline – or at least it appears that the proximal cause was a headline – saying don't worry, it's cured.

And, in reality, somebody's got progress that they're making on treatment. I don't think anything *has been* cured. WHO [World Health Organization] confirms that it is still considered an untreatable disease and it's spreading exponentially.

So how do you see this? Is this a big deal for the oil market? Or is this something that the oil market just sort of freaked out about and is about to get over?

**Art:** Erik, I think that this coronavirus is a huge deal. And I'm concerned, based on your question, I don't think that just the oil markets are going to be tremendously affected. I worry that this could have terrible consequences for the whole global economy.

And what I want to say first and foremost is that we've got a lot of people talking as if they have some kind of calibration as to what this disease is about and where it's going, etc. And we all pay attention to the World Health Organization and their  $R_0$  ["R-nought"] numbers and everything.

But my take is we don't know anything, really. Except that it's very real, it's pretty big, and nobody really understands where it's going and how it's going to affect things.

So what I've prepared – and we'll talk about in a few minutes – are just some mechanical models where I've played around with some of the ranges of changes in supply and demand for oil that various agencies and consultancies have put out there.

And those yield a certain effect.

But what those don't do is to account for the feedback loops and what some people are calling knock-on effects that reverberate through the economy which could make these numbers really, really small, if not trivial, before we're done.

So uncertainty is the key. I don't know the answer. I know you don't know it.

And people who talk like they do, beware of them. Because they don't either.

**Erik:** Well, I couldn't possibly have said it better, Art. You and I don't know. And the people who are saying this is nothing more than a glorified seasonal flu and it's nothing to worry about don't know what they're talking about any more than you and I do.

And I think it's very irresponsible for people to be so dismissive when they don't know. This is still an unknown.

In any case, let's go ahead and dive into the slide deck.

And I want to just mention for our listeners – it's not on the slides because the news just came out in the few minutes since we've started recording – the OPEC JTC, which is the Joint Technical Committee Meeting, has concluded. And they did not make a decision to go to deeper production cuts. Russia was favoring maybe extending the existing production cuts.

It sounds to me like the real bottom line is they've already got a regularly scheduled meeting planned on March 5 and 6. The outcome of today's meeting was: We're going to wait until March 5 before we take any action on deeper cuts.

It will be interesting to see how that plays out. Obviously OPEC will respond, if they need to, to worsening market conditions. But, for the moment, that's the news update.

Let's go ahead and dive in.

Starting on Page 2 here, talk us through what's going on in the slide deck.

**Art:** Right. And just to follow on your comment before I do that, prices were up and now they're down. So the markets are, as we might have predicted, they've already begun reacting to that news.

So Slide 2 is, again, just a mechanical model. It doesn't deal with feedback loops that are hugely important and totally unpredictable.

All I did here was I said, let's reduce oil demand by half a million barrels per day every quarter in 2020. And let's assume – and now we know this is, at least for now, not going to happen – a 200,000 barrel per day OPEC cut beginning in Q2. Maybe it will, maybe it won't.

That translates to a 150,000 barrel per day average 2020 cut.

And then all I did was impose that on the integrated model that I use that takes all of the IEA OPEC and the EIA supply-demand, supply-consumption data. And bingo, what we end up with is not a terrible picture.

It says that on average for 2020 we're a little bit over supplied. We have a little bit of a production surplus. Demand growth is low – 0.73 million barrels per day growth.

But hardly catastrophic and not particularly out of the ranges that we've seen over the last several years. So that's kind of model run #1.

And, again, my point here isn't that there is nothing to worry about. My point is that if we could figure this out just by changing a few numbers, it says that the picture doesn't change dramatically.

**Erik:** Now, before we dive into Slide 3, which is really the same model with different input parameters, give us the back story here.

Why did you choose the specific input parameters that you've got on Slide 2? And why did you choose different ones on Slide 3 to get that comparison?

**Art:** Good question, Erik.

There are all sorts of ranges of demand change that are out there. I think OPEC is talking about something like 200,000 barrels per day. BP is the standard that I used. They're saying half a million barrels per day.

