Deposition of Docket No. TG-131255 - Vol. I

Re Inquiry into Methods for Setting Rates for Solid Waste Collection Companies

October 8, 2019

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BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION

Re Inquiry into Methods for) DOCKET TG-131255
Setting Rates for Solid)
Waste Collection Companies)

TECHNICAL WORKSHOP, VOLUME I

Pages 1-73

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PAUL DIVER, BRG (via Skype)
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ANN LARUE, UTC (via Skype)

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LACEY, WASHINGTON; OCTOBER 8, 2019

9:30 A.M.

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P R O C E E D I N G S

MR. KERMODE: So this is the technical workshop for the inquiry into methods for setting rates for solid waste and collection companies. It's TG-131255, and I want to thank everyone for coming in. I think we've been waiting for this one for a while as far as getting to the point where we can actually talk technical.

If you remember in the original comments, we -- the few that we got said, well, we don't know what we're commenting about because you haven't provided anything, which was a valid answer. So we've gotten to the point now where we actually have material we can bring forward and discuss it.

So most everybody knows, my name's Danny Kermode, and I'm the assistant director of Water and Transportation. I'll be trying to facilitate this discussion.

Couple of housekeeping things. First of all, we have a court reporter actually recording what we're talking about so that the Commissioners actually have a paper copy of what the discussion is and hopefully have a better understanding versus going through recordings and trying to find stock numbers so you can hear what the discussion is. So in that we have a court reporter, if you could say your name before -- before you make your comment.

You'll notice the tables have no microphones. They're up there, and they're supposed to be -- so far they've worked really well, so we shouldn't have any problems with turning on and off mics. Just be aware that they're there.

Also, bathrooms are right across the -- the hall here. The handle appears to be locked. It's not locked, just push, and you'll go in. The little green light there. So I don't want somebody stuck out there and not being able to do anything.

So first thing I want to do is probably start with Weldon, and we'll go around the room and have introductions.

MR. BURTON: Weldon Burton, CPA.

MS. CAMPBELL: Sara Campbell, Sanitary Service Company.

MR. TORRE: Marc Torre, Sunshine Disposal & Recycling.

MR. WILEY: David Wiley, Williams Kastner.

MS. GARLAND: Heather Garland, Waste Connections.

MR. JOYCE: Kevin Joyce, Waste Connections.

MR. VASCONI: Marc Vasconi, I'm the director of regulatory services here at the UTC.

MR. FUKANO: Harry Fukano, Assistant Attorney General.

MR. SHARBONO: Benjamin Sharbono, Water and Transportation.

MR. KERMODE: Danny Kermode, assistant director of Water and Transportation.

MR. YOUNG: Mike Young with Water and Transportation.

MR. CHARLE DIETRICH: Charle Dietrich, Basin Disposal.

MR. DARRICK DIETRICH: Darrick Dietrich, Basin Disposal.

MR. SEVALL: Scott Sevall, Regulatory Services.

MS. VAN METER: Tiffany Van Meter, Water and Transportation.

MS. WALDRAM: Lindsay Waldram, Waste Connections. Sorry.

MR. WONDERLICK: I'm Joe Wonderlick with Waste Connections.

MR. LOVAAS: Brad Lovaas, Washington Refuse and Recycling Association.

MR. CHELMINIAK: John Chelminiak, Waste Management.

MR. LLOYD: John Lloyd with Sunshine Disposal & Recycling.

MR. KENEFICK: Andrew Kenefick, Waste Management.

MR. KERMODE: I'm going to try -- can anybody on Skype hear us or respond?

MR. TYLER: We do have Cleve Tyler from BRG.

MR. KERMODE: Great.

MR. DIVER: And Paul Diver from BRG.

MR. KERMODE: Anyone else?

MR. WHITTAKER: This is Rob Whittaker listening in.

MS. LARUE: This is Ann LaRue from UTC.

THE COURT REPORTER: I couldn't hear that.

MR. KERMODE: Ann -- Ann LaRue, UTC.

Okay. So far so good, guys. So this is -- I hope everybody picked up some agendas and matrix over here. This is the -- the agenda what we're going to be looking at. Initially, we're going to have a discussion of the purpose of the workshop and review of -- a light review of the Staff recommendation. It's been out since

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January. I think most people have it -- have already reviewed it. I find the -- the key point will be the presentation by WRRA. Cleve and Paul will be doing that over Skype. We have a fallback if the Skype doesn't quite work right.

Once they're done, we'll go ahead and discuss the model attributes matrix. And what's important about the matrix is, we find this being what -- what we call a kind of the levers and dials of the -- of the model, of the proposed model. These are the things we turn and twist and change the numbers. And so a lot of them we already have agreement on and some we disagree on, and we're also going to look at if there's any other observations that we should be considering. Then we'll go on to next steps and the process, general comments, and then we'll adjourn. I think we'll make some pretty good headway. We've done a lot of front-end work here, so I think the discussion will be crisp and on point.

So -- so the purpose of the workshop, we sent out a -- a notice in August announcing the -- the workshop. We had to change the date. But the intent of it was to discuss technical issues related to the Staff recommendation at a technical level. When -- when we have a general workshop, usually the Commissioners are here and the -- we don't get into the -- the -- the detail of things. In this case, we're able to if somebody wants to discuss log-linear over natural log or log 10, we get to do that, versus the Commission probably we wouldn't want to do that.

We also want to highlight areas of agreement and disagreement in the workshop. That's a big point, and we want, once again, to get it on the record so when the Commissioners look at it, they have a crisp, clear understanding of where we agree and where we disagree.

We also want to allow discussion of alter- -- alternative approaches or concepts. So we're not pinned in by my report or by what Cleve might come up with. If -- if there's other avenues that you think is important to get on the record, I -- I think this is the place to get it said, and then we actually have that to present to the Commission.

So review of the Staff recommendation. Back in January 16, we released the recommendation on the methodology for deriving operating ratio for solid waste haulers. It's after what -- what was it, five, six years of -- of hard work and a couple dead ends, but I think we finally got a framework to work from.

What's unique about this report is it computes recommendation, it computes return on

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investment before income tax and interest. In contrast, Lurito-Gallagher has -- has input income tax and interest and takes it all the way down to net income. We use the seven-year data set, Lurito-Gallagher used a ten. So we have a little shorter period, which is really a -- and we'll talk about it -- a little compromise between how quickly the model can react to economic implementses [sic] and the stability of the number.

It recognizes leverage of risk. As a company comes [sic] more leveraged, theoretically they become riskier and theoretically, they should get a higher return on equity. Lurito-Gallagher did not recognize that. You -- the more you leverage, your equity returns stays the same. If you have a high equity component, the equity level stay -- return stays the same, and I would suggest that's contrary to financial reality and theory. So -- so this model recognizes that higher your leverage, the higher the risk.

Updated financial data from comparable companies. That was valid when the report came out, and we have once again updated. Luckily, I -- you know, one thing I always say about -- about the industry we work in, it -- it's -- it's a -- it's like a flower opening.

It's -- it moves slowly and -- and so things don't rapidly -- we don't have a volatile type of industry. So as we move forward, I think it's -- it's a nice smooth effect that we can have some security as long as we have a -- a structure that supports the nonvola- -- volatility of the industry itself.

The data -- the report also recommends updating the data at least every three years, but no more than five, and that's something else we can talk about. This -- we -- we talked about there's factual issues that we can abate and try to find answers to.

Then there's policy issues. And this I would suggest is a policy issue, to what extent does the Commission and industry want updated data. And -- and -- and that's, you know, under the environment of cost being involved to update it.

So that -- like I said, I wanted that to be fairly quick because I think we've -- we've done it on a number of workshops already and gone through it.

So is there any questions on the purpose of the workshop or the report itself before we move on to the indus- -- WRRA's response to it?

Okay. Paul? Hello, Paul?

MR. TYLER: Hi, this is -- yeah, it's Cleve Tyler and -- and Paul Diver. I don't know how we share here, so we --

MR. KERMODE: Okay. I'm going to -- I -- I was taught -- I was taught this yesterday, so make presenter. So I'm making you a presenter, I think I can make Paul -- yep, I can make both of you presenters. Now, how do I transfer control?

MR. TYLER: Probably by just -- I think I just have to accept being a presenter.

