

CERTIFIED  
TRANSCRIPT

NATIONAL FEDERAL MILK MARKETING ORDER  
PRICING FORMULA HEARING

DOCKET NO.: 23-J-0067; AMS-DA-23-0031

Before the Honorable Channing D. Strother, Judge

---o0o---

Carmel, Indiana  
September 13, 2023

---o0o---

Reported by:

MYRA A. PISH, RPR, C.S.R.  
Certificate No. 11613

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

A P P E A R A N C E S:  
FOR THE USDA ORDER FORMULATION AND ENFORCEMENT DIVISION,  
USDA-AMS DAIRY PROGRAM:

Erin Taylor  
Todd Wilson  
Brian Hill

FOR THE AMERICAN FARM BUREAU FEDERATION:

Danny Munch

FOR THE INTERNATIONAL DAIRY FOODS ASSOCIATION:

Steve Rosenbaum

FOR THE MILK INNOVATION GROUP:

Ashley Vulin (Remotely)  
Charles "Chip" English

FOR THE NATIONAL MILK PRODUCERS FEDERATION:

Nicole Hancock  
Brad Prowant

FOR SELECT MILK PRODUCERS, INC.:

Ryan Miltner

For Edge Dairy Cooperative:

Dr. Marin Bozic

---o0o---

(Please note: Appearances for all parties are subject to  
change daily, and may not be reported or listed on  
subsequent days' transcripts.)

---o0o---



1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

M A S T E R I N D E X

SESSIONS

WEDNESDAY, SEPTEMBER 13, 2023	PAGE
MORNING SESSION	3489
AFTERNOON SESSION	3614

---o0o---



1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

M A S T E R I N D E X

WITNESSES IN CHRONOLOGICAL ORDER

WITNESSES: PAGE

Dr. Mark Stephenson:

(Continued)

Cross-Examination by Ms. Hancock	3489
Cross-Examination by Mr. Miltner	3526
Cross-Examination by Mr. English	3582
Cross-Examination by Ms. Taylor	3584
Cross-Examination by Mr. Wilson	3598
Cross-Examination by Ms. Taylor	3600
Redirect Examination by Mr. Rosenbaum	3604
Recross-Examination by Ms. Taylor	3610
Recross-Examination by Mr. Wilson	3611
Recross-Examination by Ms. Taylor	3612

Dr. William Schiek:

Direct Examination by Mr. Rosenbaum	3614
Cross-Examination by Ms. Hancock	3642
Cross-Examination by Mr. Miltner	3674
Cross-Examination by Mr. English	3688
Cross-Examination by Ms. Taylor	3689

James DeJong:

Direct Examination by Mr. Rosenbaum	3708
-------------------------------------	------

---o0o---



## M A S T E R I N D E X

## INDEX OF EXHIBITS

## IN CHRONOLOGICAL ORDER:

NO.	DESCRIPTION	I.D.	EVD.
179	E-Mail from Chris Allen	3532	
176	Testimony of Mark Stephenson		3613
177	IDFA-29		3613
178	IDFA-1		3613
180	Testimony of William Schiek	3614	3707
181	IDFA-7	3614	3707
182	IDFA-8	3615	3707
183	IDFA-9	3615	3707
184	IDFA-10	3615	3707
185	IDFA-11	3615	3707
186	IDFA-12	3615	3707
187	IDFA-13	3615	3707
188	IDFA-14	3616	3707
189	IDFA-15	3616	3707
190	IDFA-16	3616	3707
191	IDFA-17	3616	3707
192	IDFA-18	3616	3707
193	IDFA-19	3616	3707
194	IDFA-20	3617	3707
195	IDFA-40	3617	3707
196	Testimony of James DeJong	3708	
197	IDFA-41	3709	



1 WEDNESDAY, SEPTEMBER 13, 2023 - - MORNING SESSION

2 THE COURT: Let's come to order.

3 Okay. We resume with this witness.

4 CROSS-EXAMINATION (Cont'd)

5 BY MS. HANCOCK:

6 Q. Good morning, Dr. Stephenson. Welcome back.

7 A. Good morning.

8 Q. I think we were -- I just needed to cover a couple  
9 more pages in your survey study, and then we can move off  
10 that and wind things up.

11 I'm on, just so we're clear, Exhibit 178, which is  
12 your 2023 report. And I'm on page 26. We were talking  
13 about the ledger.

14 A. Okay.

15 Q. And I don't know for sure if I asked this. I  
16 might have. If I'm repeating myself, just forgive me.  
17 I'll get going again.

18 That depreciation number that's assigned there, I  
19 think you -- that's a number that either the person  
20 filling it in can populate, or if there's nothing there  
21 and it was zero, you would assign a number.

22 Is that where we landed?

23 A. No, I wouldn't assign a number. If -- if it was  
24 left blank, then it's not included. It would be in the  
25 sum of these costs as a zero value.

26 Q. Okay. I thought -- is that where you said you  
27 used an economic depreciation number?

28 A. I had asked them to do that, to use an economic



1 depreciation.

2 Q. Okay. And so if they didn't put in a number, it  
3 would just be zero --

4 A. Which would grossly understate the consumption of  
5 capital in a plant.

6 Q. Which in turn would show that they had much lower  
7 costs for the operation of their plant based on the  
8 numbers that they would be providing.

9 A. Yes.

10 MS. TAYLOR: Excuse me. I apologize for  
11 interrupting. But since everyone gets text messages, I  
12 think the webcast is down at the moment. We're aware and  
13 fixing it, in case you get a message.

14 I do think we continue. The webcast is nice, but  
15 not necessary to have the hearing. So I just wanted to  
16 let everybody know. And I do apologize for interrupting.

17 BY MS. HANCOCK:

18 Q. Okay. And then let's turn to the next page. I'm  
19 on page 27. This is the final page that someone will get  
20 to let them know that they have completed the survey; is  
21 that right?

22 A. That's correct.

23 Q. And it says -- you have a message there that says,  
24 "I will scrutinize your data for completeness and  
25 consistency, and then if I feel there is questions, I will  
26 contact you for clarification."

27 Did you do this for both your 2021 and 2023  
28 surveys?



1 A. Yes. I have always done that.

2 Q. Is -- when you say you "scrutinize the data for  
3 completeness and consistency," are you just walking  
4 through each one of the tabs for each one of the plants  
5 that had responded?

6 A. Yes. I mean, and I -- we talked yesterday, I had  
7 a bit of conversation about some of those cross-checks  
8 that are kind of built into the data collection here. If  
9 they are out of bounds, then that's a red flag for me to  
10 go in and take a closer look and see what might be missing  
11 and to follow up and try to get that resolved.

12 Q. Okay. And how many of -- or what percentage of  
13 the plants did you have to cull back and follow up on?

14 A. A relatively small number. Sometimes I would send  
15 an e-mail, just a quick e-mail about, I need this to be  
16 completed. Because, typically speaking, there would be a  
17 few entries or boxes that didn't have completion.

18 Just to give you an example of that, the market  
19 value of assets, the way that this was asked for, you  
20 know, suggested that what would you expect you could sell  
21 your plant for today? And for a few companies, that was  
22 just a -- a question that they couldn't wrap their head  
23 around, had never been contemplated, they didn't know how  
24 to answer that, and they left it blank.

25 Q. And then you could -- you would update that data  
26 based on the conversation or the e-mail response that you  
27 received from them?

28 A. Yes. Or they could update it directly. I mean,





1 they can go back in and -- and enter or fix data. That's  
2 what I prefer they do. But if it was a verbal response,  
3 then I could go back in and do it.

4 Q. And I think you answered this yesterday, but you  
5 said you don't -- this doesn't generate a report for plant  
6 for you. You are just getting what we're looking at here,  
7 which is the tabbed information for each plant?

8 A. That is just data collection at this point. And  
9 it's an organized method of asking for and collecting that  
10 data. And it does provide some sub summaries. So, for  
11 example, when you take a look at that little packaging  
12 cost that's being calculated, that is a packaging cost  
13 that's going to show up for the plant at the -- on  
14 individual reports.

15 Q. And -- and did you provide the responders with a  
16 report back based on the calculations that you had done on  
17 their plants?

18 A. For this particular study, not all of them. A few  
19 of them had requested that, and I did send that back.

20 Historically, it's nice to be able to give people,  
21 you know, reports back. Part of what folks who --  
22 participants, you know, like about this is that it gives  
23 them that external benchmark, how am I doing relative to  
24 the other body of plants that participated.

25 Q. So what did you provide them back to be able to  
26 help them put their numbers in context with the other  
27 plants that had responded?

28 A. Well, for this particular study, there were only a



1 few plants that had asked for that report back, and I did,  
2 you know, provide them information about what their  
3 summary costs were. So it was very much like that table  
4 that provides a summary of all the plants, but it did  
5 provide the same data for their operation.

6 Q. Okay. And then by the time you issued your data,  
7 they were able to use as their cross comparison?

8 A. Yes. If they'd asked for it. And many plants  
9 didn't.

10 Q. Okay. They -- you said many plants did not?

11 A. Did not. They supplied the data, and that was  
12 done at that point.

13 Q. Okay. Let's turn to on page 178 -- or I'm  
14 sorry -- on Exhibit 178, let's turn to page 4.

15 And this is in your Plant Selection area of your  
16 2023 report.

17 A. I'm not quite there. 178 -- I see 177 -- oh, 178.  
18 Sorry.

19 Q. Exhibit 178, page 4.

20 A. Page 4. Okay.

21 Q. And this is under the Plant Selection heading.  
22 You see that?

23 A. Uh-huh.

24 Q. And it -- it says you maintain a proprietary list  
25 of about 687 dairy plants in the U.S.

26 And yesterday I had asked you how many you  
27 surveyed. Did you use your proprietary list to reach out  
28 to those plants?



1           A.     I -- I have in the past, but there have also been  
2 times when I have asked for other help and guidance in  
3 selecting the plants that, for example, were producing the  
4 NDPSR products. So I know whether a plant is producing  
5 cheese or if they are producing fluid milk or yogurt or  
6 whatever it may be. I may even have some breakdown of the  
7 kinds of products within that broader selection out there.

8                     It's difficult to maintain a database like this  
9 because plants are changing all the time, and capacities  
10 are increased, or plants go out of business, you know,  
11 some -- some of those types of things. But that plant  
12 location database is used for several different things, in  
13 my past, at least, when I was working on materials. So,  
14 for example, when we would do the U.S. dairy sector  
15 simulator model, we also used that plant location database  
16 to identify where plants are and what products they  
17 produce.

18           Q.     And then you go on to say that NASS shows that  
19 there were 1,266 dairy plants in the U.S. in 2019, and  
20 then consistent with what I believe you just said, which  
21 is some of those are just very small and they wouldn't  
22 have products that would be reported to NDPSR.

23           A.     Correct.

24           Q.     And can you tell me why you can't just use the  
25 data that comes out of NDPSR, why you need to conduct an  
26 additional survey on top of that to be able to get to the  
27 actual cost data?

28           A.     Well, NDPSR doesn't include any costs. It



1 includes prices received for products that were sold. It  
2 does give you some idea about the number and the pounds  
3 sold and product that was reportable. But it doesn't give  
4 you any idea about the costs or even which plants  
5 participated in that.

6 Q. So you can use that as a backdrop for some pieces  
7 of information, but then you have to dive in deeper for  
8 the costs that we have talked about in the survey?

9 A. Yes. Absolutely. Yeah.

10 Q. And then you go on in the next paragraph to say  
11 that "participation in this study is voluntary."

12 And that's referring to the 2023 study; is that  
13 right?

14 A. Every study I have ever done.

15 Q. Okay. So that was going to be my next question.

16 So you have never had a study that you have done  
17 that's been a mandatory reporting study?

18 A. No.

19 Q. And the one that you had done with USDA, the 2021,  
20 you note in here "captured a good portion of the butter  
21 and nonfat dry milk sales that were included in NDPSR, but  
22 the proportion of cheddar cheese and dry whey was not as  
23 complete."

24 Do you know what percentage of the cheddar cheese  
25 and dry whey reported in NDPSR products that you did not  
26 capture?

27 A. Well, I don't recall that off the top of my head.  
28 I would have to go back and take a look at that again.



1 But, I mean, there are pounds that are reported every week  
2 in NDPSR for the four products. And I know how many  
3 pounds are reported by the plants that I have here. I  
4 don't know how many of the pounds that are reported by  
5 these plants were actually reportable to NDPSR but --

6 Q. How -- oh, sorry.

7 A. No, I'm done.

8 Q. How did you know that -- that you -- well, it  
9 sounds like you were less than satisfied with the amount  
10 of response for cheddar cheese and dry whey; is that fair,  
11 for the 2021 study?

12 A. It was lighter than I expected.

13 Q. How did you make that determination that it was  
14 lighter than what you expected? What did you compare?

15 A. Well, based on the past. We always have plants  
16 that are invited to participate and some that don't choose  
17 to do so. But, typically speaking, I get a pretty high  
18 proportion of plants that are invited that actually do.  
19 And I think that for many of them, it's a sense of  
20 curiosity, you know, about what would be there. And for  
21 some of them, it is also just maybe a sense of obligation  
22 that this is something we should do for the betterment of  
23 the industry, to have a report like this put out.

24 Q. It's fair to say that any -- all of the responders  
25 could have different motivations for why they are  
26 responding to the survey?

27 A. I think that's absolutely fair. Although, you  
28 know, I can't say that I have gone back in and done a



1 follow-up to say, why did you or why didn't you respond to  
2 this.

3 Q. And I think you estimated that it took several  
4 hours to complete the study?

5 A. Yes.

6 Q. So it's not a light undertaking for someone to do;  
7 is that fair?

8 A. No, it's -- I think it's a fairly substantial ask.  
9 It is going to require a person that's fairly well up in  
10 an organization to spend at least a better part of a day  
11 doing that.

12 Q. And so in the 2021 study where you say that you  
13 captured a "good" portion of the butter and nonfat dry  
14 milk sales, do you know what -- what amount is a good  
15 portion?

16 A. No. But I would have said if I got 50% or better,  
17 I would feel reasonably comfortable about that as a  
18 sample.

19 Q. Okay. So is it fair to say that in 2021 you felt  
20 like you were able to capture at least 50% of the butter  
21 and nonfat dry milk sales reported in the NDPSR?

22 A. Yes, I think so. And, you know, I -- I felt like  
23 there was good representation, at least, of the number of  
24 possible operations there. But it wasn't quite as true  
25 for the cheese and the whey plants.

26 Q. Okay. So is it fair to say, then, for the cheese  
27 and the whey plant, you captured something less than 50%?

28 A. Of the volume. I believe so. Again, you're



1 trying to lead me down a path where I have already told  
2 you I can't quite recall that off the top of my head. I  
3 could go back and recalculate that if that were important  
4 for you.

5 Q. And I'm not trying to lead you anywhere. And I  
6 know that you didn't know the number. I'm just trying to  
7 get rough estimates so that I can at least bucket it in  
8 one category or the other.

9 A. Yeah. I mean, let me just give you a big example.  
10 If I got 10% of something, I would feel like that's a  
11 pretty thin margin to use as a -- you know, as something  
12 that was significant and representative of the sample. If  
13 I got something that was 50% or greater, then I would feel  
14 pretty good about it.

15 So if that gives you an idea about, you know, how  
16 representative some of the samples were, then --

17 Q. Can I take it from what you just described then  
18 that for cheddar cheese and dry whey, it probably falls  
19 somewhere between that 10 and 50%?

20 A. Probably. But, as I said, I don't know without  
21 going back and taking a look at it.

22 Q. And that was for the 2021 survey.

23 In the 2023 survey, the one that IDFA and WCMA  
24 commissioned, the next paragraph you say, "With the urging  
25 of IDFA and WCMA to their members, participation of cheese  
26 and dry whey plants was higher."

27 Is that fair?

28 A. Yeah. Those were my words.



1 Q. So when you say "with urging," do you mean that  
2 IDFA and WCMA encouraged their participants to respond?

3 A. They felt it was important to get a good update of  
4 the cost of processing study.

5 Q. And then you go on to say in that same paragraph  
6 on page 4, "It must be noted that a different sample of  
7 plants makes it more difficult to compare results from  
8 different studies."

9 Are you referring back to the '21 study being  
10 compared to the '23 study?

11 A. Well, I would refer that to any kind of -- I mean,  
12 that's kind of a generic statement. If I had all the same  
13 plants in the 2007 study, the 2019 data, and the 2022  
14 data, then it would be fair enough to say are these  
15 representative of the census of plants that might have  
16 been reporting. Perhaps, perhaps not. But at least  
17 within these plants you can see what the trend has been.  
18 Plants may have made investments in capacity or automation  
19 or technology, but at least within the same plant you  
20 would be able to see how their costs had changed over  
21 time.

22 Q. Okay. It's fair to say that, because you had  
23 only -- I think you said about 15 plants that overlapped  
24 between 2021 and 2023, that meant that a large majority of  
25 the plants that were studied in 2023 were different than  
26 your 2021 study?

27 A. They were different, and I hope I conveyed that in  
28 the body of the text in here. I mean, certainly some of





1 them were the same, but we -- we got plants in both of  
2 those studies that just were in one but not the other.

3 Q. Okay. And then you were just noting here that  
4 from the role that -- that you were in, that you're just  
5 making a qualifier here that says you have to take this  
6 2023 study with a grain of salt because that different  
7 sampling of plants can make it different to compare those  
8 two, if it were instead an apples to apples comparison?

9 A. I don't think I used "grain of salt," but I think  
10 that it's fair to understand that if they aren't the same  
11 plants in there, that you can get different results. I --  
12 I have tried to make that point rather -- many times I  
13 think in here that the sample matters.