And the talk before today's news was that OPEC might cut another 600,000 barrels per day, which, even if they decided to do that, I don't really believe they're going to deliver on it. And they're certainly not going to deliver on it at all in Q1. And so I just played with those numbers.

And so the difference, then, in Slide 3 is that Wood Mackenzie – a consultancy which generally does a pretty competent job in my opinion – they said in an article I just read this morning that the demand reduction for Q1 of 2020 might be 900,000 barrels per day.

So I said, okay, let's reduce it by 900,000 barrels per day in Q1 and then go back to the 500,000 barrels per day for Q2 through Q4. And then let's assume that OPEC does exactly what they at least appear to have done today (and maybe in March too, which we don't know), and they don't cut at all.

And if that occurs, then still not a horrible catastrophic result. We end up with demand growth of 0.63 million barrels per day, which is disappointing for sure. But we only end up with an annual average supply balance of 320,000 barrels to the excess.

So, again, these are just numbers to play with so that we have some calibration.

And the honest truth of why I did this, Erik, is because I haven't seen anybody else do it. I mean, I'm sure that people have done this internally in their own companies and organizations. But so far all we've heard is demand, demand, demand. And we don't know what it means.

And other than OPEC cuts, we haven't heard anything about supply. And nobody has said where their data comes from.

So I'm putting it out there. This is where my data comes from. People can check it. People can go to these various sources and do their best at integrating the way I have.

But it gives us a place to start talking. And that's why I did it. Not because it's right.

**Erik:** Moving on to Slide 4 –

I just want to point out before we dive into the details here, when we last spoke to you around Christmas, we were right at the right edge of the slide here. We were at \$61.

You said at the time this rally is not going to last. You said maybe \$63 before it rolls over. Congratulations on that.

But my first question on this slide is did you expect, before we got the coronavirus news, the magnitude of move all the way from one standard deviation above all the way down to the lower standard deviation line? And of course now we're below it.

Or were you thinking we were just going to overshoot slightly on the mean line?

**Art:** Well, the way that markets work, in my experience, is now we've got a bunch of traders out there that are discovering what the appetite is for contracts on the other side. And they'll push it as far as they can go.

So the simple answer is I would not have predicted that it went to \$50. But it doesn't surprise me that it has. Because it's always about over-reaction by the market because traders are trying to figure out what's reasonable.

So the whole reason that I put out these charts showing these standard deviation and mean limits is, again, to provide some calibration. Not that these are necessarily hard and fast or even true. They're just statistically where are we?

So the point, I guess, the answer is we really haven't busted the lower limit. But, yes, we undershot farther than I imagined we would.

**Erik:** Okay, Art. I just wanted to start by establishing that we're in a fairly predictable pattern which has persisted for quite some time.

You can look back to October 3 of 2019, the low there. September of 2019. You can look at all of these different points and you see that there has been a fairly predictable cycle here of up and down between the upper and lower standard deviation limits.

And we're just below it now.

So the real question in my mind is, okay, I suppose one side of this argument could be, hey, markets tend to overreact and get full of emotion and so forth. But, at the end of the day, this is a pretty darned reliable model.

What we should be looking at is we're below that lower standard deviation line. And that means it's time to cover your shorts, start buying here, and expect the price to go back up to

the upper standard deviation line over the next few months.

Now the other side of that argument would be, wait a minute. We didn't have a coronavirus when these other things happened.

So would you, based in your experience, would you say, okay, this thing is done here? Or would you say that it could be it's just getting started, depending on how the coronavirus turns out.

**Art:** Again, back to our earlier comments, I don't know.

But, having said that and wanting to respond to your question, I would really be surprised if it's done and we're going up. I mean, that's part of the reason I show this longer time period on this graph. Because if I just show the last couple of months, it looks like, oh, wow, yesterday was a big turnaround.

You can see here, Yes, not so much.

But, back to the basics. There's so much uncertainty in the system at the moment. I mean, if the coronavirus got cured, if they found a cure tomorrow (which is not going to happen), we still have absolutely no way of being able to predict when it gets contained.

With all of this exponential growth that's showing up in all kinds of different countries, we really have – I have, certainly – no way of measuring what the so-called knock-on effects or how long it's going to take for the oil market or the global economic markets in general to recover. Assuming we can make a mark and say, okay, it's going to get better from here.