MR. KERMODE: Oh, okay. Okay. Let's see what happens. Look at that. Well done.

MR. TYLER: Can you hold on just a moment? It says that I'm presenting, but you can't see my screen as -- yet?

MR. KERMODE: It says presentation is paused.

MR. TYLER: Ah. Well, let me -- let me stop presenting and then try this again.

MR. KERMODE: Apparently you should feel free to start.

MR. KENEFICK: Maybe if you make just one of them a presenter, whoever's controlling the PowerPoint.

MR. KERMODE: Yeah, but who do you -- I'm going to try -- something's going on.

MR. TYLER: Yeah, maybe you should try --

MR. KERMODE: Or, you know, Cleve -- well,

you would know --
MR. TYLER: Can you see my screen now? You may see my screen now.
MR. KENEFICK: Yep, good.
MR. TYLER: Okay. Okay. Do you see the full -- do you see my screen?
MR. KERMODE: Now, as a fallback, I got your PowerPoint ready to go.
MR. TYLER: Right.
MR. KENEFICK: I'm just wondering if both of them being presenters, then they might be competing with their screens.
MR. KERMODE: I'm going to make -- who -- who has the presentation?
MR. TYLER: Why -- why don't you try making Paul the presenter?
MR. KERMODE: Okay.
MR. TYLER: His -- his computer seems to be working getting into Skype better than mine did.
MR. KERMODE: Okay.
MR. TYLER: And let's see if it works that way.
MR. KERMODE: There it is. Okay. So Paul is the pre- -- sole presenter now.
MR. DIVER: Can people see my screen?

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MR. KERMODE: Yes.

MR. TYLER: Okay. And -- and here's an interesting question, can you see our faces or are we not video -- we're not -- there's no video --

UNIDENTIFIED SPEAKER: You should have shaved this morning.

MR. KENEFICK: We cannot see you.

MR. CHELMINIAK: No, we can't.

MR. TYLER: Thank you, Mr. Kermode, for this opportunity --

MR. KERMODE: Ah, just a minute.

MR. TYLER: I'm sorry?

MR. KERMODE: Oh, just a minute. There you go. Okay. Go ahead.

MR. TYLER: Okay. Yeah, well, thank you for the opportunity to present. This is Cleve Tyler at Berkeley Research Group. As -- we've spoken a number of times before. I've spoken, I think, to some of the other individuals in this room. And those of you who I haven't met before, you know, I'm -- I look forward to showing [sic] with you our current thinking about the issues here.

So today, we're going to address the -- some of the methodological issues associated with the current LG and the proposed DuPont method. And we're especially going to focus on the regression analyses that feed into the models, either the LG or the -- or the DuPont. We will be filing comments in a -- or I expect we'll be -- we'll be filing comments in a few weeks. In there, there'll be a lot more detail about what we have to say today, and there will probably be collaboration as well with the ones to -- with the ones today.

Okay. There are our names and the inquiry. Okay. So I think the idea here is, we -- we wanted to take a very principle approach to thinking about these issues. We -- we know that the emphasis for a lot of this is that the LG uses data from many, many years ago stretching back to the late '60s into the late 1970s, and -- and the thinking is, is that data is pretty antiquated at this point, and that it makes a lot of sense to use more recent information.

But beyond that, we -- we also recognize that we're seeking a method that will be updated going forward as -- as Mr. Kermode pointed out. And so to that end, we -- we want to have a method where the data can, on an ongoing basis, be updated so that in ten, 15, 20 years from now, these issues don't have to be revisited again. It's a [inaudible] issue of -- of updating with more recent data at that point in time.

So in -- in our view, it -- it makes sense to lay out some ideas, some principles upon which we would base some of our decisions here, some of our recommendations. We want to keep a logic-based approach, something that is understandable so that when anyone looks at any of the specific levers or decision points, it's clear what is chosen and the rationale for that decision. We -- we want to use standard approaches for the dealing with -- with the analytical decisions that arise and that we consider. We want those approaches to be reliable, we want them to be replicated and to -- to ensure accuracy, of course. And then we also want precise documentation about each step of the process so that -- so that there's no subject -- subjectivity that is introduced at future points in time.

And then I also wanted to point out that the results that come out of the regression analysis can be put into either the LG or the -- or the DuPont model as proposed or potentially some other -- other model that takes into account the relationship between at the turnover and -- and profit margins. So this -- this commentary isn't necessarily just about one -- one or the other, but really focuses on that regression analysis. And -- and we expect that we'll have more to say about the LG and the DuPont in particular in the comments in a few weeks. But this particular presentation is going to focus on the -- on the regression part of the analysis.

So one thing that I think it makes sense to address is the idea that -- and -- and this is something that is discussed in the January proposal, I've also seen it in other places like the Bell study from a number of years ago, the idea that the -- the older data is not appropriate anymore because that data was from a high inflation period, and we're now in -- in a prolonged low inflation period, and so the -- so the data just isn't relevant any longer. And -- and I want -- wanted to address that because there's sort of a premonition that, well, that means that -- that profit margins must come down because of this issue.

So one of the things that -- that I started looking around and doing some research into the economic literature, well, has anyone actually addressed this before and -- and it -- it doesn't take very long to go to Google and start typing in return on equity, inflation, profit margin, and DuPont. And an article was written -- it's about 20 years old now -- by Frank Riley, who was at the University of Notre Dame at the time, who -- who analyzed the impact of inflation on ROV growth and stock prices using the DuPont model. And --

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and he -- he wasn't doing anything more really than looking at some correlations over time and -- and assessing how these things move together and change in the context of the DuPont model.

But -- but I thought one of the things that stood out to me about that was that he wasn't really finding any strong correlation between profit margins and inflation. In fact, he -- he found a negative .1 correlation. So -- so we thought, well, you know, it -- it might make sense to look here as well to see, you know, what does, you know, our data show for the transportation industry.

So one of the things that we did is if you take the rule for SIC codes that is expressed in the January proposal, now, this is before any exclusion of SIC codes or anything like that, and then you convert the information, this is from Compustat, and it goes back over a period of 51 years. So we go back to the beginning of the LG time frame that is used, and -- and you convert that information into one data point per year, and -- and you start looking at what -- what does this relationship look like.

And -- and you don't really see any correlation. We calculated a correlation of .05. You can see that there's a couple of years that have relatively high profit margins over 14 percent, and -- and those are into very low inflation years. You -- you also see some high profit margins and relatively high inflations years. So -- so there's just not much of a -- a correlation here that we see.

Now, if you -- if you also -- if -- if you were to then look at -- at the turnover and inflation, here we see in the transportation industry a negative correlation. And, you know, one -- one might think, well, high -- you -- you know, in high inflation period may be, you know, revenues increase faster than -- than investments would in terms of how, you know, those are reported, and so maybe you would see something like a positive relationship here, but, in fact, there's a negative relationship.

Now, interestingly, the Riley paper that I mentioned a few minutes ago actually does find a positive correlation of about, you know, point -- .44 or so. So -- or whatever that number is in that paper, but so they -- they actually find something a little different than -- than we do for this industry over this time frame. But I think the point here is it's not so much how these correlations work, I -- I think that what matters -- yeah, there we go. So I think what -- what really matters is the idea that -- that I think it does make sense to update the methodologies with more recent data, because the economic realities of firms and the industry do change over time. You know, it -- it -- it may be the case that this industry is flower, so to speak, but flowers do move and change and grow. And -- and so it does make sense to update.

And also the economic environment changes as well. A moment ago we were talking about the inflation and the impact that might have on profit margins and -- and also earnings. And if you -- if you think about businesses here and if we're trying to find comparable companies for those that we -- you know, waste companies in Washington State. Well, companies tend to like low inflation environments. When you have inflation, you see your costs going up. You don't know whether those costs are specific to your firm or to your industry or where you have very limited information about that, there's so much uncertainty, it's unclear how many of those cost increases can be passed on in the form of price increases to your -- your customers. And so firms in a -- in an inflationary environment, their margins could take a hit for those reasons.

But -- but the overall point here is that I think it's difficult to -- to anticipate ahead of time what sort of changes we would expect to see in terms of margins or earnings for companies when you -- you apply the model. So it -- so I think's it's -- it's sort of better not to -- not to -- not to assume automatically, okay, the margins are going to go down or they're going to go up. I think -- I think this is where we let the data speak to us, and -- and if we have a good method, then, you know, the results will tell us what has happened.