14 Q. Yeah. And I think that you have. I just want to  
15 make sure that I'm exploring that as well.

16 And you did, actually, get different results  
17 between your 2021 and 2023 survey results; is that right?

18 A. Yes, I did.

19 Q. And -- okay. Do you know if when the IDFA and  
20 WCMA were urging their members to participate in the study  
21 that they knew what the study was going to be used for?

22 A. I wasn't privy to any of those phone calls or  
23 e-mails, so I -- I don't know. I would assume, but I  
24 don't know.

25 Q. Did you know what the study was going to be used  
26 for for 2023?

27 A. Oh, absolutely. I mean, I would not have  
28 responded with a degree of urgency to get it done and get



1 it prepared, you know, had it, you know, not been for the  
2 hearing that was upcoming.

3 Q. So you knew it was intended to be used for this  
4 hearing, to determine the Make Allowances that USDA would  
5 be considering at this hearing?

6 A. I did.

7 And, you know, I could go a step further to say  
8 that because I was not as satisfied with the results of  
9 the 2019 data, felt that, you know, they had question  
10 marks as far as I was concerned from what I might have  
11 expected, that it would have been hoped that you might get  
12 a better sample and better results here. And of course,  
13 if you have an organization like IDFA or WCMA urging  
14 members to participate, then, you know, I felt that we  
15 might get a better sample.

16 Q. Okay. Why were you not happy with the results  
17 that came out of 2021 survey?

18 A. Well, some of the results looked to me like -- I  
19 mean, I report the data. I don't cook the numbers or do  
20 anything with it. It is the data as I receive it. And  
21 yet there were still some questions that you had with the  
22 results of products, like butter, as a good example, in  
23 the 2019 data that I might have expected would have been a  
24 bit higher than that.

25 Q. And I think for butter you had \$0.1411?

26 A. I'd have to look, but that is -- it is in that  
27 ballpark, yes.

28 Q. Okay. And you ended up almost three times higher



1 at \$0.3176 after IDFA and WCM --

2 A. I probably would have said a little more than  
3 twice as high.

4 Q. Okay. It's a little less than three times, a  
5 little more than twice, something like that? Okay.

6 Other than the butter number coming in low from  
7 the '21 survey, anything else that you felt like was  
8 deficient or lacking?

9 A. No. That was the one that stood out to me in  
10 particular but -- and at any rate, I felt like it was a  
11 worthwhile effort to go in and redo a study to see if we  
12 couldn't get better sample.

13 Q. And I think you -- you also talked about changing  
14 some of your methodology between 2021 and 2023.

15 Can you talk about that a little bit more?

16 A. Yeah. The 2021 study was where I introduced the  
17 idea of a weighting of unallocated costs by the degree of  
18 product transformation. And, you know, I gave examples.  
19 So if you had a plant that brought in raw milk and perhaps  
20 made nonfat dry milk and sold most of the cream as cream  
21 instead of churning it to butter, then for a rather  
22 lightly processed product of cream, you would have been  
23 overallocating costs with the methodology of using the  
24 pounds of components in the cream in comparison. So that  
25 would have overallocated costs to cream and underallocated  
26 them to powder as an example.

27 By the same token, it could have been the other  
28 way around. If you churn butter and sold a lot of skim



1 milk or condensed skim or something like that, then you  
2 might have underallocated to butter and overallocated to  
3 powder.

4 Q. And that was on a scale of 1 to 10 that you assign  
5 that transformation?

6 A. It was on a scale of 1 to 10. I worked with  
7 people from the Center for Dairy Research at the  
8 University of Wisconsin. They are a group of academics  
9 and others who work in dairy processing area, and I  
10 explained to them what I was trying to do. And I didn't  
11 want to get highly technical if I could. I just said, on  
12 a scale of 1 to 10, for all of these products, can you  
13 give me a ranking number that represents the degree of  
14 product transformation that has to go on for the plants.  
15 And so those were the numbers that they came up with.

16 Q. And so on that scale of 1 to 10, cream, for  
17 example, was rated as a 2?

18 A. I --

19 Q. I'm on page 7.

20 A. If you -- if you would have asked me, I would have  
21 said a 3, but I couldn't remember. Yep. Cream is a 2.

22 Q. And then butter, for example, is a 6?

23 A. Yes.

24 Q. But whey protein concentrate powder would be a 10?

25 A. Yes.

26 Q. Okay. Meaning that whey protein concentrate  
27 powder would take up the most costs for its  
28 transformational value.



1 A. For its transformational value, yes.

2 Q. Okay. And you did this to try and capture or help  
3 you better analyze the financials that were coming in from  
4 the more complex plants; is that fair?

5 A. It is fair. We have had -- we have had plants in  
6 the past where they had reported data, and then when they  
7 looked at results, you know, would say, ooh, that -- you  
8 know, you have underestimated costs for this product and  
9 overestimated them for that product. And, you know, when  
10 you look to see what's happening, and your methodology,  
11 you realize that you were putting a lot of weight on  
12 components that were not being very heavily processed.

13 Q. And then in that 2021 survey, when you did publish  
14 it, you noted in your report, in 2023, that the industry  
15 reacts with some criticisms.

16 A. They did. And I think that, you know, part of the  
17 criticism was the actual numbers, you know, that -- that  
18 they looked at. Butter, as an example, was a fairly low  
19 number. And this weighting scheme would have a tendency  
20 to push butter values lower, would have a tendency to do  
21 that.

22 But, in my opinion, in looking at the data and the  
23 plants who were participating, it was more of a sample  
24 problem than it was this weighting problem. But this is  
25 what was obvious to people, that this had changed, and so  
26 I think that folks were uncomfortable with that process.  
27 The other process had been well established and -- and the  
28 industry seemed to feel comfortable with it, so I went



1 back to that.

2 Q. Okay. And when you say "went back to it," meaning  
3 you didn't have a --

4 A. I didn't transform the data. Sorry for jumping  
5 in.

6 Q. No. That's okay. Your words are better than  
7 mine.

8 So it just meant that when you went back in 2023  
9 to your original methodology, you weren't assigning a  
10 weighted value of cost, you were just allocating them on  
11 your own based on the product mix that was being made at  
12 the plant?

13 A. And the components in those final products.  
14 That's correct.

15 Q. Okay. And do you remember when you were getting  
16 those criticisms, was it from USDA, for example?

17 A. No. I -- I heard, you know, from a number of  
18 people who looked at this with surprise. Some of them,  
19 participants; some of them, industry organizations; some  
20 of them -- well, maybe, regulatory, I don't think said,  
21 gee, what's going on here. Nobody had -- had asked about  
22 that in particular.

23 Q. Okay.

24 A. But, you know, legitimate I think to question  
25 those data.

26 Q. And I thought that you had told me that you felt  
27 like you had already captured a good portion of the butter  
28 that had been reported on NDPSR in that 2021 survey.



1 A. But not as much as this time around, the 2023  
2 survey.

3 Q. Okay. So even though you felt like you captured  
4 at least 50% of the butter in that 2021 survey, you still  
5 feel like the results were somewhat impacted because you  
6 didn't have enough of the butter responses?

7 A. Yes. And there were different plants. So even  
8 though, you know, there was a reasonable volume of butter  
9 in the sample, there were a different set of plants that  
10 reported in 2021 versus the 2023 study. Some overlap, but  
11 quite a few different plants.

12 Q. Okay. And do you think that if you would have had  
13 all of the butter plants from 2021 and all of the butter  
14 plants from 2023 combined, it would be even more accurate  
15 than what you have in your 2023 study?

16 A. More is always better.

17 Q. Okay. And now on page 6, I think you have a  
18 statement here that you were not trying to determine the  
19 profitability of the plants; is that accurate?

20 A. Yes. So to determine profitability, you would  
21 have needed quite a bit more data, such as the sales price  
22 and value of the products from the plant as well as the  
23 costs that were paid for dairy ingredients coming into the  
24 plants, and those were specifically not included. And  
25 some of the marketing costs that are incurred are not  
26 included in this cost of processing.

27 Q. And then you used Moody's index value in 2022 to  
28 calculate a return on the value of the assets at 5.07%.



1 Is that right?

2 A. I believe that that was the number.

3 Q. And I'm pulling that off of page 9. So I'm not  
4 making you guess.

5 A. Okay. Thank you. I will accept that you have  
6 looked at the right number.

7 Q. And I'm just -- so for you, what do you -- how do  
8 you interpret that return on the value of assets number?  
9 What do you interpret that to mean?

10 A. Well, if you think about any -- any firm or  
11 business that has a lot of asset value tied up in the  
12 operation of the -- of the firm, then they would always  
13 have an option -- maybe seems extreme -- but an option to  
14 sell that plant and its assets to someone else and put  
15 that money in a safe investment, or to invest it in a  
16 different kind of operation or plant. So this is a means  
17 of just saying that there is an opportunity cost to the  
18 investment that you have, and your investment should  
19 return something over time.

20 Q. But the cost of tying up your asset, because if  
21 you didn't have them tied up here, you could deploy them  
22 somewhere else?

23 A. I would like to think that your assets are working  
24 for you whether, you know, it's just through a paper  
25 investment or in physical assets of a plant.

26 Q. Do you believe that a 5.07 return on asset value  
27 is a conservative number?

28 A. Well, I don't need to believe that, but when I





1 look at the possibilities for what number you might pick,  
2 I have used the same methodology that CDFA had used in the  
3 past, and that was the Moody's Baa bond index. It is not  
4 a risky bond or a junk bond, you know, that would have a  
5 high interest rate. It is not a savings account type of  
6 interest rate that would be exceedingly low. But it's a  
7 very conservative safe bond that tends to have a lower  
8 rate of return.

9 Now, I will say that that return on assets number  
10 can be influenced by two things: Either, one, by the  
11 value of the assets that you perceive you have, the market  
12 value, or by the interest rate at the time. And our  
13 interest rates have gone up, as I think most of us would  
14 know over the last couple of years, thanks to action on  
15 the part of the Fed, and bond interest rates have followed  
16 that up. So it's a higher interest rate than we had in  
17 earlier studies.

18 Q. And so you use that -- you use this return on  
19 asset percentage and assign it to that market value of  
20 asset number that we looked at on the survey on page 26;  
21 is that right?

22 A. That's correct.

23 Q. And so depending on what the survey responder  
24 plugs in as their own market value of assets, it can have  
25 a big swing on the numbers; is that fair?

26 A. It could. It could have a big swing on that  
27 particular number. That number is broken out, I think, in  
28 the table. It's still a relatively small proportion of



1 total -- yeah, there's a return on investment there.

2 Q. Are you on page 12?

3 A. Oh, I just flipped open to page 14, but let's take  
4 page 12, that's fine.

5 So you are looking at the all plants number here  
6 for nonfat dry milk processing. The return on investment  
7 was \$0.035 per pound.

8 Q. Okay.

9 A. So that's \$0.035 per pound out of the \$0.275 that  
10 was reported for total costs.

11 Q. Okay. So tell me what your table -- if we're on  
12 page 12, tell me what your Table 3 -- this is titled Plant  
13 Costs for the Nonfat Dry Milk Processing -- what is that  
14 table designed to capture there?

15 A. It's designed to capture all of the costs  
16 partitioned into different cost centers, I guess, or ways  
17 of identifying costs by -- by usage in the plant. So we  
18 have tried to use the same methodology, again, that CDFSA  
19 has used in the past. Although CDFSA did change a couple  
20 of their segments over time, so -- but the more recent  
21 ones I believe had segmented this into processing labor,  
22 so in other words, what is labor, and you can kind of see  
23 in here that was about 19% of the total cost from that pie  
24 chart down there.

25 What about utilities? That's another major cost  
26 center in plants, about 15% in this case.

27 What about packaging? About 7%.

28 Non-labor or utilities processing, that is a title



1 that CDFA uses that I think confuses people, but it's --  
2 it's a host of other things that don't include labor or  
3 utilities or some of the general and administrative costs.  
4 Now, you can't look at the general and administrative  
5 costs of that last ledger, general ledger chart that's on  
6 there and just say, it is all of those. No, it's some of  
7 those, and a few other costs as well.

8 So, for example, superintendent labor in a plant  
9 is part of the general and administrative costs that are  
10 listed here, as are secretarial support and, you know, a  
11 few other things.

12 Q. Attorneys?

13 A. Attorneys, yes, of course.

14 Q. I just note that you called that out in there, and  
15 so I thought it would be appropriate here to note.

16 So if we take the column -- so starting at  
17 processing labor, utilities, packaging, non-labor or  
18 utilities processing, and then G&A, those are all actual  
19 costs that you have collected from the survey responders;  
20 is that right?

21 A. That's correct.

22 Q. And then as well as the product pounds that are  
23 noted there?

24 A. Yes.

25 Q. And on page 12 what we're looking at is all of  
26 these are specific to their production and processing of  
27 nonfat dry milk?

28 A. Yes.



1 Q. And then you have a return on investment column  
2 there. That's based on what we were -- a calculation that  
3 you have allocated based on that return of asset value.

4 A. Yes. And, again, if you looked at that last  
5 ledger page that was shown on page 26 of this report, the  
6 market value of assets can be given to me as unallocated,  
7 you know, for the entire plant, or you can try to break it  
8 out to your cheese product or your butter products or your  
9 powder products.

10 Q. If they didn't break it out and they just gave it  
11 to you as one cumulative number, how did you allocate it  
12 when you went back to -- for -- on page 12, for example,  
13 to nonfat dry milk processing?

14 A. The same way that all of the other unallocated  
15 costs were done as I have explained before. It would be  
16 based on the pounds of components in those products.

17 Q. Okay. And so for the market value, though, you  
18 didn't use -- you just used it based on allocation of the  
19 pounds?

20 A. No, the market value would have been based on the  
21 allocation. If it -- if they reported one number, you  
22 know, for the market value of the plant, I would have  
23 allocated that to, let's say, nonfat dry milk based on the  
24 pounds of solids in the product. And then it would have  
25 been divided -- I mean, the dollar number from that would  
26 have been divided by the total pounds of nonfat dry milk  
27 reported processed by the plant.

28 Q. Okay. And so -- and then -- back on page 12



1 again. And then you take all of the actual costs that are  
2 reported, and then you have added in a return on  
3 investment that was based on that 5.07% return on asset  
4 value.

5 A. Yes.

6 Q. And then as it's been applied to the market value  
7 number that was input by the survey responders. And then  
8 you have allocated that based on the pounds of solids for  
9 this particular product if it was reported generally. And  
10 then you have come up with this assigned number that we're  
11 looking at on page 12 in this example?

12 A. Correct.

13 Q. Okay. So, for example, if we are looking at, for  
14 low cost plants, it's \$0.0152 -- is that per pound?

15 A. That would be per pound of nonfat dry milk powder.

16 Q. And that would be a return on investment that was  
17 assigned to that low cost plant, and then you have added  
18 that -- all of those actual costs and the return on  
19 investment to come up with the total cost there.

20 A. Correct.

21 Q. And then the same would be true for a high cost  
22 plant, they would have -- for a high cost plant in this  
23 example, it is \$0.0569 per pound for return on investment;  
24 is that right?

25 A. Correct.

26 Q. And -- and then -- so if we do the math on a high  
27 cost plant example, and the return on investment as a  
28 percentage of the total cost, I come up with 17.5%. Does



1 that look right to you?

2 A. I think you are in the ballpark. And I should  
3 trust your math, but I don't.

4 Q. You probably shouldn't. Never trust an attorney's  
5 math.

6 A. Okay. You are looking at the high cost plants?

7 Q. Yes.

8 A. 17.5%.

9 Q. Okay. And so in this example, the return on  
10 investment for the total costs of producing nonfat dry  
11 milk processing at a high cost plant, they would have a  
12 17.5% profit margin built into their cost here; is that  
13 right?

14 A. That would be the return on investment here, yes.

15 Q. Okay. And so if -- we have heard some examples of  
16 kind of a rough calculation on how profitability works in  
17 the sale of cheese. So I'm going to give it a whirl, so  
18 you just have to bear with me.

19 But you have a USDA cheese price that's set in  
20 this example, we're talking cheddar cheese, the price that  
21 would be set for calculating; is that right?

22 A. I don't think they set the price. They discover  
23 the price.

24 Q. Okay. They discover the price.

25 And then if you subtract out an assigned  
26 Make Allowance, then the net of that is the value to  
27 determine that Class III price?

28 A. In --



1 Q. Very simple terms.

2 A. Mostly, yes. That neglects yield factors, but,  
3 yes.

4 Q. Well, and that's a good question.

5 Did you do anything in your study to -- to  
6 calculate or factor in yield?

7 A. I didn't, no. There are some data that are  
8 collected that could be used to look at approximate yields  
9 for something like butterfat, for example. But it would  
10 be difficult with what I have collected to get a complete  
11 set of yields, yield factors.

12 Q. But nothing that we have in your study as it  
13 exists right now?

14 A. No.

15 Q. Okay.

16 A. I mean, that would be an addition of a few more  
17 questions and reporting to do that.

18 Q. And if we had the ability to provide you with a  
19 wish list, would that be something that you would want to  
20 have included?

21 A. If I were director of Dairy Programs, I would  
22 probably want to take a look at every parameter that is in  
23 my product price formulas. So, you know, the two  
24 parameters that we have in there now are yield factors and  
25 Make Allowances, but there are some interaction in terms  
26 of the protein, values, and those kinds of things. I  
27 think it would be worth examining those from time to time,  
28 and I do think that yield factors can change over time as



1 well. So practices do differ, even though we're making  
2 some of these products to standards.