But my point is we don't know that. There is absolutely no way to know.

So, bottom line, I would expect it's going to get worse, regardless of hope or fear. I just think that we just don't know how this thing can possibly be contained or what its outcome will be.

So I expect that we've busted that lower standard deviation limit, whatever that means. And it would actually surprise me if we didn't get down closer to the December 2018 \$42-\$43 limit.

And who knows? Maybe lower?

But that's my guess, Erik.

**Erik:** Well, we're very much in agreement there. And, again, I don't know any more than you do how this is going to turn out.

But what I do feel that I know with certainty is that a lot of people in the marketplace are too complacent. They are assuming that it's all going to be fine.

“It’s just a seasonal flu. It’s not a big deal.”

And I just don’t think the facts in evidence support those conclusions.

Moving on to Slide 5, what we’re looking at here is a comparison of the price (the lower chart in brown) of the price of WTI crude oil, West Texas Intermediate crude oil.

The top chart is showing the time spreads, the difference between the price of the first month and the price of the 12th month.

And I just want to insert here, as an oil trader, my personal opinion is the spreads tend to tell a more convincing story than the front-month price. The front-month price can get money hammered around by hedge funds that are not really oil traders, by retail traders, by people reacting to headlines.

The people trading the time spreads tend to be professional oil traders who understand the market pretty darned well. So I just wanted to insert that little bit of background for our listeners.

What are these charts telling you in terms of what’s happening with both the price and the 12-month time spreads in the wake of this news ever since the coronavirus has become an issue?

**Art:** Well, Erik, you’ve stated it better than I could as to what really means something versus what means a little bit less something, perhaps.

But what I take from this chart is that the 12-months spreads have not gotten to their lower limit yet, if that means anything at all.

In other words, the spreads – if we allow that the 12-month spreads might decline as much as the front-month price – then we’re not there yet. And if those react as you and I think they very likely may, then the price is going to track it.

That’s what it does.

So it becomes which one of these data series leads the other? And I think the 12-months spread leads the front-month price.

So we’ve got a lot farther to go.

And the other thing that I think it shows is that the price reversal looks more dramatic than the spread reversal yesterday. That’s one data point.

But we can say that, Yes, yesterday was a pimple. It was insignificant in terms of what

happened to the spreads.

So that's my take.

My take is that this reinforces the points that you and I have agreed on so far, which is it's as likely that we ain't seen nothing yet as it is that the mainstream view is, okay, it's over.

I absolutely don't believe that.

But it reinforces the fact that we probably ain't seen nothing yet.

**Erik:** Now, a lot of people use charts like this, Art, with the 12-month spread. And, as we look at this, we see from \$5.59 back on January 6 all the way down to 13 cents. That's a really big move. But it's still a positive number, which means that the market is in backwardation, not contango.

And a lot of people will look at this number and they'll say, okay, look, we're not in contango yet. The flip into contango would be the telltale sign that spread traders really think that something is wrong.

One of the things I really enjoy about your work, Art, is you don't just leave it at this chart.

Moving on to Slide 6, you're showing the full-term structure.

And if we look back to that January 3 (the orange line at the top), you can see that the term structure is in backwardation all the way from the very first month all the way out pretty much to the end of the curve.

And backwardation, of course, is that downward-sloping line where each successive price is lower than the one before it.

As we look at the more recent curve, particularly the February 5 at the bottom, you can see that the first five months of the curve are now, and have been for more than a week now, in a fairly significant contango for the first five months.

But if it's the first five months, and then you've got six months or seven months of backwardation before you get to that 12-month point. It still look on that 12-month chart as if we're not in contango yet.

But in reality, we do have contango at the front of the curve. And it's not just the first month. It's the first five spreads at the front of the curve that have moved into contango.

So what does this tell you? Where are we headed? And how do you interpret this?

**Art:** The way I interpret this is – I mean, let's just look at the bottom three, the 24th in green, the 31st in the dash black, and yesterday's February 5 in red – and what that shows me is that things are getting progressively worse with each successive forward curve.

That the price is going down. But more significantly, on January 4, we were kind of in a flat situation for the first month or two before it went into backwardation.