So now I wanted to address the selection of companies in the regression methodology. The January proposal uses not just that data from 2010 to 2016, and -- and that -- that I think was a fine choice at the time. The issue, it turns out, is that Compustat has been discontinued by -- by S&P. So on a go-forward basis, that's not going to work. So the sort of, quote/unquote, replacement for Compustat is Capital IQ. It's also by S&P, and so we think that -- that represents a fine data set to use going forward.

There -- there are some advantages to Capital IQ over Compustat. One of them is that it provides for a more granular breakdown of some of the SIC codes. So to the extent that we're applying -- we're applying a rule to certain SIC codes, that gives us a little bit of -- of a better breakdown of companies. It also includes results for some private companies, which is nice, given that some of the -- the regulated companies here are -- are private.

Now, in -- in doing this, in putting the methodology together and describing the methodology, we -- we think it important to have instructions, for instance, describing the downloading of data. This -- this is something where we through this process looking at the Compustat data, it -- it's not as straightforward as you would think. There's a number of choices that are made. There are ways in which Compustat was handling restatements, for instance, that would require some working with the data to get to the right results that -- that would be needed.

And so -- so there -- there -- there should be a description of precisely what is done, but I don't think it should stop there. I think there should also be descriptions of principles used for, you know, why are certain selections made in the downloading of the data, because data sets do change. S&P may change the ways in which data can be filtered, the data that's available. And if those change -- sorts of changes happen going forward, as you would expect they would, that will give the -- the future a guide for how to handle those sorts of things. We -- we can't anticipate everything that might happen, but if there are principles that are likely to address various scenarios in the future, that's certainly preferable.

So when it comes to the specific selection of SIC codes, the January proposal says that it should include companies that load, transport, and deliver without changing or converting what is transported. So overall, I think that's a pretty reasonable way of thinking about a set of comparable companies. You know, it -- it -- it may be the case where we're doing this on a sort of a code-by-code basis. So you're kind of getting a whole group in at one point in time. The Capital IQ and Compustat data have SIC codes in those data sets. They -- they do not have, for instance, any ICS codes, but, you know, that could change in the future. Maybe SIC codes fall by the wayside and -- and other sorts of codes are used. If that's the case, then this rule could be applied to those codes also.

As we were looking at this, looking at some of the companies that -- that come in with this sort of definition, one of the things that struck us was that the conversion or changing or converting maybe is not quite accurate in the sense that you think about the waste collection industry, you know, waste is collected and it's oftentimes contacted, you know, right in the truck, right? So there technically you have something

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that is changed or converted, maybe not very much as compacting, but it is changed. And so is it really right to include that sort of thing in the definition. You know, not quite sure, so maybe we can get a little more precise with the -- with the definition, but -- but I think that the overall kind of direction of -- of that definition does -- does make sense.

One thing we've considered here was, well, you know, maybe this can get a little bit more precise. You know, maybe we could look at some -- at companies that -- that transport using vehicles, for instance. That would essentially remove some of the water supply and pipeline companies from the equation. And so that -- that might represent a -- an alternative that -- that the Commission would want to consider. And -- and so we'll -- you know, we'll address that also in -- in some more detail in our comments in a few weeks.

So the next couple of pages here just lay out all the SIC codes that are broadly in the four thousand or -- or the one digit four industry, which includes all transportation companies.

And then we have three columns over here. The first column is labeled "Staff Used SICs." So these are the codes that were used in the January proposal. This takes into account those that were excluded, which -- which we'll talk about in -- in a moment.

The second column would be a list of the SIC codes. If it says yes there, where if you just by the definition from the January proposal, which SIC codes would -- would come into the equation. One -- one thing I'll point out, by the way, about the Staff used SICs, you'll see a few in there that say implicitly, that is because in the Compustat data, the SIC codes were not broken out as finely as they are in Capital IQ. We -- we were looking at the Capital IQ available codes here, and so these couple that say implicitly here mean that in Compustat, all of those SICs were really rolled up into the two digit 4100 category, but later were broken out. So that's what -- that's what that means.

Now, the alternative, BRG alternative there, is if you were to add the additional criteria that companies would primarily transport with the use of vehicles, then you would see those codes, you get a little bit more restrictive set of codes than the other two, but -- but, again, might be something to think about.

So the first you'll see maybe the big distinctions here are the way rail is handled in the January proposal, but if that's excluded, and there's a -- there's a lot of agreements here, but then you'll see with water transportation that in both the Staff rule SICs and the BRG alternatives, those would -- those would come in.

So here's the second sheet. The codes go on. Again, more -- more list of water codes there, everyone has their transport in on the -- some of the other things, a lot of them are all, you know, noes.

And so we have one more sheet here, the rest of the SIC codes, and we'll -- we'll look at a few more of these distinctions in a moment. You'll see the natural gas transmissions in the pipeline SIC codes come into the January proposal also would fall under the -- the rule that is offered in the January proposal. But of course, the use of vehicles, and so then we included in the -- the alternative that one might consider.

So here's a few pie charts that show the -- a breakdown of companies. One thing to be aware of is that in the January proposal, it may be a bit -- bit weighted towards the pipeline companies. That's the sort of big part of the pie chart here. And -- and so that -- that's, you know, important to know. This doesn't have the number of observations, we'll also look at that -- well, we will include that in our comments in a few weeks so you could look at it both ways.

If you were to take the Staff-proposed rule and not exclude SIC codes, then they're not quite as heavily weighted. This is where you would bring in the rail and the water transportation as well.

And then in the next slide, this the -- the -- if you were to look at the vehicles, this is a bit more -- you know, this -- this -- this is a bit more diversified. You have the, you know, sort of waste refuse companies, they're -- they're in that -- the 4900s. And then, of course, you have the water transportation, which is the orange there, you have air transportation, and then the trucking in here as well. So a bit more diversified, but, again, an alternative and something to be aware of when thinking about what SIC code is what.

So the January proposal excluded some SIC codes that described some that were sort of obviously different presumably than the [inaudible] definition, but yet were deemed not to be appropriate. And then -- and then there was a use of -- of Chow test to specifically look at the certain codes that might not be appropriate. This is something we thought about here for -- for quite a while now and debated. And we -- we think that it makes a lot of sense to -- to make sure we have a good logical definition for the comparable companies that are going to come into the analysis. And then once those companies are in, to not have any further rules for excluding companies.

Now, and -- and we'll -- we'll talk about this a little bit more with respect to the Chow test, but, you know, keep in mind that there is an outlier method that is applied as well. So to the extent that there are observations that don't seem particularly normal, companies that are really outside the norm, particular years that are very strange, those -- those sorts of observations one would expect will get excluded through an outlier method, which is probably a sort of a better way to -- for finding out rather than throwing out an entire SIC code.

Now, with respect to the Chow test itself, a Chow test is a -- is a test that typically is used to identify whether there is structural change in a data set. So the way that I -- I've used it, the way that I've seen it used, the way that I learned that it is used typically relates to time series data where you have a data through time and then at a certain point in time, something changes. It could be some sort of regime change, policy change, facts change, whatever it is, and one wants to test whether that particular change led to a difference in the relationship between variables in a bottle.

So one would look at the pre-period and then test to see whether -- whether in a regression the coefficients in that regression are different, specifically in the post period after the structural change compared to the pre-period. So -- so that's the way that a Chow test typically is used. Here it is -- it has been proposed to be used as a way of taking a group of SIC codes, removing one SIC or for testing one SIC code at a time versus the -- the remainder to see if it is statistically different, if -- the relationships are found to be different compared to the remainder, and then doing that, you know, sort of one at a time all the way around, and then those that are different are -- are sort of removed.

The problem becomes that you don't know -- you don't have a stable base of when -- against what you're comparing. So in a typical Chow test approach, you have a pre-period and the pre-period doesn't change, you -- you know what you're testing against, but if you're testing against that STAT, which itself may be changing because other SIC codes left in the base set might themselves be excluded at a later point in time, you're not testing against the stable base of SIC codes.