3 Q. Okay. So is that yes, you would like to have that  
4 data if you --

5 A. Yes, I would.

6 Q. Okay. And so if we use that Class III price  
7 there, it's fair to say that the -- this return on  
8 investment that we just looked at is built into that  
9 Make Allowance that we have just subtracted out of the  
10 cheese price; is that right?

11 A. If this were used as the Make Allowance, yes.

12 Q. Okay. And so if they just did nothing -- if a  
13 processor did nothing else other than just sell exactly as  
14 that formula allowed at the Class III price, they would  
15 already have in this example that 17.5% return on  
16 investment as a percentage of the total cost of that  
17 product being made as a profit.

18 A. I think that's a little sloppy thinking because  
19 you have selected the high cost plants and are assuming  
20 that that is what would be included as the Make Allowance.  
21 And maybe you would want to follow that through with the  
22 all plants or something else.

23 Q. Okay.

24 A. But, I mean, at least, qualify your statement, I  
25 think, for the high cost plant that's -- that's a  
26 legitimate conclusion to draw.

27 Q. And that's fair because I'm here representing  
28 National Milk, so I want to use the number that's best for





1 me.

2 But we can -- we can use all plants. So I  
3 calculate that one to be 11.1%.

4 A. Okay.

5 Q. Does that look about right to you?

6 A. I haven't done that calculation, but your earlier  
7 calculation was spot on.

8 Q. Okay. Well -- and just for our record, I'm on  
9 page 12 of 30 of your report, and so that's 11.1% for all  
10 plants under the nonfat dry milk processing.

11 And so if we just use that number, and your number  
12 was used for the Make Allowance, it's -- and all things  
13 just being static, if -- if a plant were to sell a product  
14 at the Class III price, that return on investment would  
15 already be built into the sale of that product?

16 A. For the average plant that's in there, yes. If --  
17 if they were the average plant, then, you know, that's  
18 what would be included in the Make Allowance, if that was  
19 the Make Allowance.

20 Q. And if we harken back to day one, Dr. Vitaliano  
21 told us the way averages work is that some go above and  
22 some go below; is that fair?

23 A. Sure. Sure.

24 Q. Some will be higher than that then, and some will  
25 be lower than that.

26 A. Yes.

27 Q. Okay. And so if -- if costs -- or if the plant is  
28 able to improve, in the same scenario, if a plant is able



1 to improve on its costs and build in some efficiencies,  
2 they can make the product for less than the  
3 Make Allowance, that's another opportunity for them to add  
4 more profit to their bottom line; is that right?

5 A. It is. But, you know, the -- that's still -- I  
6 mean, that is -- I think I stated there in the  
7 commodity-based product orientation that the biggest  
8 opportunity that plants have for increased profitability  
9 is reducing their costs of production.

10 Q. And we have heard from other folks who have  
11 testified already that if they can beat the  
12 Make Allowance, they know that that helps build in some  
13 additional margins for their products.

14 Is that how you understand it would work?

15 A. Well, I would think that it's always a legitimate  
16 goal to reduce your costs of production.

17 Q. And so you understand that for the processors,  
18 there's an inherent built-in goal of trying to increase  
19 their Make Allowance as high as possible so that they can  
20 try and beat it and build in their profit margin?

21 A. I do understand that we would always want to be  
22 pursuing a higher profit in a plant, whether that's by  
23 reduced cost or increased price of product sold or  
24 whatever the efficiency may possibly be.

25 Q. And then if I can take the same example again,  
26 where this Class III price has been set with this ROI  
27 built into it, if -- if they are able to sell their  
28 product for a price greater than the Class III price, so



1 some premium pricing, that's then a third way that they  
2 can also capture additional profits; is that right?

3 A. That's a possibility.

4 Q. And probably a goal, right?

5 A. Well, you would always want to have a price that  
6 is the highest that you can achieve for the sale of your  
7 product.

8 Q. Okay.

9 A. Other things being equal.

10 Q. And then did you look at Dr. Schiek's -- sorry, I  
11 have to make sure I say that right, he's earned it -- did  
12 you look at Dr. Schiek's modeling?

13 A. I didn't. I mean, I took a quick glance at it,  
14 but I have not looked at it in any detail at all.

15 Q. Do you understand what methodology he deployed?

16 A. I understand roughly what was being done there,  
17 yes.

18 Q. How would you characterize it?

19 A. How would I characterize it?

20 Q. Yeah. How would you describe his methodology?

21 A. It would be a standard methodology that economists  
22 might use as one of the means of modeling plant costs.

23 Q. Is it an indexing of the costs?

24 A. From what I have seen, it is the use of prices  
25 over time and factors that would be consistent with those  
26 prices to carry them forward in time.

27 Q. Is it a methodology that you would use to set  
28 Make Allowances?



1           A.     First of all, I'm not in that seat. I do think  
2     it's probably better to survey plants. And this is  
3     casting no dispersions (sic) on that particular  
4     methodology, but if you survey plants, then you not only  
5     get some idea about what the costs were that were  
6     incurred, but also the factors that were used in the  
7     production of the plants. So in other words, some of the  
8     yields that were also changing with plants.

9           Q.     Meaning you have to just take in actual conditions  
10    as they continue to evolve over time, and that modeling  
11    methodology doesn't take those into account?

12          A.     No, it doesn't. I mean, a good example was  
13    yesterday we had several discussions about things even at  
14    the farm level, such as feed costs, for example, and how  
15    those had been inflating over time.

16                 One of the things that's been changing at the farm  
17    level, because of higher feed costs, is increasing use of  
18    genetics to try to promote more feed efficiency and  
19    conversion in dairy cattle, so, you know, I want to use  
20    less feed to make a hundred pounds of milk. Plants do the  
21    same kind of thing. I want to use less electricity to  
22    produce a pound of butter. And, you know, they have  
23    energy recapture opportunities or technologies or  
24    automation that may supplant some of the labor in  
25    operations. So, sure, factors of production should be  
26    identified over time.

27          Q.     And an indexing methodology wouldn't capture those  
28    items?



1           A.     It would be difficult to do that.  I mean, you --  
2     you might make some corrections -- as I said, I haven't  
3     read or looked at Dr. Schiek's studies, and I don't know  
4     if he made any attempt to account for changing factors of  
5     production.

6           Q.     And I will say you were equally as maybe humble or  
7     candid about your own methodology and some of the  
8     shortfalls that were included in the process that you used  
9     as well.  Is that fair?

10          A.     Nothing is going to be perfect.

11          Q.     Are there improvements that we can make on the  
12     2021 and 2023 studies to make sure that they are more  
13     accurate?

14          A.     Absolutely.  I would be a strong promoter, I  
15     guess, of making sure that we had the opportunity to have  
16     a good and representative sample, if not a census of  
17     plants, and that the data were -- at least had the ability  
18     to be audited if you ever felt that was a question or  
19     need.

20          Q.     So if I just want to maybe summarize some of the  
21     areas that I pulled out of either your testimony or your  
22     statements, one of them would be having the study, if you  
23     had your -- if you had your dream of making the most ideal  
24     study, to make sure that it was the most accurate, it  
25     would be changing it from a voluntary study to a mandatory  
26     study.

27                     Would that be one?

28          A.     I think that that would be a good thing to do.  I



1 think the plants would recognize that it's another burden  
2 that they would have to comply with, but that they would  
3 at least feel that they are getting good and accurate data  
4 to be using.

5 Q. And then if it was something that was collected on  
6 a routine basis, it would -- it would be something that  
7 the plant could have processes in place to make that  
8 easier or more efficient for them?

9 A. They could for sure. And it would provide them  
10 internally with a benchmark of their operation relative to  
11 others.

12 Q. So there's a value externally but then also  
13 internally for the plant as well?

14 A. I hope they would view it that way.

15 Q. And would another element be to make sure that the  
16 information was standardized so that when a plant was  
17 responding and inputting a number, we knew that we were  
18 comparing items apples to apples?

19 A. I have tried very hard to do that myself.

20 Q. Are there ways that we can improve on it?

21 A. Boy, I -- I don't know other -- perhaps you would  
22 want to get into the plants and be able to follow their  
23 method -- internal methodologies all the way through to  
24 make sure that the costs that are being reported are the  
25 ones you expected them to be.

26 Q. So, for example, you have some broad categories  
27 like when you talk about headquarters expenses. Is that  
28 an expense category that we could have some



1 standardization around that would make sure that everyone  
2 was including the same numbers in that category?

3 A. Sure. I think that headquarters expense is kind  
4 of a -- an imprecise title, you know, that may go in  
5 there, that may include a variety of items for some plants  
6 and not for others. So, you know, that's one of those  
7 things, if you were taking it line item by line item, you  
8 might look at and question, why is my headquarters expense  
9 so high?

10 Well, if headquarters are also purchasing for  
11 several of their plants, then you may not have a packaging  
12 cost, for example, at the individual plant level or one  
13 that's commonly reported but rather that's included in  
14 headquarters cost offset.

15 Q. And I just used that as an example, but there's  
16 other examples in there where we could be more precise  
17 through a standardization; is that fair?

18 A. There could be. And when you get down to some of  
19 the line items that are asked for in here, I think it's  
20 hard to be any more precise than what we already have.

21 Q. And -- and then another area might be making sure  
22 that the survey is auditable so that we could verify the  
23 data that's in there. Would that be another way to  
24 improve on the study?

25 A. I think that that's good. I mean, it helps to  
26 provide understanding for AMS or whoever is conducting the  
27 study to assure themselves that they know what's going on  
28 in a plant, and I think it is always good to be getting



1 into plants so that you have an idea of process and how  
2 things may have changed. I was not in plants for this  
3 particular study. I have been in the past many times.  
4 And sometimes just walking around and looking at, you  
5 know, what's being done, you know, you might ask a  
6 question about, you know, product in cooler or something  
7 else that you observe.

8 Q. Okay. And -- and another area that in a perfect  
9 world would be more of a standardized allocation of costs,  
10 whether it be using a weighting method or some systematic  
11 way to make sure that the cost allocations are accurately  
12 reflected in each product?

13 A. I think that you ought to agree as an industry on  
14 how that allocation method could or should occur. Costs  
15 have to be allocated in all plants, and we at least want  
16 to make sure that it's being done the same way.

17 Q. And I think in your report you also noted that the  
18 respondents have a great amount of latitude to include  
19 information based on their own interpretation of their  
20 financials.

21 Is that one of the areas that you think we could  
22 improve on as well?

23 A. I don't recall saying that.

24 Q. And that --

25 A. Can you point that out to me?

26 Q. Well, it would pertain to both the depreciation  
27 assignments and then also the valuation of their own  
28 market value assets.





1           A.    As a specific example, yes, that would be one of  
2 the things that you would want to have a discussion on.  
3 As I mentioned, CDFA used to construct and maintain a  
4 depreciation schedule on every major piece of equipment in  
5 the plants, and that's not something I was willing to do.

6           Q.    Okay. And that's because once they have the data,  
7 they can track that over time so that it can't be  
8 something that somebody can manipulate each year through  
9 responding to their studies; is that --

10          A.    Well, this would be where an audit would be  
11 something that would be almost necessary, too, to  
12 identify, do you have that piece of equipment, where is  
13 it, how old is it, what did you pay for that.

14          Q.    And it's fair to say those two categories of  
15 numbers, both depreciation and the market value of the  
16 assets, can have a considerable and significant impact on  
17 the actual costs that is determined for each plant's  
18 production of products?

19          A.    They have an impact, for sure. I mean, as  
20 Mr. Bauer mentioned, you know, his plant was fully  
21 depreciated, and so to him this is a low cost plant. And  
22 it's because he's identifying the non-cash costs of  
23 depreciation, you know, as being zero for him, or close to  
24 it.

25                   I think that we could argue whether that was  
26 really true in the world or not. But for his experience,  
27 it's a low cost plant because he's not depreciating  
28 equipment.



1 Q. How do we account for the fact that the costs that  
2 were collected in your 2023 survey were collected at a --  
3 at the peak of a global pandemic when costs were  
4 extraordinarily high and -- and maybe not representative  
5 of a wider time period?

6 A. I'm old enough to remember when we had  
7 double-digit inflation, and I think that many people don't  
8 recall that kind of thing at all. You know, it's  
9 inflation less than 3, 4%, would be the very norm for  
10 them, and interest rates in those kind of ranges. But  
11 things will change over time. We had a large step, and I  
12 don't know how rapidly we retreat from these interest  
13 rates, but these interest rates may be with us for a long  
14 period of time.

15 Q. So I understand on interest rates, and I'm just --  
16 maybe my question is a little bit different, because I'm  
17 not just -- interest, obviously, is a big cost. But I'm  
18 also just talking about just the general input costs or  
19 the supply costs that a plant had in 2022, which I think  
20 are -- were -- were extraordinarily high and not in a way  
21 that was normal inflationary growth.

22 A. Well, if -- if cost studies were ongoing, I mean,  
23 a regular thing, then you would have the opportunity to  
24 watch and track those.

25 Back in the hearing for the changes that were made  
26 for the 2008 updates to Make Allowances, the big  
27 discussion at that point in time were the increases in  
28 utility costs, electricity and gas. They had risen very



1 rapidly, and the industry was very concerned about it.  
2 They also retreated from those high levels. So costs do  
3 change over time. I -- I would acknowledge that. And  
4 they don't always go up.

5 MS. HANCOCK: Thank you, Dr. Stephenson. I  
6 appreciate your time.

7 THE WITNESS: You're welcome.

8 THE COURT: Additional cross before AMS?

9 Yes, Mr. Miltner.

10 CROSS-EXAMINATION

11 BY MR. MILTNER:

12 Q. Good morning, Dr. Stephenson.

13 A. Good morning.

14 Q. Ms. Hancock covered some of the questions that I  
15 had here, so I'm going to try to not repeat them as best I  
16 can. I'm sure there will be some overlap, though.

17 Ryan Miltner for Select Milk Producers.

18 I was looking back -- and this is now the third  
19 time I have had the opportunity to cross-examine you on  
20 cost surveys, for what that's worth.

21 A. Congratulations.

22 Q. Yeah, thank you. Thank you. I'll get a  
23 certificate and frame it or something.

24 I can promise you only the first couple of  
25 questions will refer to those prior hearings.

26 In the 2006 report you provided, you calculated a  
27 confidence interval for the plants that were reporting,  
28 and you did not calculate a confidence interval for the



1 2021 or the 2023 report.

2 Is that because the sample wasn't random?

3 A. No, it isn't. And, boy, Ryan, you are pulling me  
4 back to a memory that barely tickles neurons on here. I  
5 hadn't looked at that. But I believe that that was one of  
6 the studies where we had, in fact, pulled from a  
7 stratified random draw of geography and plant sizes. So  
8 we could do some calculations to look at what was it that  
9 we actually got in the way of the sample there. So that  
10 was a different goal, I guess, we were trying to achieve,  
11 to have representation across all geographies and across  
12 an observed spectrum of plant sizes. And the goal this  
13 time for me was to assure that we had as many plants as we  
14 could from NDPSR-reportable products.

15 Q. Okay. And for the record, I -- I didn't have a  
16 specific recollection of that exchange until I read it a  
17 few days ago, so don't feel bad.

18 A. Okay.

19 Q. So similarly, in 2006, you calculated an R-squared  
20 that tied the volume of product produced to the total  
21 processing cost.

22 Same -- same rationale for why that wasn't  
23 prepared for these two studies?

24 A. Yes. Over the years, many years, I have performed  
25 different kinds of cost estimates of processing. Some of  
26 them have been synthetic, you know, where we used an  
27 economic engineering approach. Some of them have been  
28 statistical, as I think we have seen with Dr. Schiek's



1 study this time around. And some of them have been survey  
2 approach.

3 My summary at the time I had done some different  
4 approaches was that the sample approach, the survey  
5 approach was the best estimate that we had of plants  
6 within known sizes. If we were trying to go on size of --  
7 outside of observable practices, then you need to do  
8 something else.

9 Q. So outside of a statistical measure, could you  
10 reasonably draw any conclusions about the size of plants  
11 and their cost of operations for the 2023 report you have  
12 provided?

13 A. No, I haven't done that. I -- I mean, I can have  
14 observations where -- in fact, you can see that in the  
15 tables in here where you will look and find the  
16 identification of the low cost and high cost groupings of  
17 plants, and you will generally notice that they tend to be  
18 larger volume plants, you know, that are low cost  
19 operations. It's not absolutely true and characteristic.  
20 We do have small plants that are very competitive, but it  
21 does tend to be true in the aggregate.

22 Q. Okay. So now -- now we'll focus more on the 2023  
23 and 2021 reports.

24 So in the 2021 report, there were 57 plants that  
25 reported, if I pulled that out correctly. Does that sound  
26 right to you?

27 A. That was plant product observations. So, yes.  
28 It's a combination of -- of individual plants and the



1 specific products that were reported as being produced  
2 here in the NDPSR. So, for example, a plant that made  
3 nonfat dry milk and butter would be counted as two  
4 observations.

5 Q. Okay. So I'm looking at page 4 of that report,  
6 and you don't necessarily need to look at it unless you  
7 really want to, but I think there were 61 plants broken  
8 down by product, and 57 plants -- so as I -- as I tried to  
9 figure this out, I got 57 plants and 61 plant product  
10 observations.

11 A. I don't believe that there were that many total  
12 plants. I would have to --

13 Q. Okay.

14 A. -- go back and check that. That's -- that's a  
15 large number.

16 Q. Okay. I will take your take your word for that.  
17 I think you know better than I.

18 In the 2023 report, you had 45 plants, correct?

19 A. Well, Ryan, do you know what page you pulled that  
20 from?

21 Q. That's what I'm looking for.

22 A. Somewhere I know I described the number of -- I  
23 think it was firms, plants, and plant product  
24 observations.