[On the] 31st we had a few months of contango before it went into backwardation.

Yesterday we had many months of contango.

And more importantly, I think, is the way the three curves cross each other out there, past one year. And we know that there is not a lot of volume, not a lot of liquidity out there.

But those are sort of telltale signs that, again, the whole thing is shifting. The front end is moving down and the back end is moving up.

So, to me, we're looking at a very significant and progressive change in term structure that says, wow, what has to happen to cause this to turn around?

And the answer is, I don't know.

But it looks to me like the truth of the total forward curve is markets are battening down the hatches and preparing for the worst. And we're hearing about traders looking into leasing floating storage. Anticipating that there is just going to be a lot of excess supply and no place to put it.

**Erik:** Art, I couldn't agree more. And I'll just point out a couple of other things.

If I look at, say, the January 3 curve (at the top in orange), that's what we call structural backwardation, meaning the entire curve is in backwardation. It's a downhill ride all the way from the beginning to the end.

Well, how do you get from that to structural contango, where the entire curve is an uphill climb from the front month all the way out through the back of the term structure? The answer is it always starts with exactly what we're seeing here first.

It starts with the flattening, like you see around January 17, where you don't really move into contango, but the first few months that were in backwardation just go flat. And then the backwardation starts.

And then you get a little bit later, like we see on January 24, where there is just a tiny bit of contango at the very front of the curve. Just the first spread is in contango. The rest of it is pretty much – there is a flat period and then backwardation.

Now, February 5, you're seeing the beginning of this uphill. And the way this would get from here to an outright structural contango would be the front-month price keeps falling.

Think of it like it's pulling that left little diamond there above the "b" in "February" down. And eventually that hump comes out of the curve and you're just looking at a straight uphill ride into structural contango.

I think that's where we're headed.

And if that's the case, it changes a lot of dynamics.

As you say, suddenly storage becomes much more premium. I think it's going to be very interesting to see whether the storage accumulates in Cushing, Oklahoma, the way it used to.

Because what's happened since the last time that the market had an abundance of extra oil where storage and storage capacity were an issue, it's been a whole bunch of changes in the pipeline infrastructure.

So the old assumption that we had was, oh, boy, the market is slowing down. That means inventory is going to pile up in Cushing, Oklahoma specifically.

I'm not so sure that it's Cushing, Oklahoma where the inventory piles up this time.

What are your thoughts, Art?

**Art:** Right. Well, before I answer that, let's go back to a comment, maybe the last comment you made on the previous slide, which is, oh, well, we're not in contango, 12-month contango yet.

Well, actually, the day before, Tuesday, the 4th, we were.

Okay.

So we got into negative 12-month spread and then we had that little glimmer of hope yesterday that moved it up to whatever it was, 13 cents. So it moved it back into backwardation.

But, yes, I'm watching Cushing really carefully. It's a little bit of a buffered system that we're looking at right now, Erik. So I don't know that the signal is going to be very clear on Cushing for several weeks.

And the reason I say that is that US, both crude oil and crude plus refined product inventories, have fallen for the last several weeks.

And looking into the details of that, what's kind of driving that right now is that US refiners have moved into maintenance season. And a lot of people, maybe they pay attention to that once we're deeply into maintenance and intakes are way down. But we rolled over into maintenance last week.

And that gets expressed in a couple of ways.

That drives more withdrawal from crude.

And the other thing that was really interesting in yesterday's storage report is that net product imports jumped a lot. So what that says is that we are apparently – or the refineries are shutting or closing or slowing their intake of crude.

But perhaps we're exporting less, is the bottom line. And possibly that's because domestic consumption is up.

Although a couple of the charts I put out yesterday, consumption is a mess. I mean, EIA is really having a hard time keeping track of domestic consumption. It's been jumping up and down by 8, 10, 15 million barrels a week. Which we know is just not real.

But, anyway, back to your initial question.

Yes, I'm keenly watching Cushing, Oklahoma inventories and comparative inventories. But, because of this coincidence of refinery maintenance beginning, I'm not confident that I'm going to see that effect immediately.