That may be suggestive you could use an

iterative approach and -- and you would, you know, test a -- one round and then take some out and then do a second round of testing. But then the problem becomes that if you -- as you remove some SIC codes and the order of which you remove them matter and it -- it might be the case that you remove a code early in the process and then later in the process it's no longer different from what remains. So -- so there's no guaranteeing whatsoever any process like this is going to actually lead to a unique set of SIC codes, that -- that the rules at which you -- you would remove them actually matter -- matter quite a lot.

So -- so we think that it really leads to sort of the circular logic and -- and -- and so, again, it's -- it's really just sort of mixed application of what the Chow test does, what it is meant to do. So it's better to get the definition right to rely on the outlier method that will be part of the process, and then if you don't have the Chow test as part of the methodology, that also really leads to a much more straightforward method, removes some complexity from the analysis, which would have some side benefits as well.

Yeah, so a couple of things with regard to the -- the timing and the variable definition. So the January proposal, it -- it uses seven years of data.

We've done some testing, we've looked at the use of five years, looked at the use of ten years. We think that the tradeoff described by -- by Mr. Kermode in the proposal is the right tradeoff, that -- that by using more recent information, your better path dreams or economic environment, economic conditions faced by the companies. If you get a longer time frame, you're -- you're going to have sort of a more stable result over time. We see that in the data if you -- if you, you know, really run in any model kind of back through time and you look at the distribution of margins predicted by the model over time, if you use five years, you get some of the wider distribution, if you use seven, it gets narrower, and if you use ten, it gets even narrower. And so it seems to us as the -- the seven years is probably, you know, probably a sweet spot here.

I -- I'll throw in one potential caveat which is that the -- you know, if -- if -- if one were to consider the -- the alternative, that's the vehicle-based definition that does reduce the number of companies and therefore the number of observations. And so at that -- if that approach is taken, then -- then it might make the ten-year a little bit more important to look at, which would then increase the number of observations once again. So -- so there's maybe a little bit of a caveat there, but these -- these are all permutations that we'll -- we'll address in -- in our commentary as well.

And then of course we'd want to use the most seven recent years of information. The proposal in January went through 2016 information is now available through 2018 on an annual basis. And so, you know, if this decision were made today, that would be the appropriate time frame to use.

When it comes to averaging, the -- the LG is based upon a regression that actually averages in a couple different ways and then buckets in certain ways and -- and gets the -- the ten data points by doing all of that. The -- one of the issues with averaging is that you -- you're not treating companies with equal weight. You're -- you're, by definition, giving companies that are -- you know, have fewer data points potentially more weight and those with more data points less weight, and so that -- that may not be appropriate.

And so we think that all in all the -- the, you know, statement in the proposal that the data is the data. It's hard -- it's hard -- it's certainly hard to disagree with that statement. And -- and so averaging probably just add some additional concerns that don't really make sense, so we're -- we're comfortable with

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the idea of using the individual data points for those regression analysis.

Then on the variable definitions, the profit margin even over net revenue, that makes sense. The proposal has at the turnover is run is net revenue over average property, plant, and equipment. The -- the one sort of wrinkle here to consider and think about is that when defining the asset turnover in this way, this -- this definition makes sense when combined with the idea of a profit margin because if you -- if you have a profit margin, which is really, you know, realize that the course of the year, you're -- you're measuring the investment at points in time. So it makes a lot of sense to take the average over the course of the year.

There's sort of an implicit assumption in here that the industry is, you know, making investments at sort of a -- a random points in time through the year so that it's not sort of, you know, more weighted towards part of the year or the end of the year or anything like that. We -- we think that's been a pretty reasonable assumption to make. But the -- the wrinkle here is that the number that is used in the spreadsheets, whether it's the LG or the DuPont, is the -- is the last information you have from the -- from the test year, which of course is the most recent

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information you would have for a particular company. And -- and of course what you're trying to do is to try to develop margins on a go-forward basis.

So that provides a bit of a disconnect between what the model finds to be the relationship between ATO and profit margin and what the spreadsheets are doing. So the way -- the way to rectify that would be to actually use the -- in the regression analysis instead of the average PPE, it would be to use the property, plant, and equipment from the beginning of the year. Now, there is a little bit of anticipation there in the sense that it then would sort of in some sense presume that the companies that are -- that are getting their rates would be investing or sort of increasing their investments in the same ways the companies have in the industry at large, but -- but this is something that, again, you know, I think it's something that will -- will sort of show, you know, how -- how this -- you know, point this out in our comments in a few weeks and short -- sort of show empirically, you know, how much this matters.

But regardless of what's decided here, certainly, you know, one would want to have their -- their eyes wide open in terms what is being done or, you know, whether there's a mismatch between the -- the modeling and the -- and the spreadsheets.

MR. DIVER: So this is -- this is now Paul Diver. In preparing a -- a regression model or any physical analysis for that matter, it's -- it's important to consider the -- the impact of -- of outlier. As Cleve mentioned, part of the -- the use of this is to separate from the rest of the data, those -- those data points really which are anomalous, those which inappropriately impact the model and not really [inaudible] for the relationship between ATO and -- and the profit margin. And therefore, it -- it's incredibly important that we -- that we really do consider the -- the overall impact of outlier's analysis. And given that results is quite sensitive to outlier, it's critically important for us to be able to identify those anomalous observations in a rigorous way.

The -- the outlier method specified in the January proposal was to remove outlier's -- such that all observations, all asset turnover and profit margin pairs such that there were asset turnovers above 400 and/or a profit margin above 100. And additionally, to drop any pair that had a single observation a negative value in either variable because these cannot be transformed into the log form of these variables, which are what kind of the specification of the model actually

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is.

So when considering our approach to handle outliers, we -- we considered data-driven outlier methodology, methodologies that are driven by the characteristics of the underlying data, which includes the individual data value, of course, but also wanted to include and consider the correlation of the variance relationship or relationship between asset turnover and profit margin. We wanted method -- a method that is flexible in -- in that it updates as the existing data set changes in the future. That is a time window of the data naturally shifts or moves.

And then it should also take into consideration [inaudible] the symmetry for -- for one that's present in the data, in the underlying data distribution. And then it also has the ability to eliminate outliers from both sides, both the left and the right side of asset turnover and profit margin.

So then we will have certainly more of this in -- in the formal write-up, but one method that we -- we considered is actually a two-stage approach where the -- the first stage is a -- is a calculation of a measure of distance between each pair of data and what might think as center of mass of all of the hairs of -- of data points.

And then stage two is that [inaudible] those distances of the observations for the center of the data and apply methods developed by two authors, Hubert and Vandervieren in 2008, which automatically adjusts robustly for -- for skewness in the underlying distribution of the data, and we'll talk about -- about that a little bit more in just a moment about why that is critically important.

So a bit about the Mahalanobis distance calculation, and I think these two quotes are -- are really helpful to understand not only the importance of Mahalanobis distance, but also its -- its general acceptance in the beauty in using. So the first quote from Mahalanobis distance is a well-known criterion which depends on estimated parameters of a multivariable distribution. So unlike other outlier methodologies which might consider one variable at a time, the Mahalanobis distance is able to look at the multivariant characteristics or the relationship of multiple variables to [inaudible] simultaneously.

And even though there -- there are some missing pieces in the Mahalanobis distance calculation, it's actually quite straightforward and quite simplistic to -- to apply, but it's actually accomplishing a good bit while it does so. I mean, and I think that's captured very nice in the second quote, although the Mahalanobis method seems simplistic at first, the Mahalanobis method accounts for the interattribute tendencies in a graceful way. This simple approach turns out to have surprising advantages over more complex distance-based methods in terms of accuracy, computational complexity, and parameterization.

So one way of visualizing this is that rather than think about distance in -- in just a circular fashion or in a one-directional left, right, up down fashion, the Mahalanobis distance allows for, as I mentioned, a comparing -- or an interdependency between ATO and a profit margin in such a way that you consider distances in -- in more of a shape like an oval, an oblong shape, which takes into consideration these complex relationships between the variable.

And this is important. As the quote on the screen says -- or shows, classical statistics, a univariate outlier as an observation that is far from the sample mean. However, when variables are correlated, you can have a multivariable -- a multivariate outlier that is not extreme in any coordinate.

Some variable that might be a little bit nudge outside of what might be thought of as typical bounds and two directions in outlier while something that might appear to be further away in a single univariant measure might actually not be all that far in terms of Mahalanobis distance from the center. And I think this is illustrated quite nicely by points A and B in the -- on the screen.