25 Q. The problem is that we have about four different  
26 documents to look at.

27 A. Yeah, okay. Maybe.

28 Q. Here we go. At the bottom of page 4 of the



1 report, not your testimony.

2 A. Okay.

3 Q. Okay. So the last paragraph, there were 15  
4 participating firms with ownership of 45 different plants,  
5 and then later in that paragraph, a total of 55 plant  
6 product observations.

7 A. Okay.

8 Q. Okay. Now, there was also a -- and I have --  
9 really don't recall if this was something you stated or  
10 whether it was written in a statement -- approximately 15  
11 overlapping plants.

12 A. Yes.

13 Q. Okay. Are those plants or plant product  
14 observations that overlapped?

15 A. Those would be plant product observations.

16 Q. Okay. And --

17 A. So they would correspond with this 55.

18 Q. Did you state where that overlapping occurred in  
19 terms of which products overlapped?

20 A. I didn't. It was all four products. I don't  
21 recall if there was a predominance of one or more  
22 products, but I think it was fairly uniform. It wasn't a  
23 high number. I would have hoped for more overlap but --

24 Q. So I want to ask about the process for soliciting  
25 the plants to participate in the 2023 report.

26 And in your 2021 report, you stated that you  
27 referred to your proprietary list of plants. Based on  
28 your experience you invited 153 to participate?



1 A. Uh-huh.

2 Q. And you explained that on page 3 and 4 of your  
3 2021 report.

4 For the 2023 report, did you send any invitations  
5 to plants to participate in the 2023 report?

6 A. I think that I did. Although, honestly, I can't  
7 recall as clearly. I do know that IDFA had urged  
8 membership, which at the time was, you know, most of the  
9 plants that we would have had in the report, to  
10 participate in this.

11 Q. And I know you said you don't recall, so this is  
12 going to be an awkward question, I suppose. Would you  
13 have sent an invitation to the 96 plants who didn't  
14 respond to your 2021 invitation and asked them to consider  
15 participating this time around?

16 A. I was trying to make sure that we got at least the  
17 plants that we had last time and then pick up some  
18 additional plants. So I was more focused on assuring that  
19 we had the same plants, if we could, so we could look at  
20 how costs may have changed over this intervening years,  
21 and then pick up some additional plants as well.

22 MR. MILTNER: Your Honor, I have a document I'd  
23 like to ask the witness some questions about. Could I  
24 approach him with this?

25 THE COURT: Yes, you may.

26 MR. MILTNER: I do have copies for your Honor and  
27 the rest of the room.

28 THE COURT: Is this something you want marked?





1 MR. MILTNER: Yes, please.

2 THE COURT: Mr. Miltner's handing this document  
3 out. Let's go ahead and mark it for identification as  
4 Exhibit 179.

5 (Thereafter, Exhibit Number 179 was marked  
6 for identification.)

7 THE COURT: I guess we should have some  
8 description. It's a February 16th, 2023, e-mail from  
9 Chris Allen, A-L-L-E-N. It doesn't -- the "to" line is  
10 redacted. The subject line is "FMMO Update and New  
11 Stephenson Cost Survey." 179 for identification.

12 MR. MILTNER: I trust you over me, your Honor.  
13 And were those comments off the record or on?

14 THE COURT: That should be on the record, just  
15 like we always do, an identified document. Yeah. This  
16 witness has been shown the document, and Mr. Miltner's  
17 going to ask him some questions about it, as I understand.

18 MR. MILTNER: I am.

19 BY MR. MILTNER:

20 Q. And I would also -- I appreciate your Honor  
21 characterizing the document. I really would like to focus  
22 on what appears after the forward, and that is that this  
23 is an e-mail from Michael Dykes, sent on February 16th,  
24 2023, to himself with CC's and -- and a number of blind  
25 copies.

26 Dr. Stephenson, have you -- did you receive this  
27 e-mail by chance? Were you a blind copy recipient?

28 A. No. This is the first time I have seen this.



1 Q. In the very last paragraph, it -- the e-mail  
2 reads: "If you have any questions about your company's  
3 participation in the survey, we encourage you to contact  
4 Dr. Stephenson directly." And I have redacted phone  
5 numbers and e-mails.

6 Did any members of IDFA contact you directly about  
7 the participation in the 2023 report?

8 A. Yes. I did have a few. Most of them would have  
9 CC'ed -- in fact, I think all of them probably did CC a  
10 member of IDFA's staff. But there were a few plants --  
11 and this is not unusual for me -- who are concerned about  
12 the proprietary nature of the data that's collected, and  
13 they wanted a non-disclosure agreement signed, so I was  
14 always willing to do that. And that was the nature of the  
15 direct contact from plants, you know, inquiring about the  
16 process.

17 Q. And I think you stated how important it is to  
18 maintain the confidentiality of firm information for your  
19 reputation and the integrity of the study?

20 A. I think it's critical.

21 Q. In the third paragraph of this e-mail, it reads:  
22 "In anticipation of a possible USDA hearing to consider  
23 possible adjustments to Make Allowances, IDFA and WCMA  
24 have commissioned Dr. Mark Stephenson to update his most  
25 recent cost of processing study to capture manufacturing  
26 data from 2021 to 2022."

27 This e-mail, having been sent on February 16th, I  
28 assume that you were contacted and commissioned prior to



1 February 16th by IDFA?

2 A. I had been contacted about updating this study to  
3 see if I was willing or prepared to do that. And, yes, I  
4 had been prior to this e-mail.

5 Q. And earlier you testified that you might have, but  
6 you don't specifically recall, whether you invited anybody  
7 to participate in the 2023 report, but you did testify  
8 that IDFA and WCMA urged their members to participate.

9 Other than the urging, which you reference, and  
10 perhaps your invitation, would there have been any other  
11 way for industry participants to participate in the 2023  
12 report?

13 A. Anybody that would have contacted me and asked  
14 about it, or even if they had the link to the online  
15 application that did collect the data for me, would have  
16 been able to participate. They would have been included  
17 in here as any other plant, only if they made products  
18 that were NDPSR reportable and had been completed to my  
19 satisfaction.

20 Q. So if -- if a firm received the link somehow, and  
21 they clicked on the link, it would take them to the  
22 reporting software that you have included as an appendix  
23 and went through yesterday, correct?

24 A. Correct.

25 Q. Would they have -- would they have been required  
26 to have any specific access key or something in order to  
27 start inputting data?

28 A. No. Like some other protected sites, if you have



1 not been a guest there before, the first thing you do is  
2 to enter a user name and password. And when you have done  
3 that, you then have access to begin entering individual  
4 data.

5 Q. But they would have to have the link in order  
6 to -- that site -- I guess, I'm -- let me rephrase that,  
7 make it more of a question.

8 Would there have been a way for someone to locate  
9 the survey software without having been provided that link  
10 by somebody?

11 A. It's conceivable. The search engines crawl  
12 through websites and identify all kinds of things. And I  
13 did not put something on that page that says "don't index  
14 this" or "don't search here." But it was not a widely  
15 advertised link. Well, I didn't want to deal with a lot  
16 of mischief either.

17 Q. I can understand.

18 When did you complete the work on the 2023 report?

19 A. Oh -- I don't recall exactly the date, but it  
20 would have been in June. I mean, the final report was  
21 written up very shortly after.

22 I had urged folks -- this e-mail is not incorrect.  
23 I mean, it is quite correct. I had hoped that by  
24 April 14th we would have all of the entries. But as I  
25 mentioned the other day, not everybody gets things done  
26 quite as quickly as I might want. And we had a number of  
27 plants that said, would it be okay if we extend that  
28 deadline a little bit, and -- and I moved the goal post a



1 couple of times.

2 Q. And "June" is a perfectly fine answer for my  
3 question.

4 When you did complete the report, did you submit  
5 it to IDFA and Wisconsin Cheese Makers?

6 A. I did.

7 Q. Did you submit the report to anyone else?

8 A. I believe that it was circulated at that time. I  
9 was not trying to be closed or careful about that in  
10 particular. I suggested that they circulate the link that  
11 had the report posted on it.

12 Q. When you say "it was circulated," it was  
13 circulated by IDFA or Wisconsin Cheese Makers?

14 A. I posted the final report on a former website that  
15 I maintained at the University of Wisconsin. I was  
16 retired at the time but still able to do that much. And  
17 it was, you know, as circulated as people wanted it to be.  
18 So in other words, anybody that had known about that could  
19 rather easily download the report.

20 Q. Thank you.

21 On your 2021 report on page 3, you describe it as  
22 a working paper. And I'm going to break my almost  
23 promise. In 2026, that was a working paper, too, and in  
24 your testimony -- I'm sorry, 2006 -- in 2006 -- maybe  
25 we'll be here again in 2026.

26 In 2006 --

27 A. I won't, Ryan.

28 Q. In 2006, you testified, "In academia, we refer to



1 a working paper as something that is not the final paper  
2 on the entire project you are doing."

3 Is that a fair description of the 2021 report  
4 also?

5 A. No. I -- by the time that these have come out, I  
6 want to make sure that when they are released to anybody  
7 that they are what I would consider to be a final  
8 document. And the reason for that is that I have just  
9 discovered in the past that if you've got another plant  
10 that's submitted data, or two, or three, that might  
11 change, you know, reporting tables just a bit, you know,  
12 with that extra plant data in there, it just becomes  
13 confusing, because people start to reference two or three  
14 different working papers that have slightly different  
15 values.

16 Q. Do you have the 2021 report handy with you?  
17 Exhibit 158, I believe.

18 A. I think so. Although you referenced a page 3, and  
19 mine here starts with page 8 of 33. I don't know if I  
20 pulled something else off. But it's -- I have here  
21 Hearing Exhibit 158. To my point --

22 MR. MILTNER: Mr. Rosenbaum has handed me a copy  
23 of his Exhibit 158.

24 And, your Honor, could I hand this to the witness?

25 THE COURT: Yes.

26 Mr. Rosenbaum, did you want to say something?

27 MR. ROSENBAUM: This is probably unnecessary, but  
28 because there had already been a copy of this exhibit



1 entered as 158, we had originally planned to make it an  
2 attachment to another document, and that's why he has a  
3 copy that has a different numbering. But we're going to  
4 give him the official 158 so that Mr. Miltner's questions  
5 and -- will be -- have the same pagination as --

6 THE COURT: No problem at all.

7 MR. ROSENBAUM: -- what the witness has.

8 THE COURT: Smoothly handled. I don't think  
9 anyone is going to object. I also have a copy.

10 MR. MILTNER: And I appreciate Mr. Rosenbaum  
11 helping us out with that.

12 BY MR. MILTNER:

13 Q. All right. Dr. Stephenson, do you see the third  
14 paragraph on page 3 there?

15 A. Yes. "This report is considered to be a working  
16 paper."

17 Q. So the document that is Exhibit 158, is that  
18 indeed a working paper?

19 A. No. And I can explain I think why that's in  
20 there.

21 Q. Okay.

22 A. This was a few paragraphs of copied text from an  
23 earlier report. So copy and paste, that was an editing  
24 error on my part.

25 Q. Great. So the --

26 A. The final report that was posted on the website  
27 and made widely available through IDFA -- or not through  
28 IDFA -- through USDA and others was, in fact, the final



1 report.

2 Q. And then so I note the 2023 report does not refer  
3 to it being a working paper.

4 Is the 2023 report a final report?

5 A. Yes, it is.

6 Q. Okay. So, now, with respect to the 2023 report --  
7 the next questions I have deal with -- primarily with  
8 NDPSR.

9 So in the 2023 report, on page 4, you stated, "In  
10 the 2021 study, plant selection was more targeted. It was  
11 felt important to assure that plants producing  
12 products" -- I'm sorry -- "producing product that may be  
13 included in the National Dairy Products Sales Report,  
14 NDPSR, which determines the product prices used in the  
15 PPFs should be solicited."

16 I didn't see a similar statement in your 2023  
17 report, but from your testimony, can I conclude that that  
18 was still an aim of the 2023 report?

19 A. It was. In other words, I didn't want to go back  
20 to earlier criteria that we used, such as geography and  
21 plant size, that type of thing, or frontier of best  
22 practice plants. This was meant to be NDPSR targeted  
23 operations.

24 Q. So even though you targeted plants in the 2021  
25 report that produced the NDPSR-reportable commodities --  
26 and I'm looking now at page 4 of Exhibit 158 -- I see that  
27 you targeted plants that produced 640-pound block cheddar.

28 A. Yes.





1 Q. Which is not an NDPSR product, is it?

2 A. No.

3 Q. Why would you want to survey those plants?

4 A. This had been a request from USDA to look at or  
5 include those, or not exclude them from the 2021 study  
6 that was done. Not that we would use that in reporting  
7 here, but if it was decided that this is something that  
8 you might want to include, could we have the beginnings at  
9 least of a benchmark of those costs.

10 Q. Were plants that produced 640-pound blocks  
11 actually responding -- were they respondents to the 2021  
12 request?

13 A. Yes. But all of the plants that produce 640s also  
14 produced 40s.

15 Q. Were the costs of those plants producing 640-pound  
16 blocks segregated from the cost of producing 40-pound  
17 blocks?

18 A. The plants weren't segregated. The costs up to  
19 the point of packaging were not deemed to be different or  
20 I didn't treat that differently. And likewise, on the  
21 general ledger post processing, you know, for table  
22 summary data, would have been included packaging costs,  
23 and handling of the 640s were not.

24 Q. Did any of the plants that produced both 640-pound  
25 blocks and 40-pound blocks attempt to self-allocate their  
26 costs between those two products?

27 A. I don't recall. I would have to go back in to  
28 take a look and see. You may recall yesterday as we were



1 going through some of the screenshots, that if you  
2 reported cheddar cheese processing as a product in your  
3 plant, then the next page also allowed -- or began to ask  
4 questions about what package sizes were produced. So  
5 40-pound blocks could have been one of those. 640s could  
6 have been one. 500-pound barrels could have been one.  
7 Mammoth could have been an opportunity. But, you know,  
8 we're not -- and we wanted to take all of those plant  
9 products then and be able to ask specific packaging costs  
10 for the different package sizes if we're interested in  
11 them.

12 Q. So you have hit on a term I'm not familiar with.  
13 What's a mammoth?

14 A. It's a large wheel of cheddar cheese. They can be  
15 of various sizes from probably 50 pounds to 250 pounds or  
16 greater.

17 Q. Similar to a Parmigiano Reggiano wheel?

18 A. Yes. They are usually made for specialty  
19 purposes.

20 Q. Just curious, did anybody report those to you?

21 A. No.

22 Q. Okay. Okay. So similarly, Table 1 of  
23 Exhibit 156, you targeted nonfat dry milk or skim milk  
24 powder?

25 A. Table 1 of 156.

26 Q. Sorry, did I say -- it is the -- 158, my  
27 apologies.

28 A. 158. Okay.



1 So question again, please, Ryan?

2 Q. Yes. You targeted plants producing nonfat dry  
3 milk or skim milk powder?

4 A. Yes.

5 Q. Is it your experience that the costs for skim milk  
6 powder are very similar to those for nonfat dry milk?

7 A. Very similar. The make could be different, I  
8 understand that. If you are reblending lactose back into  
9 a finished nonfat product, that may be more expensive  
10 than -- than pulling protein out in the liquid form ahead  
11 of time.

12 Q. Did you similarly exclude the packaging costs of  
13 plants that were making skim milk powder in the same  
14 manner as you did for plants producing 640-pound blocks?

15 A. No, not necessarily. If -- if they were  
16 25-kilogram bags or 50-kilogram bags or totes, then that  
17 would have been included as well as being not  
18 significantly different packaging.

19 Q. And then finally in the same table you list plants  
20 producing dry whey or WPC.

21 Did you -- did you have any plants that responded  
22 that produced WPC?

23 A. I did, but not enough to report.

24 Q. So there was no reporting of WPC -- what do you  
25 mean by "not enough to report"?

26 A. I would not report data if I didn't have at least  
27 three plants that had reported data, for confidentiality  
28 reasons.



1 Q. Is it true that WPC is a very different product  
2 from dry whey?

3 A. Absolutely.

4 Q. That the difference between dry whey and WPC is  
5 very distinct?

6 A. It is very distinct. I understand the process of  
7 manufacture as well. This, again, was a request on the  
8 part of USDA, could we possibly include that and take a  
9 look at this, but it was not reported to USDA because  
10 there were too few to report.

11 Q. Did any of the costs of manufacturing WPC get  
12 included in the results of the 2021 study?

13 A. No.

14 Q. Okay. So the eight plants that were reported,  
15 those were all exclusively dry whey producers?

16 A. Yes.

17 Q. With respect to nonfat dry milk, you had an  
18 exchange yesterday with Mr. Rosenbaum about an AMPI plant  
19 that produced high heat nonfat.

20 Do you recall that?

21 A. I do.

22 Q. And if I heard correctly, you concluded that the  
23 AMPI's plants costs were at or near the median of the  
24 total reported plant costs; was that correct?

25 A. That's correct.

26 Q. And so including or excluding that specific plant  
27 had a negligible impact on the overall survey; is that  
28 right?



1 A. That's correct.

2 Q. You also stated that that AMPI plant producing  
3 high heat nonfat dry milk was included initially because  
4 its response to you indicated only nonfat dry milk and  
5 didn't indicate whether it was high heat or low heat; is  
6 that correct?

7 A. That's correct.

8 Q. Do you know if there were any similar ambiguous  
9 product designations that occurred with other reporting  
10 plants?

11 A. I'm not aware of them. It -- it is a possibility.  
12 This is one of the places where audited reporting might be  
13 useful to have for something like that. I was not aware  
14 that that was a high heat only plant. And, you know, the  
15 reporting on it should have been nonfat dry milk high  
16 heat, but it was just nonfat dry milk.