**Erik:** So far, Art, we've been talking about West Texas Intermediate crude, which, of course, is the US benchmark.

Let's talk about some of the same figures as they apply to Brent, which is the North Sea European and generally regarded as the worldwide oil benchmark. How do both the price numbers and the spread numbers in terms of those time spreads look on Brent?

That's on Slide 7.

**Art:** Yes, Slide 7, Erik, to me is telling a really important story.

What this chart really screams out at me is, looking at the 12-month spreads from Monday or Tuesday, we were at 390. Dropped in a matter of one or two days all the way down to negative 9 cents.

So we went clear into contango. I mentioned that a similar thing happened with WTI a few comments ago.

Here, we went back up a little bit into backwardation.

But the difference and the significance is that drop is almost a vertical line straight down. And I mean it jumped out at me when I made this chart so much that I went back and rechecked the data, even though I knew that there was really no way the data was wrong. Just because it's so, well it's just so shocking.

And of course the price did the same.

So I've been watching the way that Brent has responded, both in terms of spreads and price, compared to WTI. And for the last several weeks, I mean really since near the end of last year, Brent has not been as strongly affected in either area as WTI.

WTI has really taken it in the shorts much more than Brent. And I don't particularly have an explanation for that. Maybe you do. I'm sure Chris Cook does.

Maybe it's rigged or something.

But, now, all of a sudden, just this week, we're seeing Brent adjust and go to exactly the same place that WTI does.

So, back to the points that both you and I made on the forward curves, this thing is now in full swing. And both markets, Brent and WTI, are heading in a parallel direction, which is not good as far as price goes. Unless you like low price.

**Erik:** And let me just put a little more perspective on this in terms of how you can interpret this chart. Because, just as you said, Art, this just jumps off the page to me. But that's because I'm used to looking at price and time spread next to each other every day.

Listeners, if you see the 58.16 print at the bottom right end of the chart here, just up and left from where it says February 3 of 2020. You see that sudden jump all the way from \$58.16 right down to \$53.96.

So that's more than a \$4 jump there.

Boy, is that just a bunch of retail traders in the USO ETF panicking? Or could there be something real to this?

The way you tell is you look at what the time spreads are doing. Because, even though the front-month price can easily be subject to panic impacts from inexperienced traders, the guys trading the time spreads know what they're doing. They're not going to panic unless there is a reason to panic.

What we see in this chart is they didn't just panic. The panicked more than the front-month

price guys did. All the way up from \$3.90 down to -\$0.09 on that 12-month Brent spread.

So the fact that the curve is falling faster than the front-month price says to me that the smartest traders are more concerned than the market place on whole.

And that's very much in line with my big-picture view of this, which is I think we've got a lot of complacency in the system because a whole bunch of people are saying, don't worry, it's just a bad seasonal flu.

In reality, I think it's going to prove to be a lot more. It may be that not a whole lot of people die. We're getting more and more news that suggests that the death rate may not be as high as originally feared.

But in terms of economic impact, it doesn't matter.

If everybody is afraid to travel and cancelling their airline flights, we've got a problem, Houston, when it comes to oil.

It doesn't matter whether the death toll is not as bad as we thought. If there is a pandemic that is spreading rapidly, it's going to affect travel. It's going to affect oil prices.

So this chart, I agree with you so far, is the one that really jumps off the page for me.

Let's keep the discussion going, though, and move into Brent time spreads.

As a little bit of background for our listeners, because of the storage in Cushing, Oklahoma, it's much easier for the WTI curve to move into contango at the front end of the curve. Brent usually doesn't do that unless there is an awfully good reason for it.

And, boy, what do we see here on February 5?

Take it away, Art.

**Art:** Yes, so the first thing that jumped out at me last week, last Friday or Saturday morning, when I plotted up the January 31 forward curve (the one that's in black with the dashed lines), is, okay, great, price fell a few bucks. But how weird that the first couple of months of the spread steepened.

In fact, the backwardation, from where it says 58.16 down to the inflection point a month or two later, is the steepest anywhere on the chart. That's like a super-backwardation.

So I scratched my head and said, wow, what the heck does that mean?

And then, of course, plotting up yesterday's February 5, lo and behold! The world changed

again.