Point A would not be considered an outlier due to the complex relationship in the variable that's at issue whereas point B, which might constantly -- or what's in outlier -- or might be considered a nonoutlier can actually be correctly and appropriately identified as being a -- an outlier mistake.

So moving to stage two. When we think about the underlying data distributions, it's important to consider the shape and how the data are distributed around the center of mass. And -- and the -- the big crux here are -- is -- is this symmetry of the data. So we want to consider techniques that will actually appropriately discriminate and identify the two distributions from symmetric distribution.

So symmetric distribution is one like we see in figure A. This is, for example, a data distribution that follows the -- the normal distribution or the typical bell curve shape. And when you have distribution of this type, you can use relatively common methods of detecting the outliers that -- that make assumptions about the methods, such as a box plot method, which is a method that's been around for 50 years or so.

However, when you have data -- a data distribution which is skewed such as a right skewed distribution, which as you can see in figure B, has a long tail to the right, what can happen when you apply these -- these outlier methods that assume symmetry in the data, is you can actually end up identifying outlier -- or identifying observations as outliers when, in fact, they are not real outliers. They are just more of the underlying characteristic of the -- of the data distribution and they -- they should not be -- should not be segmented for the rest of the data as anomalous or -- or inappropriately there in the model.

So the -- the Hubert and Vandervieren method is a -- is a very nice method that was developed in 2008 that incorporates into its calculation a measure of the skewness in the underlying data. And it automatically puts this into account. So you can apply the method to any data distribution, it will calculate a measure of skewness, and automatically adjust how it would identify the threshold or the fence, where it would start identifying outliers in conjunction with that measure of -- of skewness.

One really nice benefit of how the actual calculation takes place in the Hubert Vandervieren method is that when the underlying data distribution that's applied to it is actually symmetric, it produces results that are equivalent to the -- the common box plot approach that I just mentioned that assumes symmetry. So it creates symmetric results -- or it creates consistent results when the underlying data are -- are indeed symmetric, but it can adapt appropriately when the underlying data happens to be right there.

MR. TYLER: So a couple of -- this is Cleve Tyler again. So a -- a couple of other points here with regards to the regression. The January proposal uses a log 10 transformation of the underlying data. We -- we think that it makes more sense to use the natural log. Now, when you use log 10 or natural log, it -- it really doesn't change the results very much one way or another regardless of what model you're taking a look at in anything we've seen. But the reason for this is -- is the idea that we want to use something that will be regarded as a standard approach. Natural log is widely used in economic analyses whereas log 10 is not.

So it's one of those things that if we were to use log 10, someone in the future would sit there and scratch their head and -- and -- well, likely scratch their head. It's hard to predict what anyone will do in the future, but -- but I think it's likely they'll scratch their head and wonder why are we using log 10 instead of natural log. So we think a better approach is to use something that is -- is -- is commonly used across regression analyses today.

With regard to the specification of the regression itself, there's -- there's that log transformation as we're looking at the natural log of profit margins. We have the natural log of the asset turnover ratio, there's an intercept term, there's -- there's a natural log of the asset turnover ratio, which is our relationship between the two, and then an error terms. So this is a very standard progression approach, but essentially specification that is used in the LG as well. There -- there's a few -- there's a few things that we've been thinking about maybe as alternatives to this, but -- but -- but -- but generally this is the right -- this is a decent approach for analyzing these relationships.

One of the other aspects of the January proposal is a -- is a range of certainty the idea that -- that the regulator should have some degree of flexibility when -- when determining what the margins ought to be for any particular company. The January proposal uses the standard error of the intercept term to do this, so it's -- it basically just sort of shifts the results up or down by that standard error.

This -- this I think is something that might be a little bit of a sort of a not quite the right way to think about what the standard error does. The standard error is really trying to provide some idea about the -- the degree of certainty or the confidence that you have about where the true relationship lies between certain variables or here where the true intercept lies. And so to then sort of shift things around by that, I think really kind of, you know, mystifies that concept a little bit. And one way to think of it is well, we have our best estimate of what this relationship is between the asset turnover ratio and profit margins, so -- so why would we move away from what we think that relationship really is.

So it's probably better if -- you know, to the extent, you know, flexibility is perceived as desirable by the Commission and they -- and they want that sort of flexibility, it's better to target well, why -- why do we need that flexibility, why do they want that flexibility. And -- and my understanding is it's

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because there may be certain expenses that -- that might, you know, want -- they might want to take into account or they might want to view differently or investments that they might want to view differently, you know, maybe increase them or decrease them, either one of these. And it would be better to change the -- those variables that are fed into the ultimate model in the spreadsheet at the end of the day rather than using the results from the regressions analysis and moving away from the -- the best estimate that -- that is obtained there.

So -- so -- so that, I think, concludes our observations on the January proposal and -- and -- and our current thinking. You know, we've -- we've -- we're still working, we're still thinking about these issues. Our thoughts are -- in some areas are continue -- continuing to evolve, but -- but that gives you an update as to where we are.

MR. KERMODE: Great. Is there any questions? It was pretty in -- in depth there. I'm -- I'm still figure out the -- the guy's name, the first guy from India, what's that name again?

MR. DIVER: Yeah, Mahala- -- Mahalanobis. It -- it takes some practice, and you're -- the first couple times, you might injure your tongue, but I --

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you -- you can get there for sure. It -- it -- it -- I -- I struggled with that one initially myself for sure.

MR. KERMODE: It -- it'll be on my whiteboard for a while. Okay. Well, I -- I think -- that's what I was looking for from I think Staff's view, is a real good constructively -- you know, constructive criticism put into a framework that we can really work with, I think. I think the next step I would like to try -- I'm going to try and take the presenter away from you, and then I'm going to -- so I just --

Just do what? So I can actually -- okay. Can you see my screen now, Cleve?

MR. TYLER: Not -- not -- not yet.

MR. KERMODE: Okay. Let me -- I'll go ahead and just switch over. High tech gets me every time. Oh, I see, here. Okay. How about now? Cleve? Or did I disconnect it?

MR. TYLER: I think we can -- I think we can see it now, yes.

MR. KERMODE: Okay. Cool. So I went through the -- the 11 different attributes of the matrix and kind of -- and we'll -- and we'll discuss this and we can -- at this point, what I want to do is be able to have an agreement or at least a clearer understanding of where we're headed with it. So we'll kind of step through this if that's okay with you, Tyler -- or Cleve and Paul.

MR. DIVER: That sounds perfect.

MR. KERMODE: Yeah, the -- the first one here, the first attribute talks about the database and, you know, since Compustat does not exist anymore, and we've actually -- I believe we actually have a subscription here at -- for Capital IQ. So we might actually be able to replicate what you're doing. So that's -- that's -- we definitely agree with that.

So on two is comparable companies. Looking at, you know -- I'll hop over to LG, but looking at the -- the report, the proposed DuPont, you actually have more companies than what the report has, that's correct?

MR. TYLER: Yes, that's -- that's -- that's right.

MR. KERMODE: And I like that. Now, it has here as a note Staff recommendation includes natural gas and water companies, excludes water -- I put water shipping and rail. Is that still correct from what you believe?

MR. TYLER: Right, the January proposal does not include water transportation companies or rail.

MR. KERMODE: Right. Now --

MR. TYLER: And that's the -- that's the --

MR. KERMODE: Say that again.

MR. TYLER: Yes, the proposed DuPont does not include water transportation companies or rail and the draft or the -- the -- what we're thinking of right now does include water, shipping, and rail. So that's the difference.

MR. KERMODE: Okay. Okay. So and your -- your definition if I remember right, I don't have it here, you fine-tuned it to transportation by vehicle; is that right?

MR. TYLER: Well, you know, I -- I think that we're in a territory where we think about best practices and you want to follow those certainly. It can be thought of almost like, you know, rings on a tree, and so the transportation with vehicles is probably, you know, sort of a closer more targeted perspective of, you know, the companies that are most relevant, and then if you were to go out a ring from there, then I think what you would do is basically go to what is on the screen here under draft model from WRA, which would basically add in the pipeline companies as well.