17 Q. And the next question I had, which I'll read for  
18 the record, but we'll skip is: Is this the kind of error  
19 that one would expect to avoid with an audited survey?

20 A. Yes.

21 Q. Okay. With respect to 40-pound blocks, I believe  
22 it was Agri-Mark's witness earlier testified that they  
23 produced 40-pound block cheddar, and then depending on the  
24 quality of the make, they will decide what they will sell  
25 as a commodity and what might be aged to become Cabot  
26 cheese.

27 How would a situation like that be handled in your  
28 survey, where a 40-pound block manufacturer, clearly



1 making a 40-pound product, which might or might not be  
2 reportable, how do you handle that type of inclusion in  
3 your reports?

4 A. I don't make a distinguish -- or I don't  
5 distinguish that kind of difference in plants that are  
6 producing product for long-term aging or something a  
7 little bit different. You may recall a discussion we had  
8 yesterday as well where I indicated that long-term storage  
9 is specifically excluded from this. So those costs, I  
10 don't want to try to capture.

11 But my understanding is that in these plants where  
12 we're looking at identifying product that are candidates  
13 for long-term storage, is that you plug or sample the  
14 block, and you would have an expert make a determination  
15 as to whether they think this will take on aging of as  
16 many months as you are hoping to get on it.

17 Q. And in questions you answered that the volume of  
18 cheese and whey reported in the 2023 report was  
19 approximately 50% of the NDPSR surveyed volume.

20 Is that -- did I get that correct?

21 A. Yes.

22 Q. And --

23 A. Excuse me, of the NASS volume.

24 Q. Of the NASS volume. Very good.

25 And 80 to 85% of the butter and powder, correct?

26 A. Yes.

27 MR. MILTNER: Your Honor, I have more questions,  
28 based on how long we have gone, 20, 30 minutes. We have



1     been going an hour and 45. I don't know if the court  
2     reporter would like a break.

3             THE COURT: I was going to say, I think we have  
4     been going an hour and 45 minutes.

5             Let's take a 15-minute break. Let's come back at  
6     10:00.

7                     (Whereupon, a break was taken.)

8             THE COURT: Back on the record.

9             Your witness, Mr. Miltner.

10            MR. MILTNER: Thank you, your Honor.

11     BY MR. MILTNER:

12            Q. You spent about an hour yesterday, thereabouts,  
13     with Ms. Hancock going over Appendix A, which I  
14     appreciated because I think it helped give us greater  
15     insight about the methodology and what the plants were  
16     looking at when they provided you information.

17            And I was wondering, as we went through that and  
18     we walked through some of the questions and decision  
19     points, did any survey participants reach out to you  
20     through this process as they completed the survey about  
21     any issues with the online model or the online system?

22            A. Absolutely. There were a few places where the  
23     model couldn't proceed past pages with it, and part of the  
24     reason was that, I did do this fairly quickly. I didn't  
25     have the chance to harden the model and make sure that  
26     people couldn't do things that they shouldn't have been  
27     doing. And I think I gave the example yesterday of  
28     peeking ahead, and when it did that, it did save pages



1 without data in it and would cause a problem for that user  
2 to not be able to enter that data until I purged the page.

3 So there were a couple of things. That wouldn't  
4 happen normally if there had been enough time to  
5 completely debug a model like that.

6 Q. About how frequently, once you've got a report  
7 back from a plant, did you have to reach back out to get  
8 additional clarification on an outlier or an allocation  
9 question or anything else that caught your attention?

10 A. Maybe 25% of entries. Some folks I think managed  
11 to enter data in a straightforward manner, and the glance  
12 at the data, looking through the information didn't raise  
13 any red flags for me. So, you know, it was data that I  
14 would flag as being accepted.

15 Q. Along those lines, you have in your testimony the  
16 line, "There are several key cross-checks in the data  
17 collection." I don't know if you have talked about some  
18 of those cross-checks.

19 Could you let us know what you are looking for or  
20 what those cross-checks might be, please?

21 A. One of the cross-checks, and a primary one I  
22 mentioned yesterday, and that was the use of doing this  
23 mass balance calculation there. And the mass balance  
24 calculation just simply says, have we accounted for all of  
25 the components that we think came into the plant versus  
26 all of those that were sold out of the plant. And I think  
27 that that would be a fairly standard kind of accounting  
28 process to take a look at that.





1           And by the way, Ryan, this is one of the places  
2 where you may be able to do some yield calculations, and  
3 if you wanted to fine tune that, you could -- you could  
4 take a look at more detail asking just a few other  
5 questions that would let you get some yield parameter  
6 data.

7           There are other places where there are  
8 cross-checks. So, for example, you're identifying the  
9 pounds of dairy product by a package size that you  
10 produced over the course of a year, and then you are  
11 entering data as to how many pounds of this cheddar  
12 product you manufactured in the each of the 12 months.  
13 And those numbers need to be the same. They aren't always  
14 the same, and if they aren't, then I need to understand  
15 why. You know, I mean, what -- what is there that's  
16 different. And there are five or six of those kinds of  
17 cross-checks throughout the data entry form.

18         Q.    When you are doing the mass balance, do you get  
19 down to a level that is as granular as in-plant losses  
20 versus losses in shrink versus, you know, loss through  
21 fines at a cheese plant, or things like that?

22         A.    I don't ask for those values, but, you know, I --  
23 I would do much like you might in a federal audit where  
24 you are looking at shrink or overage in a particular  
25 plant. And to me, this needs to be within a pretty small  
26 tolerance. And for me -- I know what your question may  
27 be, what is a pretty small tolerance? 2% is something  
28 that I look at. And if it's outside that range, then it



1 seems to me that I have at least got to ask some  
2 questions.

3 Q. If it were over that, you would be asking, did you  
4 have a bunch of off-spec material or off-spec product that  
5 you had to scrap, or something like that?

6 A. Something like that, yes.

7 Q. After you talk about the cross-checks, you say,  
8 "Submitting intentionally deceptive costs would raise red  
9 flags and prompt questions from me."

10 Did you have any instances where you thought  
11 somebody was submitting intentionally deceptive costs?

12 A. I have never had that instance. I have had plenty  
13 of times when I got data that were flagged from -- from my  
14 screening processes, whether by these cross-checks or by  
15 the fact that they might be a statistical outlier of the  
16 body of samples that I have had by the time I'm done. And  
17 most of the time, it would be an innocent clerical error  
18 or omission, you know, of something that had not been  
19 included that -- sometimes I think we have folks in the  
20 plants that have very narrow job descriptions, you know,  
21 that are assigned this kind of task and maybe haven't  
22 fully understood what I'm trying to do with it. So it is  
23 almost like they are trying to fill out a form that they  
24 would fill out for a plant report or something to AMS  
25 but -- and a clerical error is certainly something that  
26 would be possible, and those are usually very obvious.

27 Q. So yesterday there was some cross-examination from  
28 Dr. Bozic, and you noted -- I think in your statement as



1 well -- an increased variance in the reported costs in the  
2 2023 report compared to certainly the 2006 report, but  
3 also I think you said compared to the 2021 report.

4 What do you ascribe that increased variance to?

5 A. Well, the biggest variance that I witnessed was  
6 actually in the 2021 data. I mean it had been a while  
7 since I had done a plant study like this, but I had done  
8 many of them before. And in the 2021 data is when I first  
9 saw that the range of plant observations was quite  
10 different. I don't recall saying that 2023 looked a lot  
11 different than 2021. If it was, it was maybe a little bit  
12 different. But the variance is much more than it had been  
13 in the past.

14 Q. Dr. Bozic also noted, and I think this was his  
15 characterization, a bimodal distribution of the costs.

16 And I think you agreed that the distribution was  
17 bimodal; is that correct?

18 A. Tended to see clusters at both ends of low cost  
19 plants and high cost plants. And in the past, you  
20 normally saw something that was more like a normal  
21 distribution, where the body of respondents would be  
22 somewhere in the middle, you know, and the really low cost  
23 plants or really high cost plants tended to be few in  
24 number.

25 Q. Not to dive too far back into the way back  
26 machine, but that normal distribution is part of the  
27 statistical analysis you did in 2006, right?

28 A. Yes. I used to, at least, talk about the



1 qualities of the data that were there, some of those  
2 statistical measures.

3 Q. So if we think about a normal distribution and a  
4 bimodal distribution, and now USDA has to decide where do  
5 we peg a Make Allowance, which has been at the weighted  
6 average usually, historically.

7 . Given that the distribution is now bimodal,  
8 should that inform USDA as to where it might want to draw  
9 a line with respect to a changed Make Allowance?

10 A. A couple of things, Ryan.

11 First of all, when I have looked at what has been  
12 recommended in a decision from AMS, it's never been  
13 completely obvious to me how that decision was made  
14 because it did not necessarily reflect the average cost  
15 that I had reported or seen. You know, a lot of times I  
16 would look at that and recognize that it's maybe typically  
17 somewhere on the higher cost side of average but well  
18 below the highest cost plants.

19 So conceptually, with what you are saying, if they  
20 were to follow that, they might capture most or all of the  
21 low cost plants as being -- having their operating costs  
22 covered, well covered, and a few of the plants at the  
23 higher end not covered, by just the Make Allowance alone.

24 And I think that part of the danger is that we  
25 also assume that, well, then, many of these plants are not  
26 covering their costs, they must be losing money, just  
27 hemorrhaging money, you know. And I don't believe that's  
28 the case. Why would we stay in business if that were



1 happening? There are probably also plants that are  
2 selling their product at the higher end of the NDPSR price  
3 observations.

4 Q. Do you have any information as to the ages of the  
5 facilities that participated in the 2023 report?

6 A. No. I haven't been collecting that data. I used  
7 to collect that data years ago to at least get some idea  
8 of when the last significant investment in the plant was  
9 done.

10 I -- by the way, I haven't made that explicit in  
11 the 2023 report, but I have usually done that in the past  
12 to ask whether the plant had had any significant  
13 interruptions in operation during the course of the year.  
14 So if a plant had to be shut down for a week or a month or  
15 something else, for whatever reasons, then this may not be  
16 typical data that I'm receiving.

17 Q. That's an interesting point, which makes me  
18 wonder, if a plant didn't operate consistently throughout  
19 the year because it was a balancing facility, would that  
20 also skew the data?

21 A. No, I try to capture -- well, I mean, it may  
22 change that. I -- it's -- it's one of the conjectures  
23 that we might have as to why a plant operates at higher  
24 costs. They are carrying capacity that's not used all of  
25 the time, and, you know, that is certainly an additional  
26 cost.

27 I do try to ask enough questions to be able to  
28 look at, at least, the monthly differences in product



1 manufacturing out here, so that we can see whether the  
2 plant was providing a good deal of seasonal balancing. I  
3 don't look at inter-week balancing or collect data at that  
4 level.

5 Q. If a plant is seasonally balancing, would their  
6 fixed costs all be loaded on to the months in which they  
7 are producing product, or would you exclude some of those  
8 fixed costs?

9 A. No, their fixed costs would be allocated across  
10 the pounds of product that they produced in the 12 months.

11 Q. In response to another question from Dr. Bozic,  
12 you noted that you see plants being built where it doesn't  
13 matter if the plant is pooled or not.

14 Do you recall that statement?

15 A. I think so.

16 Q. Can you elaborate on that observation, please?

17 A. Well, there are places in our current economic  
18 environment and regulatory environment where there's  
19 really not much money in the pool to be attractive by the  
20 time you zoned out to the edge, perhaps, of the regulation  
21 that you would have access to. And plants are making  
22 investment decisions that really don't depend on this.

23 When I first started at Cornell University many  
24 years ago, we might have a firm, a company, that would  
25 realize, I have got customers for more product, I need to  
26 make more product, I intend to build a plant, where should  
27 I build it? And we would look at such things as, well,  
28 where do we see growth in milk production happening in the



1 country that makes sense to be a part of catching that  
2 wave?

3 And then we didn't get those kind of questions for  
4 a period of time. And this was when we found plants and  
5 dairy farms sitting down to talk together and saying,  
6 where do you want to make milk? You know, let's go put a  
7 plant and, you know, produce dairy products where it  
8 hadn't been before.

9 And so it is a different environment, and many of  
10 those regions are not finding that there's enough money  
11 available to be a pool plant, and farms appear to be okay  
12 with that.

13 Q. Can you give examples of states or regions where  
14 you see that occurring?

15 A. Well, in what was my own backyard, anyway, in the  
16 Upper Midwest, the I-29 corridor, in places where we have  
17 seen some significant plant investments, and not all those  
18 plants are pooling all the milk. They are making  
19 investments that aren't based on expected equalization  
20 payments.

21 Q. There's been testimony about large cheese plants  
22 being constructed in -- I think specifically was  
23 references to Texas, maybe New Mexico, and other locations  
24 in the west, maybe South Dakota as well.

25 Would you include those plants in that category?

26 A. Possibly. Some of that new capacity coming online  
27 I think will -- I would expect would change the behavior  
28 of milk movements across the South and Southwest where we



1 have seen -- that being a milk supply for the Southeast,  
2 it's quite deficit. If there's a nearby home, even if  
3 it's at a lower price, perhaps below Federal Order  
4 minimums in the area, could very well be the case that  
5 farms decide not paying that hauling cost into the  
6 Southeast would be an advantage.

7 Q. On page 7 of your statement I think you either  
8 directly or tangentially address that, where you stated  
9 there are "safety relief systems in Federal Orders that  
10 are expected to be employed when the system isn't working  
11 properly." And then you suggest that insufficient  
12 Make Allowance might be a reason -- or might be a reason  
13 plants depool to allow themselves of one of those safety  
14 relief mechanisms. You identified that as one of the  
15 safety relief mechanisms.

16 What are some others that you might refer to?

17 A. Well, depooling is one of the obvious ones, and  
18 ones that we can -- we can see in there.

19 I had two or three in my mind, and they are  
20 escaping me right now. Let me think about it for a  
21 minute, Ryan.

22 But depooling is -- is I think one of the obvious  
23 ones where a Federal Order system may not be operating as  
24 hoped for, but the safety mechanism is there to use as  
25 intended by, you know, the Federal Milk Marketing Order,  
26 should it need to be.

27 Q. You provided an example of a plant that might be  
28 located in the Southwest but supplying milk to the deficit





1 area in the Southeast just a moment ago.

2 I want to give you another possible example and  
3 ask your opinion on it. There was a producer here from  
4 New Mexico last week who is located in Clovis, or  
5 Portales, one of the two, but very close to a large cheese  
6 plant. And if the most significant available Class I  
7 market to that part of New Mexico would be Dallas, say, a  
8 very substantial distance, several hundred miles, but  
9 still within the same marketing order, if that producer or  
10 that producer's cooperative determines that it is more  
11 economically advantageous to sell milk to a Class III  
12 plant locally rather than to haul within the order a great  
13 distance at a lower return, would that speak to a need to  
14 change Make Allowances or perhaps a need to look at  
15 Class I differentials?

16 A. Could be a variety of reasons, and I think that  
17 both of those would need to be looked at. If there is not  
18 enough money in the pool to create an equalization payment  
19 for milk that's moving in a certain direction, then that  
20 may need to be looked at with Class I differentials.

21 And I think you have to be a little bit careful to  
22 go back and ask yourself questions, and I'm not sure I  
23 want to write policy, but what are the orders trying to  
24 do? If they are there to help assure that we have at  
25 least the opportunity for access to fluid milk, or fluid  
26 milk plants, or convince milk to move in the direction  
27 where it's most needed, I think our Class I differentials  
28 have certainly attempted to do that. They may not be



1 accurate for time and place, but -- but they are moving  
2 milk in directions where it is most needed.

3 And by the way, I didn't say the differentials  
4 were big enough to get it there to move in the direction  
5 in which it's needed.

6 Q. Okay. We'll make sure that's noted in the record.

7 In your testimony, Exhibit 176, on page 6, in your  
8 concluding comments, you state, "I would also suggest that  
9 any parameters in the product price formulas, such as  
10 Make Allowances and yield factors, have periodic  
11 assessment to assure validity of price announcements."

12 A. I'm just about there. Page 6 you said?

13 Q. Page 6. Second to the last paragraph, last  
14 sentence.

15 A. Okay.

16 Q. If we oversimplify the end product formula, it's  
17 the product price minus the Make Allowance times the yield  
18 gives you the milk value, right?

19 A. Yes.

20 Q. So the product prices --

21 A. Oh --

22 Q. Go ahead.

23 A. I just wanted to interrupt you for clarification.  
24 You're jumping straight to milk prices as opposed to  
25 component values.

26 Q. Fair.

27 A. Okay.

28 Q. Gives you the value of -- gives you the value of



1 the component. That's a good clarification.

2 We're having discussions in this hearing about  
3 what should or shouldn't be included in the product price,  
4 but we know those numbers, once they are surveyed, they  
5 are fresh, right? They are a week old, correct?

6 A. Yes.

7 Q. And we're addressing Make Allowances in this  
8 hearing, so they will be hopefully less stale than  
9 15 years.

10 If you have fresh price data and relatively  
11 current allowance data, and your yield information is  
12 still 10, 15, 20 years old in terms of its underlying  
13 assumptions, does your component value that you end up  
14 with reflect the real value of the milk?

15 A. I would stand by my statement here, you know, that  
16 does indicate that we should look at all of the parameters  
17 in those formulas. So there are yield factors, and in the  
18 case of the somewhat more complicated protein value, we  
19 have butterfat and protein interaction factors in there.

20 Q. I'd like to ask about your ROI assumptions in your  
21 report. You mentioned you recall double-digit inflation  
22 and the corresponding high interest rates that they  
23 brought. And I vaguely remember as a young kid getting  
24 about 8% on my savings account and not understanding why  
25 that didn't continue on forever, until I figured out why.