And, for reasons that you can explain better than I can on the difference between WTI and Brent, we moved into a contango situation. Which is certainly not as profound or impressive as WTI, but everything else about it is the same.

Which is to say that, not only have we gone from super-short-term backwardation to contango, but the whole curve has shifted around. The bottoms moved down. The tops moved up. And there is very, very little backwardation all the way out into towards the end of 2021.

So this, to me, says, wow. Something very, very profound potentially is going on. Or markets are reacting with a clear eye towards the possibility that something super-profound is happening, I guess is a better way to put it.

**Erik:** I couldn't agree more, Art.

And, just to expand a little bit for the benefit of our listeners, the reason these curves are different is the WTI curve is based on the US system where there is a big storage facility in Cushing, Oklahoma. The futures contracts are settled in Cushing, Oklahoma. And any actual physical deliveries occur from that storage facility.

What that means is, even though contango and backwardation historically kind of have a meaning in terms of supply and demand, they also have an influence. Or they are greatly influenced at the very front of the curve by the excess capacity, the spare capacity of storage in Cushing, Oklahoma.

The Brent curve doesn't have any storage facility. There are no big tanks in the middle of the North Sea. So there is no impact of the storage facility and the storage premium creating contango at the front of the curve.

When the Brent curve goes into contango at the front of the curve, it means exactly what it sounds like it means. Which is the market is now switching from a concern about scarcity to a concern about excess and not being able to get rid of the oil (as opposed to not being able to find enough oil in order to satisfy demand).

So the fact that we see that little bit of uphill on the February 5 line on the bottom left of this chart on Page 8 really jumps off the page for me.

Let's move on to Page 9. What's going on here, Art?

**Art:** Well, this is just a way of comparing the term structures for Brent over the last two weeks with that for WTI. And I really don't have a lot to say about this except that it allows us to compare and contrast on the same chart.

**Erik:** Moving on, then, to Slide 10. We're looking at a comparison of the path that Brent and WTI have taken over the last several months, both in terms of price and in terms of the spreads.

What do you make out of this chart? And what conclusions does it bring you to?

**Art:** Let me emphasize, before I answer your question, that price is price.

But the spreads, I've normalized them. I've scaled them so that the lowest point is zero and the highest value is one, so that we can accommodate the variants and look at them scaled the same way.

So what this shows you is a point that I made earlier, which was that, up until really the very last part of 2019, WTI spreads were actually showing more improvement than Brent.

And you know these things flip around.

Then where we see the black dot with the "1" above it, that's where Brent reached its maximum. And right next door to it, to the right, the red dot and the "1" is where WTI maxed out.

And then, as they both started falling, what we see is that the WTI normalized spreads now are disadvantaged relative to Brent.

And that was the point I was making, that ever since prices, looking at the top two curves early January, once prices peaked, it appeared that Brent was not being as strongly affected. At least in terms of spreads, as WTI.

But then, lo and behold, back to our discussion of the previous spread chart on Brent, we've got that vertical line that just falls out of the sky. And both WTI and Brent normalized spreads reached their lowest point of the last year and a half on exactly the same day, which was February 4. And then they both jump up a little bit.

So what this tells me more than anything else is whatever advantage Brent had for the last five weeks or so, it's over.

Both markets are now in complete agreement that we've reached a multi-month or 12-month low, actually, on both WTI and Brent. Which goes back to your observation that everybody is very, very concerned who are paying attention to these spreads.

**Erik:** Moving on to Slide 11, Art, we're getting into your comparative inventory model, which really is the center of what you do and what you're famous for.

For any newer listeners who are not already familiar with the comparative inventory model and what it means, we're not going to really go into a lot of detail because we just don't have time

to do that today.

However, I strongly encourage any new listeners to go back – just put Art Berman’s name into the search box at macrovoices.com.

Look for the first two or three interviews that we did with Art a few years ago.

I think one of those interviews is a full interview just on the subject of the comparative inventory model and why it is the most effective way to model oil prices.

[Art Berman: Crude Oil Special Part 1](#) (June 2017)

[Art Berman: Crude Oil Special Part 2](#) (June 2017)

[Art Berman: Comparative Inventory draws spell higher oil prices](#) (October 2017)

For listeners who have at least some familiarity with this, let’s go ahead and dive in.