So, you know, a -- I think it's an

alternative so to -- you know, to think about and consider, but it -- and -- and there's not I don't think sort of ex ante or -- or ahead of time, you know, necessarily one jumps out as more right than the other. It's really a question of, you know, sort of precision and also how many -- how much data you have. You know, the more precise the definition gets, the fewer data points there are. So that's -- that's really the tradeoff.

MR. KERMODE: I think the -- the big issue I -- or so the -- the sweet spot you said it, is that the sample includes those companies whose risk factors are most similar to the solid waste haulers, and, you know -- and they inherently include those -- those industry-type risks. So I -- actually, I kind of like the vehicle component because that's a risk component. If I look at oil pipeline or -- or water companies, they're -- they're transporting without transforming, but they're -- they -- I can't say they have all the same risk characteristics that would be in your sample.

So at this point, you know, I -- I still want to look deep into your sample, but I -- first of all, you have more companies, which I like and -- and the fine-tuning of it, I'm more comfortable with too. So I -- I think that's a good suggestion that we can keep moving forward on.

Is there any other comments on that in here, in the room?

Let's see here, so I put three here, so elimination of SIC codes. So when you put none, you went ahead and you selected the SIC codes, and whatever they were, they stood on their own until later on when you do the -- the -- the other testing, the outlier testing, correct?

MR. TYLER: Yes, that -- that's correct. Exactly right.

MR. KERMODE: And other than that transportation characteristic -- so I guess number one is still similar. I -- I think that's close to what you're doing, but I -- I know the number two, the Chow test, and -- and I've done some further research since then, since we talked and I agree with you. It seems to be a time series type of thing, looking for changes and a characteristic of a series after some event. And so I agree the Chow test, that's -- that's kind of off my list right now, so I think that was a really good look.

Number of years, it -- it seems we both agree with seven years. What were you saying about it maybe going up to ten?

MR. TYLER: Yeah, I -- I think that the one maybe little wrinkle here is that if ultimately the Commission decides that the restric- -- restriction to SIC codes where companies use vehicles, what that does is it -- you get to that sort of inner ring, so you get more targeted, but you lose a bunch of observations by doing it that way. And so that then might suggest -- it -- it makes the having more data a little bit more preferable. So when you have a broader set of companies, using seven years is fine because we got plenty of data. When you go down to SIC codes of vehicles, you lose some of that information.

And so one way to potentially hone in a little bit better on that relationship is to extend that back out to ten years as opposed to seven. So I -- I think it becomes sort of a, you know, this is where the -- the levers as you described them are -- are -- can be a bit interrelated with each other. So there's just a tradeoff there that -- that I think one would want to consider a little bit.

MR. KERMODE: So you had -- you have 300 companies -- so you got 318 companies, I got 230, but you have less data points?

MR. TYLER: Well, that's -- that's with the -- that's really applying the definition in the January proposal, so it -- it includes all the companies with vehicles, but it also includes the pipelines. If you -- if you were to take -- if you were to restrict it to the companies with vehicles, that -- that number drops too, and I -- I don't remember the number offhand, but less than yours and also less than 200, and -- and it's somewhere in the, you know, 150 range or something like that.

MR. KERMODE: Okay.

MR. TYLER: And -- and because of that, it -- at that point, if you were to use SIC codes based on vehicles, it might make sense to use ten years instead of seven because that then increases the number of data points once again.

MR. KERMODE: Right.

Now, when -- you know, we've talked about this too, and -- and maybe with your studies, I -- I -- I still take the inflationary thing with a grain of salt. I got to look a little closer at that, but doesn't a ten-year analysis, you know, as -- as the economy changes, that puts quite a lag on when those financial data starts to reflect the current financing environment?

MR. TYLER: Right. Yeah, I -- I -- you know, I -- I agree with that. And -- and so this is where, you know, there -- there's a tradeoff in terms

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of, you know, if you were to move to ten years, how much additional information is gained, how many additional data points are gained, and it's worth being a little, you know, more lag and having the -- that additional information because you have three more years or not. I mean, that -- that becomes a -- you know, prob- -- you know, probably all that is still within the context of, you know, best practices. I -- I don't see any of that falling outside of that question itself.

MR. KERMODE: What -- what --

MR. TYLER: I agree there's a tradeoff there. So I think we're in agreement on that.

MR. KERMODE: I -- I had mentioned this before and I -- it'd be interesting to hear your response. I have also mentioned that maybe in a period of a -- some kind of rapid like in, you know, currently rapid inflation or something within three years, things have changed dramatically, what would be -- would it be proper to weigh like the more current years by two or something like that just to give it more weight?

MR. TYLER: You know, I -- my -- my initial inclination is to say, you know, no, I don't think so. I -- I think it's probably, you know -- you know, I think that just adds additional complexities into the analysis, and I don't really --

MR. KERMODE: Yeah, and that -- that was my fear right there, is the complexity. So for you saying not, I -- that made me smile so...

Okay. So for number five, it looks like both -- EBIT on both your model and mine. LG is of course still a little different, but I think that's one of those ones where we can agree on as a -- as a good cut point.

So number six, calculation of ATO. They looked the same, but now you had also talked about using the -- the beginning of the year to -- to calculate it. How does that fit with what we got here in the model, in the matrix, I mean?

MR. TYLER: Yeah, that -- that would -- where it says a draft model for WRA, it says ATO equals revenue over average PPE, I -- you know, I think -- you know, my thinking on that now is that it -- it -- it matches up better to use the beginning of -- beginning of year PPE as opposed to the average PPE. And, again, there's a little bit of a tradeoff here in that if we're -- if -- if we're seeking the relationship between PPE and -- and, you know -- or APO and profit margins, you would want to compute those exactly as it's portrayed here in the proposed DuPont and the draft model for WRA. But knowing that it's going to flow into a spreadsheet that -- that uses the end of test year PPE for a company, that creates a mismatch between the property, plant, equipment used in the spreadsheet versus how the relationship is calculated in the regression model.

MR. KERMODE: Yeah, I --

MR. TYLER: So --

MR. KERMODE: -- I -- I would suggest, though, that we're pretty -- I think we're pretty good. I won't get anything thrown at me. I think we're pretty good at projecting the rate year. So if -- if a company is going to make a material investment middle of the rate year, we should be putting that investment into -- to plant. Because I -- one of the things I -- I'm really focused on and I think the -- the team is, is that we're setting rates for a year, for the rate year, not just for the beginning of the year. And if we can -- if a company is thinking of buying a new -- I don't know, three new trucks, we tried to put that in there. So that -- that -- you know, okay. That's something we can look at and talk about.

As a sidebar also, even as far as the Commissioners go, the Commissioners are used to using a 13-month average for plant over the revenue. So they're -- they're more comfortable with average PPE, I

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think.

MR. TYLER: Yeah. I certainly agree with you, that it depends on how the relationship is used and -- and what inputs flow in. And so if -- if -- if the method there is to take into account the PPE that is expected to come online then -- that -- you know, then -- then yeah, that -- that would make sense to use an average. So yeah, but that -- that's something that, you know, I -- I don't know the details of that, but -- but I agree, that's really the issue is how is the information used, you know --

MR. KERMODE: And I think that is something we really have to keep our thumb on because I think that is -- that can cause material difference either way of the -- on either way of the spectrum, so we'll -- we'll keep an eye on it.

Averaging, I -- I appreciate that. I -- I -- I'm happy not to average, so I think that's one area we can agree on. Let the data stand on its own. One of the things I was saying about LG when it first started and as I started working on my model, is I -- I think the volatility as that turnover ratio increases, the volatility in earnings, I -- I don't know if dramatic, but it certainly you can see it, and -- and it would be sad to average it away. I -- it -- it highlights that there is -- when we talk about higher rate of returns for the solid waste industry, it highlights that risk that their -- their -- those companies are encountering when that turnover ratio increases. So averaging would, in my opinion, mask that.

So number eight, the Mahalanobis and H&V method. The -- so we didn't have -- the -- the -- the Chow test was a way of eliminating data, and then we had very loose like you were saying on the -- on the outliers, we either looked at the ATOs or the -- the profit margin or we -- we just looked at some value that just looked, you know, insane and we would pull it out. Very visual, very subjective, so I -- I'm -- I'm actually excited about this approach. I -- I hit the YouTube last night, and then I somehow slipped over to a football game. It was 50/50 and I went over there. So but I -- I like this. I -- I want to learn more about it, and I think that's something we definitely can -- can head for so...