26 A. Blew your whole retirement plan?

27 Q. At age four I already had it planned out, and here  
28 I am working.



1           Are you familiar with the five-year break-even  
2 rate that the St. Louis Fed publishes?

3           A.    I'm not sure that I'm explicitly familiar with it.  
4 The five-year break-even rate?

5           Q.    It is a --

6           A.    Is this a five-year bond treasury bill?

7           Q.    No.  It is the St. Louis Fed's projection of the  
8 inflation rate over the next five years.

9           A.    Oh.  No, I'm not familiar with that.  I guess that  
10 my fumbling here should have been an indication.

11          Q.    That's okay.  We can jump over that.

12                    But it's been 15 years since we have updated  
13 Make Allowances, correct?

14          A.    Yes.

15          Q.    And hopefully we don't do that again, but if we  
16 don't, and you -- your model, if it were to be adopted as  
17 the basis for Make Allowances solely, wouldn't you be  
18 creating a 15-year bond payment to milk processors with a  
19 5.5% coupon?

20          A.    No.  I don't think that that's quite right.  We  
21 did talk with -- a little while ago with Nicole about, you  
22 know, the imputed return on investment that we have in  
23 plants.  But it's more than just that when we're taking a  
24 look at what the plants actually return out of this.  
25 It -- individual plants don't receive the Make Allowance  
26 or the portion of that that is there for the returns.  
27 They buy products and milk at minimum prices and premiums  
28 and discounts from time to time.  They also sell products



1 that are not just at that limit. So I'm not sure that you  
2 can impute that that is the expected return for the plant  
3 over a long period of time.

4 Q. If -- if the Moody's index, though, reverts back  
5 to where it was in January of 2020, would we be  
6 overstating the ROI factor, though?

7 A. For that long a period of time? Yes, you would.  
8 I do think that these costs ought to be considered and  
9 monitored. And costs do change, both up and down. So I  
10 have been a strong proponent of that, let's capture that  
11 on a more frequent basis.

12 Q. And likewise, if the Fed raises rates another  
13 point and a half, then your model would --

14 A. Would understate.

15 Q. -- would understate it, right?

16 A. Yes.

17 Q. Do you have any information from the participants,  
18 or just from your industry knowledge, if cheese  
19 manufacturers use ROI like this to gauge their  
20 profitability rather than EBITA or margin on sales or  
21 something like that?

22 A. I'm not aware that they do.

23 Q. If you look at Exhibit 177 on page 13. This is  
24 the summary costs for butter processing.

25 A. Okay. 13 of 27. This is the processing program?  
26 Exhibit 177.

27 Q. Is that IDFA Exhibit 1?

28 A. IDFA Exhibit 29.



1 Q. I'm sorry. I was looking at the -- 178, my  
2 apologies. It's only going to get worse as we add more  
3 Exhibit Numbers.

4 A. Okay. Page what?

5 Q. 13.

6 A. Yep.

7 Q. I'm looking at -- well, first of all, the row of  
8 low cost plants and the row of high cost plants, is that  
9 the weighted average of that particular subset?

10 A. It is.

11 Q. Okay. So essentially you have set a 25th, 75th,  
12 and 50th percentile, right, in those three rows?

13 A. No, not necessarily.

14 Q. No?

15 A. What's done is that I rank all of the plant  
16 observations, and I'm looking for, you know, the median  
17 break. In this case there were 13 plants. Okay? So the  
18 break would have been seven on one side and six on the  
19 other. And when I make that break, it's not that I throw  
20 the extra plant into low cost or high cost, necessarily.  
21 I look to see whether there's a natural break in the data  
22 and whether it favors that plant going into low cost or  
23 high cost. So that's my characteristic of it. If there  
24 were 12 plants, it would be easy, six in, six out. And  
25 then I do a weighted average calculation of each of these  
26 cost centers across cost lines.

27 Q. Okay. If I look at the return on investment  
28 column, the low cost plants show an ROI of \$0.0269, the



1 high cost plants show an ROI of \$0.0618, and all plants  
2 \$0.0392.

3 Does it seem anomalous that the plants with the  
4 highest costs get the highest return on investment?

5 A. Well, these are plants that would have reported a  
6 higher market value for assets. And, you know, this is  
7 one of the places -- I have tried to explain that a number  
8 of times, that it is a bit of a decision on the part of  
9 the plant what they think they could sell this plant for.  
10 And I don't throw a plant out because they reported too  
11 low a value or too high a value. I have never bought or  
12 sold a butter plant in my life. I have some ideas about  
13 what the cost of a new plant might be or perhaps even the  
14 sale of existing plants. But if it's an outrageous number  
15 that's returned to me, then I would at least ask about  
16 that as to, is this justifiable? So this does reflect  
17 self-reported value of assets.

18 Q. In your work at either Wisconsin or Cornell, did  
19 you participate in any studies on farm profitability?

20 A. Yes.

21 Q. What would be a reasonable ROI for a dairy farm?

22 A. I have never heard a dairy farmer say that there  
23 is one. It's always more.

24 Q. Another joke there that I'll tell you off the  
25 record.

26 A. But we saw Dr. Wolf's report, and I think that the  
27 body of data that he was reporting on that observed that  
28 it was about 6.1%.



1 Q. You think that is regularly achieved by dairy  
2 farms?

3 A. I think that it is regularly exceeded by some  
4 farms, and it's an aspiration for others. So there is  
5 quite a difference, there's no question about it. I -- I  
6 do know many farms that would simply say, if that was what  
7 I expected long-term in the way of an investment return,  
8 I'll look for a different industry or business to work in.

9 Q. I want to talk about degree of transformation, and  
10 you have noted the 2023 report doesn't have the degree of  
11 product transformation allocation method used. It is in  
12 the 2021 report.

13 I believe that in presenting your statement you  
14 testified that you believe the degree of transformation  
15 analysis was valid; is that correct?

16 A. I do, as a concept.

17 Q. And I think there's a quote in your statement that  
18 you favor the weighting of unallocated processing costs by  
19 the degree of transformation of the products as well as  
20 the pounds of milk solids processed.

21 A. Yes.

22 Q. Why do you favor that approach?

23 A. As I mentioned two or three times in testimony, I  
24 have seen cases where we have had plants that maybe had  
25 unusual sales opportunities, but they were selling quite a  
26 bit of some of their components as very lightly  
27 transformed products from the plant. That can skew the  
28 products of interest, the ones that are highly





1 transformed, like skim milk powder or others, to where you  
2 undervalue those -- or those costs for producing that  
3 product.

4 Q. Where you stated in your written testimony that  
5 you favored the weighting of unallocated processing costs  
6 by the degree of transformation of the products as well as  
7 the pounds of milk solids processed, was there any change  
8 between 2021 and 2023 about how you allocated costs across  
9 the pounds of milk solids processed?

10 A. No. That's done exactly the same way. You look  
11 at the total pounds of solids, the butterfat and the  
12 nonfat solids in the products, and based on the percentage  
13 in those products of total milk solids, then you would  
14 allocate based on that. Not different between any of  
15 these studies.

16 Q. You have answered a few questions about this topic  
17 before, but I wanted to dive a little further.

18 You stated that industry participants had asked  
19 for a return to the previous methodology without the  
20 degree of transformation applied. And I think, not  
21 written, you said there were groanings from the industry,  
22 which I liked, and you gave some indication as to where  
23 those objections came from.

24 Were any of those objections or requests to change  
25 the methodology from members of IDFA?

26 A. Both. And when I say "both," I mean IDFA and  
27 National Milk Producers Federation.

28 Q. When IDFA commissioned you and Wisconsin Cheese



1 Makers commissioned you, did they request that the degree  
2 of transformation analysis not be included?

3 A. Yes.

4 Q. And I think in response to a question from  
5 Ms. Hancock, you said that those groanings might be  
6 probably directed to the sample size and the data rather  
7 than the methodology.

8 Did I get that correct?

9 A. Yes. Well, not the sample size, but the sample.

10 Q. Okay.

11 A. So in other words, different plants.

12 Q. So the e-mail we have from IDFA acknowledges that  
13 they have commissioned you to perform this analysis in  
14 order to set Make Allowances, and they asked that this  
15 valid analysis not be done, correct?

16 A. They asked that I return to the analysis that I  
17 had used in the past and which CDFA had used.

18 Q. Okay. So looking at the 2023 report, on page 10,  
19 where you start making observations, and you begin with  
20 nonfat dry milk, you state that reported costs per pound  
21 declined by a little more than 6%, but comparing the  
22 non-transformed weighted average in the 2023 study,  
23 \$0.275, with the non-transformed weighted average values  
24 for the 2021 study, \$0.2154, the nonfat dry milk  
25 processing costs were increased by 12%.

26 So does that mean that if you maintained the  
27 degree of transformation analysis, the reported costs  
28 would have decreased from \$0.293 to \$0.233?



1 A. Let me look.

2 Could you restate your question?

3 Q. Sure. I think I may have my math wrong. Let's  
4 take the numbers out.

5 A. That makes math easier.

6 Q. It does.

7 If you maintained the degree of transformation  
8 analysis, would the costs for producing nonfat dry milk  
9 have shown a decrease between your 2021 report and the  
10 2023 report?

11 A. Theoretically, the transformation number for  
12 butter, as a good example, is smaller than the degree of  
13 transformation for nonfat dry milk, and leaving that in  
14 there would have increased the value for butter and  
15 decreased the value for nonfat dry milk.

16 Q. So if we compared the transformed cost in 2021 to  
17 the transformed cost in 2023 --

18 A. Yeah.

19 Q. -- would that have shown a decrease?

20 A. It might have. And this is one of the reasons I  
21 made the comment about the sample matters, because we had  
22 different plants in the two studies doing different  
23 things. So in one case if you had a few plants that had  
24 lightly processed products in one of the studies, and you  
25 didn't have those plants in the other study, then that  
26 degree of transformation may look quite different. And  
27 that's why I did try to indicate that I felt this was more  
28 of a sample impact than it was just the degree of



1 transformation itself. I think the math is fairly  
2 straightforward in the transformation, but, again, it's  
3 being obfuscated to some extent by the sample itself.

4 Q. The transformed cost in 2021 for cheddar was  
5 \$0.2476. Do you have a transformed value for cheddar  
6 costs in 2023?

7 A. No, I don't. I didn't do those. As I mentioned,  
8 I was asked not to and to return to the previous study, so  
9 I didn't bother doing that.

10 And that wasn't because I was trying to hide  
11 anything, Ryan. I was just not looking for any more work.

12 Q. I would not have expected that you would have done  
13 so.

14 So the whey processing costs that you report are  
15 \$0.3361. Now, for the last few months the NDPSR survey  
16 dry whey prices have averaged around \$0.26, and the range  
17 of costs you report are \$0.2848 to \$0.3952.

18 So if the value of whey in the market is \$0.26 and  
19 the make is \$0.336, why in the world are these plants  
20 making whey?

21 A. I would assume that disposal costs or the lack of  
22 the equipment to make other whey products is not available  
23 to the plants, or this is simply viewed as being a  
24 short-term phenomenon. But we have seen that before where  
25 the implied value is negative. I mean this isn't -- would  
26 not be the first time. We have seen that happen before.

27 Q. Do you -- do you look at the weekly NDPSR reports?

28 A. Not anymore.



1 Q. How long has it been since you looked at them?

2 A. It's been a little while. I mean, I'm roughly  
3 aware of what's happening in the marketplace, but really  
4 not engaged like I was a while ago.

5 Q. Are you roughly aware of any reports that whey  
6 production is declining, dry whey production is declining?

7 A. Not recently. Dry whey production has declined a  
8 good deal over the past many years. It's transferred to  
9 higher protein whey products.

10 Q. Okay. So just to recap a couple things. Your  
11 2023 report had a smaller set of observations than the  
12 2021 report, correct?

13 A. Yes.

14 Q. And as you noted often, the sample matters in  
15 terms of the usefulness of the data reported, correct? Or  
16 the conclusions reached perhaps is more accurate?

17 A. Correct.

18 Q. Of those plants that did report, fully two-thirds  
19 didn't participate in the 2021 report, correct?

20 A. About that, yes.

21 Q. Those new plants that did participate were  
22 identified by an e-mail from IDFA's CEO to its membership  
23 and maybe an e-mail from you, correct?

24 A. Yes.

25 Q. And the 2023 report does not include the degree of  
26 transformation factor which you believe is valid, correct?

27 A. Correct.

28 Q. And you abandoned using that at the request of



1 IDFA who commissioned you to perform the research, right?

2 A. It was the request, yes.

3 MR. MILTNER: Thank you. That's all I have.

4 Could we move the admission of the e-mail that we  
5 marked as 179?

6 THE COURT: Any objections?

7 MR. HILL: I do.

8 THE COURT: You object?

9 MR. HILL: I am objecting just because there's no  
10 one to authenticate this document. The doctor has said --  
11 Dr. Stephenson has said that he never saw this e-mail  
12 before today. There's no witness who can verify that this  
13 document is authentic.

14 MR. MILTNER: That's okay. Mr. Allen will be here  
15 later in the hearing, and we can have him authenticate and  
16 more for admission then.

17 THE COURT: Let's do that. Let's -- everyone help  
18 me remember to do that.

19 MR. MILTNER: I won't forget.

20 MS. HANCOCK: Your Honor --

21 THE COURT: I can imagine what you are going to  
22 say, Ms. Hancock.

23 MS. HANCOCK: You can imagine? Well, maybe I  
24 shouldn't say it, but I'm going to say it because I just  
25 want to make sure that we're treating equitably all of the  
26 documents that we're offering for admission into the  
27 record. And we have other exhibits that attorneys just  
28 made up and weren't even accurate, and we allowed them



1 into the record as exhibits. And my concern here is that  
2 now we're applying a higher standard to an e-mail that  
3 this witness has testified about, and that seemed to be  
4 the only standard we applied previously.

5 And for the integrity of our record, I feel like  
6 we have to apply the same standard for all of our exhibits  
7 that are admitted, whether, you know -- just so that one's  
8 not weighted more than the other, because I have serious  
9 concerns about the integrity of previously admitted  
10 exhibits and the value that they have.

11 And under -- under your authority, we have to have  
12 you actually state on the record that you are allowing our  
13 arguments to be included in the transcript in order to  
14 maintain these comments in the transcripts, because I  
15 think the rule provides that only your ruling is in the  
16 transcript, not our actual arguments.

17 THE COURT: No, I'm ruling that your arguments can  
18 be in the transcript. Let's make that clear, yes.

19 MS. HANCOCK: I appreciate that because I think  
20 that's important for our record.

21 But I have serious concerns about not applying the  
22 same standard across all of our exhibits.

23 THE COURT: Yeah, I hear you, and that's why I --  
24 I think you were going to say. I mean, I think the  
25 ultimate determination of what's valid and appropriate  
26 evidence lies with AMS or, you know, the Secretary acting  
27 under that delegated authority. I want -- I think I want  
28 any of these things to stay in the record so that they can



1 consider that. I've thought about making it an offer of  
2 proof for instance.

3 I think, when -- I mean, these are documents used  
4 in aid of cross-examination. You can show a witness  
5 virtually anything to refresh their recollection. And as  
6 I understand it, if someone presents something and goes  
7 through it and says, this number came from here, that  
8 number came from here, would you agree, and then you  
9 have -- I think having it in the document does not really  
10 change whether you asked it orally or not. And I think --  
11 you know, I think that that's basically okay.

12 Something like this -- I guess the mischief I see  
13 is when something comes into the record, it is sort of  
14 there for all purposes, and this is an e-mail with all  
15 sorts of things in it, names and things like that. So I  
16 think it really should be authenticated.

17 But at the end of the day, I mean, I'm happy to  
18 make my ruling on it, and then it is really up to AMS. In  
19 this case AMS objected to it coming in without being  
20 authenticated.

21 So, yeah. I mean, if you want to revisit the  
22 earlier one. I'm guessing you don't.

23 MS. HANCOCK: I'm happy to revisit the earlier  
24 one. I don't know if you can unring a bell though, so --

25 I will say -- I will note just for the record,  
26 USDA and National Milk both objected to the -- I don't  
27 remember the exhibit number, but it's the one that  
28 Mr. Rosenbaum created himself and asked a witness -- asked





1 Dr. Vitaliano -- or someone, I don't actually remember  
2 who -- to talk about the document. And I think that we  
3 both objected on similar grounds, so --

4 THE COURT: Yeah, I do remember that. And I have  
5 had a chance to, you know, think harder about that and do  
6 some research. And frankly, I guess I would ask the --  
7 actually Mr. Rosenbaum is standing up. I do want to hear  
8 some argument on this because I think it's a legit matter  
9 of practice and procedure for the this hearing.

10 What -- we have a big history of these cases in  
11 the past, and I want to stay consistent with what we have  
12 done in the past here.

13 Has this come up in previous hearings that people  
14 have been involved in? What were the rulings then? I  
15 mean, I haven't had the ability to research that.

16 I'll let Mr. Rosenbaum -- should we let you speak  
17 first, Mr. Rosenbaum? I want to hear further on this.

18 MR. ROSENBAUM: Well, partly I'm standing out of  
19 the motivation that we have 175 exhibits in the record  
20 now. I really don't want -- I do not think it behooves us  
21 to revisit their admission. You have made your decisions,  
22 and if people want to challenge the reliability, they can  
23 do that in their briefs.

24 And I think obviously, yeah, we are going to be  
25 putting on IDFA witnesses. I mean, Mr. Miltner will have  
26 plenty of opportunities to ask questions regarding the  
27 e-mail he's put in, and probably has his own witness who  
28 can do that as well. This is not a material -- that



1 particular document does not present a material challenge  
2 to counsel, and he's not objected to it, and I just feel  
3 we should continue on.