What is the comparative inventory model telling you now, Art?

**Art:** The simple story on comparative inventory, so everybody is on the same proverbial page, is all I’m doing here is plotting the current storage level of WTI crude and refined products, minus the five-year average, versus the spot price.

That’s how this thing works.

What this is showing me is that we have – the blue line is a relatively consistent fit. It’s not meant to be a mathematical regression. But it is a fit that connects pretty much everything in 2019, 2020. And, in truth, it’s probably good back at least to 2016 or 2017.

And what’s happened is that we were pretty much above the line, above the fit line (the blue line) for many, many weeks.

And over the last two weeks we’ve dropped down below. So the orange dot is two weeks ago. That’s the 24th. And the yellow dot is the 31st, which is the result of yesterday’s EIA storage report.

So what this is showing is that, if we believe that we’re still calibrated to that blue line, that the front-month price as of yesterday when I made this chart of \$51 that would say, wow, we’re \$9 undervalued based on the comparative inventory yield curve.

I do believe that that is true.

But what I have seen over the years is that it’s not unusual when markets get into heavily

sentiment-influenced price discovery for there to be big excursions from this line. And several of those are circled in red.

And some people say, oh well, that shows that the comparative inventory model is no good because it's not a mathematical regression.

I argue quite the contrary.

I think those excursions are at least as important as the points that plot on the curve. Because those are, as I said before, that's the way markets figure out what the right price ought to be.

They overshoot, they undershoot. And they see at some point, okay, nobody is willing to buy this contract whether it's long or whether it's short. And that's when things calibrate back to the line.

So bottom line here is if we compare where we are today, or where we were as of yesterday's storage report (the yellow circle), and we compare that with December 28 of 2018, the \$45.26, we're heading in that direction.

And we can talk more, if you like, about why this excursion is as great as it is.

But, for those who follow my work more closely than others, you may recall that, for a while before the recent price run-up at the end of last year, I was speculating, wow, this yield curve may have been reset to a lower trajectory.

I haven't drawn that on here because I need another week or two of data.

But it would not surprise me if what we're going to see evolve here either is a dramatic overshoot or undershoot (depending on what the right terminology is) – that we're going to be well below the yield curve line for a while. Or that the market is in the process of devaluing WTI just as it did after the price collapse in 2014-2015.

So it's unknown right now where we're going. But, my sense is the trend is clear. We're going down. Price is going down. It's going down a lot more than its movement in comparative inventory would suggest.

In other words, January 31 should have been right next (just to the left of January 24, the orange line). And, instead, the price has pulled it down. And that's the trend that I expect to see more of in coming weeks.

**Erik:** Art, there's a lot to unpack in terms of interpreting this chart. In the interest of objective journalism, I want to cover this from both angles, both people who agree with us and people who disagree with our view that this coronavirus thing is not over yet.

So what we're really seeing here is that \$60 is what the yield curve is valuing the fair value of WTI West Texas Intermediate crude oil. \$60.

We're almost \$9 below that right now. Which means that if it turns out that you and I have this wrong, and the mainstream media has it right, and the coronavirus is nothing more than just a seasonal flu on steroids and it's just nothing to worry about, it's all going to blow over soon, really what we should expect is probably a retracement of price back up toward that \$60 mean. And, hey, if we tend to overshoot numbers, that would suggest maybe you go back up to \$61 or \$60, overshooting that fair value before it comes back down to it again.

On the other hand, if you and I have this right and this coronavirus thing is a big deal, then the way you have to look at this is to say, okay, in past history when there have been deviations from the yield curve based on news events and various factors affecting the market, how far do they typically go?

Well, the price deviation that happened in Christmas of 2018 appears to have been driven primarily by changes in Iran policy. That was a significant geopolitical change.

I don't think it was as big of a deal as the coronavirus. That took us all the way down to \$45, as you see on the red dot there.

At that point, that was probably what? About \$13 below the yield curve line.

But if I look over at late 2015 early 2016, when we had kind of the bottom of the oversell even, which occurred after the Saudi change of policy in 2014, at that point we're getting to – just eyeballing it, it looks to me like about \$20 below the yield curve.