And then --

MR. TYLER: Well, and in our -- in our -- in our comments, we will be providing additional detail and information about the method, how it works and, you know, we're hopeful that that helps you to learn about it.

MR. KERMODE: Great.

And then number of data points, we'll talk about the -- to what extent we keep those others in there or do we expand it, but I think we're also on the same -- I think we're on the same wavelength. Nobody has suggested added -- adding electric companies or anything like that, so I -- I think we're in the same mind thought, and if we can find a comfortable set of proxies that we can embody into the record, then whenever things get updated, we're not going to be going through this -- this thing again. So that -- that's -- I'm excited about that too.

Then data transformation. Absolutely. I have no problem going to natural log. I think I told you, I did log 10 simply because I looked at the statistical data, and it just was a slightly tighter fit, but nothing that, you know, was material that I -- I like the logic of people scratching their head going why did they go log 10? There must be a reason other than, you know, well, it -- it was shorter. So I have no problem of going to a natural log. I don't think it's a material difference and it makes it a better -- a better model.

The range of return, I'm going to have to talk to the Commissioners. They're used to -- in a normal cost capital setting, they are used to having a range. And so -- and -- and when we first started, I think it was Chairman Goltz had expressed concern that the Lurito-Gallagher produced a number certain, and he was wondering why he didn't have more flexibility. And so we'll -- we'll see where this goes. This might be a policy thing versus a factual issue, so we can move forward on that too. But it does reduce the complexity if we do get rid of that.

Is there any -- and this is why I wanted to make sure to ask the people here, is there any other, what'd I call them, levers or stuff that's important that you think we should be considering or looking at or that we're missing a point on?

MR. LOVAAS: I know you're going to talk a little bit more about -- this is Brad Lovaas. You're going to talk a little bit about next steps in the model and stuff.

MR. KERMODE: Oh, and -- yeah, one thing, and we'll talk about that. What I wanted to talk about is -- and I -- I guess this is as good as any, I -- I -- I understand that there's discussion as to companies that are highly leveraged or have a higher leverage -- I'm sorry, that have higher equity, the return goes down these -- of these LG, whereas on a highly leveraged company, the return is actually going up.

And I wanted to make sure that at least I put on the record that the -- the difference is that the LG, the Lurito-Gallagher method, would compute a return on equity from the start, and it was indifferent as to what the capital structure is. LG then uses that equity amount or -- or return and plugs that into the equity structure. Even if the equity was 10 percent of the company or 90 percent of the company, the equity amount would stay the same. I -- and I say it in the report, I find that -- that's -- that's in correct. That's wrong finance.

If something is highly leveraged, the risk on equity is higher. If something is highly -- or equity rich, the risk is lower. So we -- we have that effect where Lurito-Gallagher had a flat return, and that's why the companies that have a high equity amount would be seen -- when they compare what Lurito-Gallagher produces and what the DuPont model produces, they see a reduction return because the DuPont model is recognizing that it's less risky. And I just wanted to get that also -- if anyone wanted to discuss that.

MR. LOVAAS: Yeah, Brad Lovaas again. So under number five, I just want to make sure, because there are concerns regarding that, the capital structure and leverage, and I know we'll be bringing that up more specifically in the model. But I don't know that we're fully in agreement on EBIT at this point.

MR. KERMODE: Okay.

MR. LOVAAS: Just --

MR. KERMODE: Perfect.

MR. LOVAAS: -- because we've been living with this LG for a long time, and those things that may be identified as flaws now are something that we've been basing our finance for many years.

MR. JOYCE: Maybe you should elaborate on your -- on your thought that it's a flaw to -- because I think of risk based on more of an industry aspect versus a source of financing, right? So if my business is, let's say, computer software, I can finance complete with equity, and it'd be fair and risky. So I'm just trying to understand maybe your --

MR. KERMODE: That's a -- that's a --

MR. JOYCE: -- elaborate on that a little bit more.

MR. KERMODE: That's a great question. I would say they're -- you're -- you're citing two -- two different types of risk. So you have business risk. So I could go build an apartment building in Olympia right now, my business risk is relatively small. But if I finance it all with debt, my financial risk is very high because I don't have the coverage ratio that the banks need.

So if all of a sudden, I don't get the fill out in those apartments like I expected, I can't make my -- my debt payments, and the bank takes it over. Where I have the same scenario, but it's halfway -- it's half equity. Now I have a balance between risk between the economy, because debt's cheaper, and safety because of equity. Now it doesn't fill out like it should, I can cover my debt because I have that portion -- my -- my interest payments are lower, my coverage coming from my equity component is enough to cover that. And so that's -- that's the difference. It's two different risk components.

MR. JOYCE: Okay.

MR. KERMODE: Good question.

Okay. That's -- go ahead.

MR. TYLER: Yeah, I -- I -- I was just going to sort of add -- add my two cents to this right now in that, you know, the -- the LG makes certain assumptions about the relationship between, you know, capital structure and return on equity. But the -- the -- the DuPont also makes assumptions about that relationship

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and, you know -- and, of course, that appeals to the Modigliani-Miller theorem, which, you know, goes back to the -- I'm sure you're well aware, it goes back to the late 1960s and was, you know, pretty -- pretty revolutionary theory at the time.

And -- and I -- I spent some time over the last couple of weeks because, you know, as an economist, as -- as an applied economist, you know, what you would want to do is you would want to look at, you know, for any theory that's out there, you -- you want to -- you want to test that theory and see if it makes sense or not. And -- and, you know, the theory itself I think makes a lot of logical sense. And -- and so I started looking for some papers on, okay, well, who's tested this empirically. Of course there had been a number of people who have raised theoretical concerns, practical concerns of the theory over the years, and -- and there's a surprising lack actually of empirical tests of the theorem for what -- for whatever reason.

So, you know, I -- I think that one thing that concerns me about the DuPont a little bit is that it adheres quite strictly to the Modigliani-Miller theorem and it assumes that that is -- is very strictly true, and -- and that's one thing I -- I -- you know, makes me a bit uncomfortable is I would like to see that empirical evidence that, you know, demonstrates that -- that we see it, you know, actually at work, and -- and -- and even better if it were at work in this industry. So anyway, that's -- that's one thing I'm continuing to think about and -- but -- but wanted to raise that here.

MR. KERMODE: Yeah, I -- I -- I think that's a good point. I've -- I've heard that before and I -- the -- the example I use, and I know I -- I should take time and start trying to find some journal articles, but the example I use from I remember college and -- and the example was -- and Modigliani-Miller says this, that the value of the company is not related to how it's financed, right? That's kind of the essence of it.

So a company -- I buy an apartment building and it -- it's an economic machine, it throws off a certain amount of money. When people come and rent apartments from me, my apartments are set at market value. The -- the -- the people that come in to rent do not say, so how do you have this apartment building capitalized? The -- the -- the machine, that economic machine, that apartment building, throws off money. And so now it's up to the owner to capitalize that the best it can.

That's why I'm at EB -- EBIT. EBIT is what

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this -- the solid waste collection industry throws off. That machine is throwing off EBIT. Now the question is, how do I pay the financing that's financing that? We changed the financing in a competitive environment, EBIT does not change. Revenue does not change, because I've now come more leveraged or if I come more equity rich, EBIT remains the same. I go above EBIT and change some expenses or lower costs, now I'm changing what that machine throws off. But that financing machine stays the same, and that's I think what Modigliani-Miller is saying, is that the -- it's the economic machine above that's throwing off the -- the money. Now the question is, how do you optimize that capital structure to get the most money at that bottom line? But that's -- that's a good point.

Let's see, next steps. So what we're going to do on the, what is it, the 28th, I think, the written comments come in --

MR. LOVAAS: 25th. I think, 25th.

MR. KERMODE: 25th.

MR. LOVAAS: We'll take the 28th.

MR. KERMODE: Yeah, I knew it was wrong when I said it.

So on -- on the 25th, right around the corner, the Commission is being -- asking for comments about the staff report, and comments -- I'd like the comments to address factors in the report that requires the Commission to exercise judgment such as selection of the company proxies, number of years in analysis, averaging or update requirements would be useful, and I -- I think we've hit that dead-on-plus.