4 THE COURT: Yeah, move on?

5 MR. ROSENBAUM: Move on, yes.

6 THE COURT: Well, I think you are right about  
7 that. I don't think there's any -- I don't need to make a  
8 decision on whether this document is admissible right now  
9 because Mr. Miltner's offered somebody to authenticate it,  
10 and I think when he does, it's perfectly admissible.

11 MR. ROSENBAUM: I mean, no one had any questions  
12 about the nature of the document that was used with  
13 Dr. Vitaliano, and your Honor explained why he found it  
14 helpful personally. I thought it was helpful. I think it  
15 is helpful in the record. In any event, I think that's  
16 water under the bridge at this point. And I think we  
17 should allow Dr. Stephenson to complete his testimony and  
18 move on.

19 THE COURT: Well, I can live with that. And, you  
20 know, I do the best I can here. Wouldn't be the first  
21 time I have been reversed. And, you know, I hate to say  
22 this on the record, but they do say consistency is the  
23 hobgoblin of small minds, right? I will try my very best  
24 to be consistent.

25 And I do not -- we do not have the transcript yet.  
26 I suspect it would behoove anyone using a document they  
27 have created to -- in that case, the document you used to  
28 cross was not a document that was being presented as, you



1 know, this is a piece of evidence that somebody else  
2 created, or here are some numbers, you know. And I think  
3 you probably went through and authenticated what was in  
4 there, you know, and you proved at least far enough  
5 that -- Ms. Hancock's shaking her head, so I take it she  
6 disagrees.

7 Mr. English.

8 MR. ENGLISH: So without being able to provide a  
9 specific example over the last decades that I have done  
10 these hearings, I can assure your Honor and others that  
11 there have been demonstrative exhibits.

12 I think this is a demonstrative document, and I  
13 thought your ruling did not say that it was being admitted  
14 for the truth of its purposes. It was there, and since it  
15 had been referenced, it was appropriate to be along with  
16 the record for that purpose.

17 To the extent that there was examination that  
18 suggested, maybe, I don't buy into the argument that it  
19 was discredited, but to the extent that was there, there  
20 was an examination, and I think your ruling was correct  
21 then.

22 I think, frankly, we're now spending a lot of time  
23 on this issue when the reality is that the document that's  
24 been marked as Exhibit 179, you know, is going to come in  
25 at some point, whether Mr. Allen is here Friday, or thanks  
26 partly to this argument, next Monday, it's going to  
27 happen.

28 And besides that, you know, it leaves Mr. Brown,



1 who is CC'd on the e-mail from Mr. Dykes, will be  
2 testifying sometime this week.

3 So I think, you know, we're spending a lot of time  
4 on that document that we don't need to spend, and I am  
5 perfectly happy to move on to further examination of  
6 Dr. Stephenson.

7 THE COURT: Well --

8 MR. ENGLISH: I won't cut off Ms. Hancock,  
9 obviously if she wants to respond. But I think at some  
10 point if -- and I also agree with Mr. Rosenbaum, if we're  
11 going to start revisiting one exhibit, then we almost have  
12 to revisit others, and I think we may be here a long time.

13 THE COURT: Well, I think everything else has been  
14 admitted, and I don't remember --

15 MR. ENGLISH: Well, but if that ruling had gone  
16 differently, we may have had different reactions to the  
17 exhibits that came before, your Honor.

18 THE COURT: Well, that's true.

19 MR. ENGLISH: So we -- you know, in essence, since  
20 that exhibit, there have been other documents. I just --  
21 I think that it's admitted for -- I think the typical  
22 answer is it's admitted for the weight the Secretary will  
23 give it.

24 THE COURT: Well, yeah. And I do feel that way,  
25 which of course that could be true of anything I admit.  
26 But that one in particular, yes, because I'm not the  
27 ultimate decider here.

28 The reason I wanted to have this discussion on the



1 record is to provide guidance going forward to people, and  
2 Ms. Hancock raised a legitimate concern about consistency,  
3 although I think we are being consistent. We're pretty  
4 much letting in everything, it looks like to me. And  
5 then -- but -- and I don't -- I -- you know, I don't want  
6 to -- I don't want to do that. I mean, I don't want to  
7 make a ruling in the first instance to be of help, I  
8 guess, to the Administrator.

9 MS. HANCOCK: Your Honor, it is really truly only  
10 the consistency. I understand that USDA will give it its  
11 weight.

12 Two things I want to note. One, the document that  
13 I'm referring back to -- and I'm sorry, I don't have the  
14 exhibit number -- but my -- you know, one of my largest  
15 concerns is it was created by an attorney for a -- you  
16 know, that's representing a party here. It was titled  
17 that it is an agreement between IDFA and National Milk.  
18 No agreement has ever been made.

19 Mr. English just said, well, it's not being  
20 offered for the truth of the matter asserted. It doesn't  
21 matter, that's an evidentiary ruling based on a hearsay  
22 determination standard. Once it's admitted, it can be  
23 used for anything.

24 And I am not just concerned for the integrity of  
25 this record, but what we see is, is that parties in  
26 subsequent hearings will pull documents and portions of a  
27 transcript out of a record and use it as binding precedent  
28 going forward.



1           So let's fast forward 15 years to another hearing  
2           in the future, and somebody now has a document in the  
3           record that's been admitted as evidence. And once it's  
4           admitted, it's not admitted for a limited purpose, it's  
5           being admitted as -- as evidence of the record, and it's  
6           titled that it's an agreement between two parties.

7           Now, certainly somebody can try and put it into  
8           context, but you're somewhat beholden to the room having  
9           enough memory of the event and the context within which it  
10          was admitted to put it back into context.

11          So that's my concern with the earlier ruling.

12          THE COURT: Uh-huh.

13          MS. HANCOCK: My concern now, for purposes of  
14          this, is that we're now saying, hey, you have to go  
15          authenticate this, Mr. Miltner, before we're going to  
16          admit it.

17          Well, there's no way that any of our witnesses can  
18          authenticate what Mr. Rosenbaum created and put into the  
19          record, so we had zero authentication for -- for that  
20          document, but now we're saying, you have to go  
21          authenticate it for what it is now. And, now, we -- you  
22          can't apply the same standard unless you just let it in.

23          THE COURT: Well, I'm letting it in. I mean,  
24          we'll authenticate it right now.

25          You produced that document, didn't you, Mr.  
26          Rosenbaum? You created that document, the previous  
27          document?

28          MS. HANCOCK: He's not a witness.



1 THE COURT: Well, we can swear him in and make him  
2 a witness. I don't think there's a problem with that. He  
3 admits that he took numbers from National Milk and numbers  
4 from his own client and was trying to explore, like, what  
5 are the differences here.

6 MS. HANCOCK: I understand --

7 THE COURT: He asked the witness about that. Is  
8 this my number? Is this your number? If the witness  
9 said, I don't know your number, he said, well assume for  
10 purposes of questioning, now, if this were my number would  
11 that be a big difference? Do you have a difference with  
12 that?

13 I mean, and as you said, I mean, you would be  
14 willing to -- to accept the narrative cross-examination of  
15 his words, and I don't see a big difference between that  
16 being in paper. I don't think anyone's really going to  
17 assert that National Milk and Rosenbaum's client have an  
18 agreement just because he -- a document that the lawyer  
19 created says that up at the top.

20 MS. HANCOCK: I mean, I do, I think that you  
21 can't -- my point is that you can't authenticate it  
22 through an attorney who represents a party. You can  
23 authenticate it through the witnesses that testify about a  
24 document. It was created by an attorney and given to a  
25 witness.

26 My only point here is to raise the consistency and  
27 treatment of the exhibits for authentication purposes, and  
28 if Mr. Rosenbaum can have a document that's admitted that



1 he created, that's titled that it's an agreement, when  
2 there is no agreement that anybody has ever testified to  
3 that, then I think that that is a different standard than  
4 what we are applying to the -- to the e-mail that  
5 Mr. Miltner just put before the witness.

6 And as I recall, the standard that we applied  
7 previously was if the witness testified about the  
8 document, and it's in the record, and there's an exchange  
9 about that document, that you wanted the document to be  
10 admitted so that the record was complete in the context of  
11 that examination.

12 I just want the treatment to be the same for  
13 exhibits.

14 THE COURT: Well, all right, Ms. Hancock, I hear  
15 you. But there is a massive difference between an e-mail  
16 between other parties that goes out and whether that's  
17 authenticated or not, and something that a lawyer says, "I  
18 put together these numbers to have a reasonable reference  
19 to consider things."

20 The -- an e-mail, there's nobody that -- there was  
21 nobody here to say this actually went out, was actually  
22 received, or whatever else like that. There's no question  
23 about what the other document is. And I'm sure that's  
24 authenticated in the right sense. I think it's  
25 appropriate to have it in the record, and I think we'll  
26 stay consistent.

27 If there's a third-party document, somebody else  
28 signs something, that is something that -- that needs





1 authentication.

2 And, you know, I would, I guess forewarn folks  
3 cross-examining that they need to, you know, authenticate  
4 what's in these documents.

5 And I think this -- I think Mr. English and others  
6 have talked to this. I don't think there's going to be a  
7 problem about an exhibit -- one, there's going to be a  
8 problem, but we're going to have somebody go jump through  
9 all the hoops on that.

10 Mr. Miltner -- Mr. Hill.

11 MR. HILL: I am sorry I brought us down this  
12 rabbit hole. So I do want to say that Dr. Stephenson does  
13 have a limitation on his time, so whatever the case may  
14 be, I would like to move forward with him to get him out  
15 of here as quickly as possible.

16 THE COURT: That's fair.

17 Real quick, Mr. Miltner.

18 MR. MILTNER: Very quickly. I want to say that I  
19 agree with much of what Ms. Hancock is saying. The fact  
20 that I have a witness coming that was the recipient of the  
21 e-mail and he can deal with this authentication issue is  
22 why I said we'll deal with it later. Had that not been  
23 the case, I think there was enough here with the practice  
24 of this hearing and the way we have admitted evidence, as  
25 Mr. English noted, that we tend to admit exhibits unless  
26 there's a very, very valid reason for excluding it, such  
27 as confidentiality or real questions about its providence,  
28 and then we allow the Department to ascribe the weight to



1 which the Secretary believes it's entitled.

2 And I think that under that standard, we certainly  
3 could admit the e-mail now, but I don't want to belabor  
4 this. We will have someone to authenticate it. But I  
5 also wanted to make sure that I did get on record that I  
6 do believe it is admissible at this point. So, thank you.

7 THE COURT: Very good. And everyone's objections  
8 are preserved.

9 Let's -- for Dr. Stephenson's purpose, let's go  
10 ahead. I do think the discussion was useful as guidance  
11 to the questioning that other people may do.

12 And moreover, I suspect that you were right to  
13 begin with, Ms. Hancock, that Mr. Rosenbaum probably got  
14 in everything through back-and-forth questions and answers  
15 that was in that document, so I don't think there's harm  
16 or foul either way on that. And I do think it --

17 This is a bad question to ask on the record, but I  
18 will right now. I mean, I'm not sure what happens to  
19 documents that are excluded. Do they go with the record  
20 to the --

21 MR. ENGLISH: That's my understanding, your Honor.  
22 They've always gone -- they're definitely the documents  
23 excluded, they are just not admitted, but they go along  
24 anyway.

25 THE COURT: It may be an automatic offer of proof  
26 anyway. I forget what the rules provide.

27 MR. HILL: Yeah, they get posted just like all the  
28 other exhibits.



1 THE COURT: Anyway, thank you, everyone. It helps  
2 me refine my thinking, and glad to have everyone's  
3 thoughts.

4 MR. ENGLISH: Your Honor, may I?

5 THE COURT: Yes, sir, your witness.

6 MR. ENGLISH: Chip English for the Milk Innovation  
7 Group.

8 CROSS-EXAMINATION

9 BY MR. ENGLISH:

10 Q. Dr. Stephenson, good morning. I actually was  
11 going to end with a question about Exhibit 179, but maybe  
12 to close the door, I'll start with it.

13 The exhibit in the last paragraph references a  
14 submitting data for the survey deadline of, in bold,  
15 April 14th, 2023.

16 A. Which document are you --

17 Q. This is Exhibit 179. This is the document we just  
18 spent 20-some minutes talking about, which is, you know,  
19 the e-mail purportedly from Mr. Allen back to Dr. Dykes.  
20 And there's a reference to the deadline for submitting  
21 data for the survey being April 14th, 2023, right? So  
22 orient ourselves.

23 Did that deadline end up being a hard deadline?

24 A. No. I moved the goal posts a few times because  
25 people requested that, could we please enter data within  
26 the next two weeks, and that happened a few different  
27 times.

28 Q. So going back quickly to a question asked by



1 Mr. Miltner. If you were asked about confidentiality for  
2 the 2023 study, you supplied, entities that requested, a  
3 non-disclosure agreement, correct?

4 A. Correct.

5 Q. Given the public nature of IDFA's request to you  
6 to update the 2019 study, or 2021 published, do you have  
7 any view as to whether people in the industry knew about  
8 your study and any facility could have participated if  
9 they wanted to?

10 A. I believe that most of the participants knew that  
11 the study was being updated -- or most of the previous  
12 participants knew that it was being updated, and would  
13 have been welcome to participate.

14 Q. What about other people who did not participate in  
15 the earlier study, would they likely have known based upon  
16 the invitation and the dairy industry's predilection to  
17 share information?

18 A. There certainly would have been opportunities for  
19 them to have understood and heard about that and  
20 participated. I don't know how broadly it was. I don't  
21 recall whether this was something that was picked up by  
22 popular press or not, as has happened certainly in the  
23 past.

24 Q. So at the time IDFA sent out this invitation in  
25 February, mid-February of this year, to your knowledge,  
26 was DFA a member of IDFA at that time?

27 A. I don't recall. I do remember hearing that they  
28 had pulled out from their support of the organization, but



1 I don't remember what the exact date and timeline was.

2 Q. But do you know for a fact that DFA did know about  
3 the study? Did you discuss it with them at all?

4 A. I had some discussion with people about the study.  
5 But, again, I don't recall if this was before or after  
6 this e-mail.

7 Q. So going to the survey and your report as to  
8 cheese, the plants that participated had relatively higher  
9 volumes.

10 What is the implication for smaller volume plants'  
11 ability to influence the study's results?

12 A. Well, their data would be included like any other  
13 plant's data in the study. I will say that as I'm  
14 reporting weighted average values on here, a plant that  
15 produces smaller volumes will have a smaller impact on the  
16 results than a larger volume plant would. That's just the  
17 math.

18 MR. ENGLISH: That's all I have. Thank you.

19 THE COURT: Further questions for Dr. Stephenson?

20 AMS.

21 CROSS-EXAMINATION

22 BY MS. TAYLOR

23 Q. Good morning.

24 A. Good morning, Ms. Taylor.

25 Q. Kind of hard to believe there's even still  
26 questions left to ask.

27 A. Hopefully there are still answers available.

28 Q. I hope so, too.



1 I want to start -- I'm going to try to do this in  
2 some semblance of a logical order. So let's start with  
3 Exhibit 158, which is your December 2021 study.

4 A. Okay.

5 Q. I'm going to ask some questions that might be a  
6 little repetitive, but I think for clarity of the record  
7 would be helpful.

8 On page 4 when you talk about your products  
9 targeted, you list cheddar cheese in 40-pound blocks,  
10 640-pound blocks, and 500-pound barrels.

11 And if I remember from your discussions with  
12 Mr. Miltner, costs for all those products were included,  
13 except for packaging costs for 640s?

14 A. That is correct.

15 Q. Okay. And you also --

16 A. And I didn't report packaging costs for barrels in  
17 here. I have those, but they are not reported in the  
18 table.

19 Q. Okay. So -- okay. Thank you for that  
20 clarification.

21 And then on the whey, you have costs in here for  
22 dry whey and WPCs, which you did collect, but the results  
23 only reflect dry whey plants.

24 A. Could you restate that? I didn't quite clearly  
25 hear it.

26 Q. Sure. For the whey category, you have in here you  
27 collected information -- or you targeted cost data on dry  
28 whey products and WPC products.



1 A. That's correct.

2 Q. But the results are only for dry whey showing --

3 A. That's the only thing that's reported.

4 Q. Okay. And that same characterization of the  
5 products and which costs are reported applies to both the  
6 '21 study and the 2023 study?

7 A. That's correct.

8 Q. Okay. On the top, in page 7, and you discuss your  
9 transformation factors, which I know long before this  
10 hearing was ever thought about we had some discussions of  
11 those with you when you were working on this survey.

12 But one question is, you -- well, first, you only  
13 used this transformation value on plants that could not  
14 directly allocate their costs; is that correct?

15 A. Yes. If we had plants that were able to directly  
16 allocate their costs, then those are the first things that  
17 I take.

18 If they can indirectly allocate their costs, so,  
19 for example, they have allocated the cost to cheese  
20 products, in large quotes here, that might have included  
21 cheddar cheese and other non-reportable NDS- --

22 Q. NDPSR?

23 A. That's it.

24 -- then I would have performed an allocation  
25 between cheese products, but it would have been restricted  
26 to cheese products even if other products were produced in  
27 the plant. So transformation values only occur when I'm  
28 trying to allocate costs.



1 Q. Can you talk about, if you can recollect, how  
2 often you actually had to employ this transformation  
3 value?

4 A. With some frequency. I mean, some plants will  
5 report occasionally, just kind of like a bottom line  
6 unallocated number for things, and at that point in time,  
7 the allocation has to take place across it.