So would I be correct, Art, to assume that if I look at that oval on the bottom right corner of the slide, where we get down just above say the "ar" in the word "early," that bottom dot there is about as far as we've gotten away from the yield curve in the past.

Would it be reasonable to say that's about as far away from the yield curve as the coronavirus ought to take us? Or is that not a fair comparison?

**Art:** Well, I think that's the only comparison that we have on this particular chart. I would have to go back to charts that included the 2008-2009 financial collapse if we really wanted to make a meaningful comparison.

Because, again, you and I don't know who's right. But we happen to agree on this. And that is that the late 2015, early 2016 excursion from the yield curve was not really based on anything structural in the market.

Except there was a whole bunch of oil piling up in places like Cushing, Oklahoma and pessimism about Chinese economic growth and a number of other factors piled on to move things down

for a brief period down to \$30 or even less.

So let me say I agree that that's the next support level (if you want to think of it that way) if it gets below \$45.

But I want to say that there is nothing on this chart that in any way calibrates the potential magnitude of what this coronavirus might do to global markets.

So let's just say I would not be surprised if we got to \$30 again. I'm not predicting that. I'm just saying it wouldn't surprise me unless, again, you and I are just totally out to lunch on this.

But the way these things typically work, if you look at the number of dots in any one of these ovals, each one of those is a week. So once you've overshot or undershot, the market does not return. It doesn't snap right back to the yield curve in any less than 6, 8, 10, sometimes 15 weeks.

Once that downward momentum gets going, even if the news gets very good, the professional traders out there are going to be saying nah, maybe, but we're not betting on it.

Once this momentum starts going down, I don't know how low it's going to go but it isn't going to snap back in a couple of weeks. It's probably going to take a few months, assuming that everything starts looking better right away, which I don't think it will.

**Erik:** Art, so far on Slide 11 we've been looking at the comparative inventory yield curve for WTI (West Texas Intermediate). Slide 12 is the same thing for Brent.

In the interest of time, I don't want to go into detail on this. Our listeners can get a sense of how the Brent figures are really showing us the same thing that we're seeing in WTI.

Let's move on to Slide 13, where you're looking at the tight-oil rig count and how it has changed direction.

What's going on here?

**Art:** Well, this is something we've seen for a few months now, Erik, And I won't get into the details, the mechanics. People can look at it. I've lagged the rig count back so that we can compare it to price.

But we've seen an upturn.

So the tight-oil lagged rig count has increased by 20 over the last two months, which is not the direction that it seemed to be heading the last time. Well, it was heading slightly in that direction.

But where I take all is that if we compare this to the next slide, which shows tight-oil production growth (Slide 14), what it says is that, at best, I think that tight oil is going to grow very, very slowly. It's almost growing at zero.

So as a factor in the world, we now, I think, can cross out the fact that continued rapid growth of US tight-oil production is going to continue to be a drag on world supply balance. That seems to be getting better under control.

**Erik:** Art, we're going to have to leave it there in the interest of time. But before I let you go, first of all, for any listeners who are not familiar, the free subscription to your blog at [artberman.com](http://artberman.com) has got to be the best free resource that exists anywhere in oil markets.

So if you're interested in crude oil or energy markets in general and you're not subscribed to Art's blog, you'd be crazy not to do so.

But in recent years, you've also begun offering a premium service. Tell us what's involved in that and what other services you offer.

**Art:** We are in the process of updating the website. What you're going to be able to do is continue to get the stuff that's already out there that's going to remain free. But if you want to get detail on the comparative inventory or the rig count or some of the charts, that's going to be, like, a \$25 a month kind of fee.

If you want to bundle that up with a monthly newsletter, it's going to be very slightly more. Still a very low-cost affordable monthly service that gets you past the publically available data. So that's where we're going, Erik

**Erik:** And I can't recommend it highly enough. Unfortunately, we're out of time.

Patrick Ceresna and I will be back as [MacroVoices](http://MacroVoices) continues.

And be sure to stay tuned. We've got Kevin Muir coming up to talk to us about Tesla and what's going on in the market this week.