The comments that provide wording, this is -- now, this is something we didn't talk about because this is more procedural. Provide wording or guidance on proposed rules that implement the update or the adoption of a method of setting rates for solid waste. Now, we've talked about this off and on about to what extent does the enabling order give guidance or the -- rule, the adopted rules, give -- give requirements. Of course there's a balance there. If -- if -- if there's guidance or instructions in the order, the next order that comes out has more flexibility in how they can implement any type of tweaks to the model. In rule, there has to be a rule waiver, and it's a -- it's a harder standard to -- to get by.

And the -- my discussions with the Chairman and with -- with -- to tell you the truth, with all three, they are not on one mind and one mind as far as how they see it constructed. And they're looking for input and wisdom as to how should they do it, because they do want to give the industry flexibility to react to stuff, but also give the industry assurance that we're not going to be wavering down the road as time goes by. So that -- that's an important component. So yeah, on the 25th, those should come in, and we should be good on that. We'll put together a -- a matrix and go from there.

The next is we would -- with that information, with those comments, we'll probably do draft rules and do another 101. And then this will actually have some meat on it versus the 101 that initially went out. At that point, we once again probably give comments, and then we'll go to an actual workshop with the Commissioners. By that time hopefully we got a lot of these things honed down.

And Brad and I always talked about as far as if we can get this down to pure policy issues clearly defined where they can make those decisions, I would be delighted. And, you know, I'm -- I'm -- I've said it time and time again, I really want to be a -- I'm not conclusion-driven here, I -- I want the right answer. And where the -- where the Commission lies in the decisions they make, I'm -- I'm comfortable with. What I'm not comfortable with is giving them not clear definitions as to how we -- we differentiate, and so that's -- that's one -- one reason I have the technical, one reason I have the court reporter. I want -- I want us to be very, very crisp.

Once the workshop with the Commissioners is finished, then proposed rules will come out in 102. And after that, we get the final comments. And at that point, you know, the 102 cannot change substantially. If it changes substantially, new proposed rules have to come out. So hopefully with final comments, we'll be close enough where at that point we can actually then get adoption of rules by a Commission order. Those are the next steps.

Now what you probably saw missing is dates on this, because I'm not sure at this point where we're going to end up at. Commissioner Rendahl was shooting for the end of the first quarter next year. That's, you know, if -- if we can get a good meeting in mind, I -- I think's actually possible. So we'll see where we're at on that.

Any comments on the schedule anything I missed or...

Andrew?

MR. KENEFICK: Well -- this is Andrew Kenefick. Danny, maybe I'm a little confused there. I thought you said that the Commissioners weren't set on whether it would go through a rule. It sounds like that the course --

MR. KERMODE: Oh, I'm sorry. I -- I -- I was unclear, then. There will be a rule, but to the extent that rule embodies, you know --

MR. LOVAAS: A level.

MR. KERMODE: Yeah, level of specificity as to how the model should be set up and ran. Like, you know, in the one -- the -- I'm not suggesting this, but let's say in one extreme it would be the rule would say these SIC codes, these SIC codes will be used to set ratings where the rule might say SIC codes, or whatever code we use, that are for transportation only, you know, should be renewed -- should the rule say that this must be renewed every five years or -- or should the order say we expect this back in five years.

That's -- that's the difference. And -- and the -- the industry has made clear that they would -- at least the -- the people I've talked to that they really would rather have flexibility and that the rule not be so strict as to how things are done. So but there's arguments on both sides.

MR. KENEFICK: Thanks.

MR. WILEY: Danny, going back to your schedule, I was just trying to take quick quotes. I may have gotten a little bit confused. But -- but I think that the comment you suggest in your -- your deadline for October 25th some proposed language, whether or not that is forthcoming, you are anticipating a Staff drafting rules that will then circulate in a, I guess, another CR 101 and then have the workshop, correct?

MR. KERMODE: Right.

MR. WILEY: One other point of clarification I wanted to ask about, and that is when you talk about an order adopting the rule in the auto tran switch for everybody's benefit is really the airporter industry, there was a rulemaking at the Commission about 2013. And it issued a very extensive order adopting those rules that we used in subsequent hearings to interpret the rules. Are you saying that there's the possibility that the rules could be very, shall we say, skeletal and that the order adopting those rules would go into extensive interpretive detail by the Commissioners. Is that a possibility?

MR. KERMODE: That's -- that's one of the scenario -- that -- that's what we have in front of us right now. To what extent does the -- the order have most of the discussion and the -- the rule is -- is more of a skeleton swinging over to here, where the rule is very constrictive, directive, and the order itself is

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just an adoption.

MR. WILEY: I would point out that, you know, for those of us who were around for the original Lurito case, the order was very instructive for the companies going forward. If we are -- you know, I think there would be a preference to keep the rules fairly objective, neutral because rules for tariff filings, if they get constrictive, are problematic. That interpretive order would be very important as an alternative to an adjudication if you're going rulemaking.

MR. KERMODE: No, that's -- to tell you the truth, that's my preference, and I -- I've argued -- I'm not an attorney, but I've argued that that would at least set the -- the foundation. And for the Commission to come in and take a left-hand turn, they would have to explain why these are these original order that they're going in a different direction. So...

MR. KENEFICK: Just -- Dave or -- just in the other industries, what -- how sort -- how sort of prescriptive or formulaic are the rules for rate setting either in Washington or -- or what you've seen elsewhere? Do they tend to be flexible or do they tend to be, here's the formula, plug in it, get your answer?

MR. WILEY: Definitely the former, and --

and as lawyers, we of course would prefer that it be that way because many filings are sort of case by case. There are sort of standards codified in the rules. For instance, in auto trans you've got a floor and ceiling of flexible rate structure, but -- but it's where you go in between those kind of broad outlines of rules that makes for an individual case. I think this industry, because of the variance of capital structure, the variance of size, revenues, et cetera, needs that flexibility as it moves forward in -- in a possibly revised rate.

MR. KERMODE: And -- and, you know, going back, and I'm sure you have too, gone back through all the orders going back pretty far, it seems that the solid waste industry have always had fairly dense orders and fairly instructive, and so I -- I'm -- I'm leaning more that way.

MR. KENEFICK: To have a dense order?

MR. KERMODE: Having an order that really explains things and what -- what they would like going forward, how the model would -- should be put together instead of putting the fine line SEC -- SEC codes will include XYZ and becomes very structured. And I -- I think that leaves a flexibility that -- that the industry needs.

MR. KENEFICK: Well, but, I mean, I know that, you know, overly prescriptive order, if you then use it as sort of as if it were a rule for all future proceedings, then becomes a rule without it actually being a rule. And then you -- you would not be able to say, well, we cannot vary from this.

MR. WILEY: Like an interpretive policy statement.

MR. KENEFICK: Yeah, it's going to have to go through rulemaking at some point.

MR. KERMODE: Well, but that's -- that -- I think that just highlights the point. That's why I think the Commission wants that discussion as to pros, cons, where you headed, what, when do you want it so -- I'm certainly not going to be writing the order so...

Any other -- any other comments or...

Well, you know, we -- it's only 11:17, so I think that's really cool. Thank you for participating, coming in. Really focus on those comments. I think it's really constructive. I'm going to go back and try and pull some numbers to see about that inflationary stuff there.

MR. WILEY: Yeah.

MR. KERMODE: And -- and probably try to get more information on Modigliani and we'll see where we're at on that. But other than that, I -- I think we've accomplished what I was hoping we would. Is there any other final words that somebody wants to put in just to get it on the record and --

Brad?

MR. LOVAAS: No, just thank you very much for all the prework and then leading up to this and then this discussion as well. We're looking forward to the comments and then the iterations of -- that we'll have. I -- I think the comments will set up kind of a base for us too, similar to what you were able to do in January, and then hopefully we can have some conversations going forward leading up the workshop.

MR. KERMODE: Well, and you'll notice I didn't put hearing up there, so I don't expect that we will have to do any type of hearing stuff.

So with that, thank you.

(Adjourned at 11:18 a.m.)

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C E R T I F I C A T E

STATE OF WASHINGTON

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I, Tayler Garlinghouse, a Certified Shorthand Reporter in and for the State of Washington, do hereby certify that the foregoing transcript is true and accurate to the best of my knowledge, skill and ability.

Tayler Garlinghouse

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