8 Most plants will have some degree of allocation  
9 that they have actually done, but not complete. And I  
10 don't really expect that to happen. There are always  
11 going to be some costs that I need to allocate.

12 Q. Okay. And so would it be fair to say, maybe,  
13 like, general and administrative costs might -- you might  
14 use it that way, which were less, maybe have a -- there's  
15 less ability to allocate between products?

16 A. I do have -- if you remember in that last input  
17 screen of the general ledger, that there are at least  
18 product categories, such as cheese or powders or butter,  
19 where you can provide some degree of disaggregation of  
20 your costs. I would say the majority of plants don't.  
21 They will simply provide me unallocated costs on that  
22 ledger page, but there are more than a few plants,  
23 probably 40% or something like that, a rough estimate on  
24 my part, that make some degree of allocation across their  
25 product categories.

26 Q. Thank you.

27 I want to turn to the results which start on  
28 page 11, and this is for nonfat dry milk. And what I took





1 from your conversation earlier to -- well, first let me  
2 ask this. You discussed how the 2023 results were more  
3 bimodal distribution and less of a normal distribution on  
4 the bell curve; is that correct?

5 A. Correct. And I had some of that same evidence for  
6 the 2021 study.

7 Q. Okay.

8 A. And that comment was primarily made going back to  
9 the earlier 2006 and '07 studies.

10 Q. Okay. So you saw the similarities between '21 and  
11 '23?

12 A. Similarity, but differences.

13 Q. Okay. And so for your low cost and your high cost  
14 divisions, if I'm looking at an N of 27, am I going to  
15 always assume that the division is around 50%, or could it  
16 be that -- oh, I guess that's my first question.

17 A. Yeah. I mean, I wouldn't have had 20 and 7, for  
18 example, in a division here. It would have been 13 and  
19 14. But where that additional plant falls, you know,  
20 between the low cost or high cost, I would look to see  
21 whether their price value has a natural break that is more  
22 closely aligned with low cost plants or high cost plants.

23 Q. So you didn't observe where, because of the way  
24 it's distributed here, that you had an uneven break?  
25 Like, say, 15 happened to be around one end, and 12 around  
26 the other end, and so the natural break was between 15 and  
27 12 instead of between 15 and 14, if that adds up right?

28 A. No. When I start to do something like that, there



1 are some statistical measures that might have been used to  
2 look for natural breaks. But I didn't do that because  
3 that, to me, began to feel a little bit more like I was  
4 trying to impose my idea of what should be reported as  
5 data or difficult to explain to others. So I tried to  
6 break always at near the 50% --

7 Q. Okay. Thank you.

8 A. -- in terms of number of plants.

9 Q. Okay. And then so if we're looking at the low  
10 cost product pounds, that is the weighted average of the  
11 number of plants that fall in that low cost category.

12 A. Correct.

13 Q. And then the same thing for the high cost. And  
14 then the all plant product pounds is the weighted average  
15 of all the plants together, or is that the average of the  
16 two numbers?

17 A. Yeah, it's actually not the weighted average, it's  
18 the average. Because it's all of the other values that  
19 are weighted by those product pounds that are weighted  
20 average values.

21 Q. Okay. And I wanted to turn to page 14 of this  
22 exhibit for dry whey. Under the high cost plants -- and I  
23 don't know if this is a typo -- it has a general and  
24 administrative cost of zero, but you still have an average  
25 of .0015, so I'm just wondering what the missing number  
26 is.

27 A. Yeah. This was a case where, you know, sample,  
28 again, imposed itself, and there were not very many



1 plants, there were four operations that would have been in  
2 that high cost. And this was a case, I do recall, where  
3 actually if I carried that out to five or six decimal  
4 points, there would have been a value there. But we had  
5 many plants for the general and administrative numbers  
6 where those were not supplied or broken out.

7 Recall, those are not all of those general ledger  
8 numbers, they are specific data values from that ledger  
9 page and from the labor page.

10 Q. Okay.

11 A. An example for that would have been clerical  
12 values, it would have been the plant superintendent  
13 values, and we may have had plants here that did not  
14 report separate superintendent or plant manager values.

15 Q. So there are instances in the data where they  
16 could have reported labor, utilities, other -- some of the  
17 cost breakouts, but not all?

18 A. Yes.

19 Q. And if you did that, if they did that, they left  
20 some cost categories blank, you didn't remove them from  
21 the survey altogether?

22 A. No. I didn't remove them altogether. And there  
23 are a few plants that don't report some of those values on  
24 there that where -- let me give you a good example of  
25 that.

26 On the return to investment category that's here,  
27 if we had one plant out of the four that might have fallen  
28 into one of these categories, it simply said, I can't come



1 up with a market value of my plant assets. And that did  
2 happen. Then, when I'm calculating this as a weighted  
3 return value, that's not a zero value for those assets,  
4 it's a non-number value, so it's excluded. It would be  
5 weighted by the three observations that we have there.

6 Q. Okay. So then same thing for general  
7 administrative --

8 A. Yes.

9 Q. -- it's just not in the -- it's not in the  
10 equation at all?

11 A. Exactly.

12 Q. Yeah. Okay.

13 For the plants for both '21 and '23 studies, I  
14 think in your description you talk about how they  
15 represent kind of, like, geogra- -- their -- word this in  
16 a way that makes sense -- they are representative of the  
17 geography of the entire United States, so they are all  
18 over?

19 A. We had plants that were all over. I wasn't  
20 targeting that like I have done in previous studies, but  
21 we had representation from all parts of the country.  
22 Southeast is a place where we didn't have any  
23 observations.

24 Q. Okay. Excluding the Southeast part of the  
25 country, were there any other parts of the country that  
26 might have been overrepresented or underrepresented in  
27 the --

28 A. No. Actually, not. We had plants from all



1 portions of the country. And I'll -- I guess you could  
2 define regions into smaller and smaller geographies, but  
3 for what I would consider major regions like Northeast,  
4 Middle Atlantic, Upper Midwest, far West, Southwest, we  
5 had representative plants in all of those areas.

6 Q. Okay. I have questions on like four different  
7 documents, so --

8 A. Okay.

9 Q. -- I'm trying not to go all over the place.

10 So for the data that you collected, I think most  
11 of it was for -- occurred in 2022; is that correct? They  
12 didn't have to do calendar year, they could have done  
13 fiscal year, but --

14 A. They could have. I don't recall specifically. It  
15 was only either one or maybe two plants that did something  
16 different than calendar year 2022 data.

17 Q. Okay.

18 A. And those fiscal years tended to be pretty close  
19 to calendar year '22.

20 Q. Okay. I just want to make sure that the record is  
21 clear because -- let's turn to -- let me -- I'm on your  
22 statement, which is Exhibit 176, on page 5.

23 A. Okay.

24 Q. And you have in the table the 2008  
25 Make Allowances, which are current levels, then your  
26 results of the three surveys that you have done, and the  
27 percentage changes are of '19 or '22, changed from 2006.

28 But I want to make sure it's clear that none of



1 your survey results included any type of marketing costs  
2 factor; is that correct?

3 A. No. There's no questions that are asked that  
4 would comprise what I might consider marketing or sales  
5 costs to be, and I do actually try to explicitly make sure  
6 that those aren't included.

7 Q. And do you know if there's a marketing cost factor  
8 included in the 2008 Make Allowance numbers that are  
9 currently adopted?

10 A. The 2008 numbers? I -- I don't know, as I have  
11 testified before, what had actually gone into the  
12 discussion about what -- what final numbers came out for  
13 Make Allowances.

14 I can tell you that the data that I had used back  
15 in that time period and reported on 2007, I guess, did not  
16 include marketing costs.

17 Q. Okay. So I'll ask a question of my lovely  
18 technical people next to me. I did one set of math and it  
19 worked, and then the other set apparently doesn't work.

20 The way they are looking at the -- the percentage  
21 change you have listed between '06 and 2019, that column,  
22 I think the way they have calculated it, it looks like you  
23 actually did the percentage change over the current  
24 Make Allowance, which is the first column.

25 But you did intend for it to be a change from the  
26 2006 if we wanted to redo that math?

27 A. That was my intention was to compare it to my  
28 results, not the Make Allowance results.



1 Q. Okay. Thank you.

2 A. So if I did the wrong thing, apologies.

3 Q. We're just here to make sure we are all clear on  
4 what we wanted to do.

5 Let's see. On the next page, for observations,  
6 where you kind of give a general summary of what you saw,  
7 and I want to summarize and make sure I have got this  
8 right.

9 So for nonfat dry milk between 2019 and 2022, you  
10 had less plants reporting, but they were bigger plants  
11 that did report?

12 A. Correct.

13 Q. And -- and would you say -- as I'm looking at the  
14 numbers between your '21 study and your '23 study, they  
15 actually declined a little bit. In '21 you reported  
16 \$0.2933 cents, and in 2023 you've reported \$0.2750.

17 So would you attribute that just to the larger  
18 volume?

19 A. As I have mentioned a few times, we oftentimes see  
20 lower costs in larger plants. But that's not an absolute  
21 categorization, that sometimes small plants are very cost  
22 competitive.

23 Q. Okay. I wanted to talk about the butter results.  
24 And I know you discussed this some, and I think I might --  
25 and I think I'm being duplicative, I apologize, because I  
26 missed half your answer when you were discussing it  
27 earlier.

28 But for the butter, you had generally the same



1 number of plants reporting, and it averages out to a  
2 similar volume, but you think the difference is just a --  
3 it was just basically a different set of plants that  
4 reported, a significantly different set of plants?

5 A. Yes, they were -- I mean, not a perfectly  
6 different set, there were some same plants. But they  
7 were -- in that -- in the two samples, really very  
8 different plants that were reporting this time around. So  
9 the volume was similar, the number of plants was similar,  
10 the results not similar.

11 Q. Okay. On your dry whey survey, between the two, I  
12 think you had a similar number of plants, but the volumes  
13 reported were increasing, suggesting larger plants.

14 But if you look at the numbers between the  
15 surveys -- so that's kind of similar to -- well, the  
16 volume piece is similar to the nonfat dry milk, but we saw  
17 costs increase from '21 to '23. Just wondering if you had  
18 an idea of why we saw the increases there.

19 A. I am not exactly sure. I can characterize some of  
20 those as being what we would think of as just the  
21 operating costs in a plant, that labor had certainly gone  
22 up, and that would have been true across all these plants,  
23 not just whey. But we also had different plant sets here,  
24 so they weren't the same whey plants, much like I reported  
25 in others, and why I made kind of a point of saying the  
26 sample matters.

27 Q. Okay. I'll turn to your Exhibit 178, your 2023  
28 study. I don't know if you had heard earlier witnesses --





1 I think it was this week, I can't remember -- they talked  
2 a lot about how insurance costs increased, and I just want  
3 to be clear on where those costs might show up in the  
4 reported costs.

5 Would those be under general administrative costs?

6 A. Yes.

7 Q. On page 10 of this exhibit, 10 of 30, under  
8 observations, and for each of these you go through, each  
9 paragraph discusses a different commodity, and you talk  
10 about the non-transformed weighted average values for the  
11 '21 and -- for the 2021 study.

12 So I take it you went back to the 2021 study and  
13 did the allocation the old way on a solids basis; is that  
14 correct?

15 A. I did. And I was curious about taking a look at  
16 just seeing while impactful that that may have been, in  
17 most cases not as much as you might expect but -- or hope  
18 for perhaps. In other words, it didn't explain the low  
19 cost of butter processing.

20 Q. Yeah. So --

21 A. It wasn't that butter was undervalued and nonfat  
22 overvalued. It -- I mean, to some extent that would have  
23 been true. But this was more of a sample problem than it  
24 was a weighting problem.

25 Q. Okay. I appreciate that. I was going to ask  
26 about it. I wrote down what the numbers were using the  
27 first transformation number, and then what the numbers are  
28 using the old way on the solids basis, and actually, all



1 of those costs declined.

2 A. Yeah. Again, sample.

3 Q. Okay. Okay. If we could turn to page 13.

4 So we took a look at the pounds reported in your  
5 study here, multiplied it by the N of the relevant  
6 commodity, to come up with a total pounds surveyed, and  
7 then compared that to our NDPSR volumes.

8 And for butter especially, that number was  
9 considerably higher than what we actually capture in  
10 NDPSR, like eightfold. I'm just wondering if you might  
11 know why that is? Are you capturing unsalted butter,  
12 perhaps? Or it's bulk butter that isn't reportable to  
13 NDPSR because eventually it goes into retail packaging?  
14 Just kind of curious why there's such a large difference  
15 there.

16 A. Yes. There are some of both things that you just  
17 mentioned. There's some unsalted butter in here, and that  
18 would have been a cost that was not included in the  
19 ingredients cost, pretty small cost in the overall scheme  
20 of things. But there were certainly many of these plants  
21 that also produced consumer packages. Those aren't  
22 included in here.

23 But up through the churn, processing costs are  
24 pretty similar for the products that are going into  
25 consumer packages. It's just additional labor in the  
26 packaging room and other things that would not have been  
27 included here.

28 Q. So labor is not included either?



1           A.    No.  If we can sort -- if we can sort that out,  
2   you know, then there is -- in the screenshots you can see  
3   that there are -- well, I don't know if I have butter on  
4   here or not.  I think so, though.  Yeah.  Well, there's  
5   butter processing, and then there's butter packaging --  
6   and I may have to own that one, too, that there's a  
7   possibility that there could have been some of the labor  
8   that would have been involved in butter packaging for  
9   consumer products, that that could have gotten in there.  
10  The packaging costs themselves would not have gotten in  
11  there, but bulk packaging and consumer packaging labor may  
12  have been commingled.

13          Q.    And that would be the same in the 2021 --

14          A.    It would be the same in both.

15          Q.    Yes, you could say the same in 2021?

16          A.    Yes, both.

17                MS. TAYLOR:  I think Mr. Wilson has a few  
18  questions.

19                                CROSS-EXAMINATION

20  BY MR. WILSON:

21          Q.    Todd Wilson, USDA.  Hello, Dr. Stephenson.

22                The -- just so that I can kind of get my head how  
23  you break the low versus high.  So you're doing that on  
24  total dollar cost as a midpoint median?

25          A.    Yes.  So when we look at the total cost for  
26  individual plants, all the plant observations are ranked  
27  from low to high.  And, again, if there's an even number  
28  of plants in there, then it would be the 50% low, 50%



1 high. If it's an odd number of plants, then that one  
2 plant is going to be assigned to one or the other.

3 Q. And it would be all costs that you have listed in  
4 this -- in these tables?

5 A. The break is made based on total costs. I mean,  
6 that's the calculation and ranking that I do. The rest of  
7 these carry from those individual plants.

8 Q. So the breaking would incorporate costs that are  
9 not necessarily in these weighted numbers because of  
10 consumer type packaging labor or whatever?

11 A. If the laboring -- labor costs got commingled in  
12 here, then it would be included for all of those plants.  
13 But, no, I -- I don't include --

14 Q. Okay. It's not the total -- excuse me -- it's not  
15 the total plant cost, it's the costs that are associated  
16 with --

17 A. With the product of interest, the one that's  
18 reported here. That's correct.

19 Q. Okay. Thank you. I just wanted to try to be  
20 clear.

21 In reference to the 15 plants that are overlapped.  
22 Okay? Some of those were in different -- in all products.  
23 Okay? Were there -- were there times, did you notice,  
24 were there times when plants might flip from a high to a  
25 low between '21 and '23, or do you know?

26 A. I didn't look for that, so I -- I can't really  
27 comment at all about it, I guess. I could look back in  
28 data when I'm at home and see whether that was the case,



1 but I can't really comment here.

2 Q. Okay. I'm going to switch over -- or switch back  
3 to whey, page 15.

4 I was just comparing some values across all  
5 products, and I thought this of interest, and I wanted  
6 maybe your opinion of why it might be.

7 So when we look at general and administrative on  
8 the '21 study, it was the lowest of all the products,  
9 butter, powder, cheese, whey. But in '23, it was the  
10 highest. Just interesting that G&A would be that  
11 divergent between those two population groups.

12 A. We did have, as I said, different plants in the  
13 two samples. And for the G&A in particular, there were a  
14 few plants in the whey category where we had  
15 non-reporting, like, of superintendent salary values and,  
16 you know, a couple of things of that nature, which gave a  
17 very low G&A in the earlier study.

18 In this one, different plants reported  
19 differently. So, again, when I come down to saying that  
20 having the authority to compel participation and to audit  
21 data like that, that I think these would be numbers that  
22 you would want to assure were included.

23 MR. WILSON: Thank you.

24 MS. TAYLOR: I think I'm more organized now.

25 CROSS-EXAMINATION

26 BY MS. TAYLOR:

27 Q. We have heard throughout this hearing about  
28 different investments, capital investments that plants



1 have made. And I'm wondering if you could elaborate or  
2 inform us on how that might -- how that's accounted for in  
3 these numbers. We have heard about investments in things  
4 like implementing UF at the start of a production process,  
5 and we have also heard about capital investments such as  
6 wastewater treatment investments.

7 So are those accounted for in these numbers, or  
8 are some accounted for and not others accounted for?

9 A. Well, to the extent that it impacts the production  
10 process and are costs that would be asked for and, thus,  
11 captured in here, they are accounted for. So just as a  
12 good example, water and waste treatment is a line item in  
13 that ledger category that's there. So the attempt is  
14 certainly made to capture some of those kinds of things.

15 UF in a plant or RO in a plant in front of the  
16 vats would be capital equipment that would be purchased,  
17 and at some point in time depreciated, and otherwise noted  
18 in there. Hopefully, it's providing greater throughput  
19 for plants, and so, you know, we -- we may see -- I would  
20 assume that the investment was made to lower total overall  
21 costs in the plant, and that those would be reflected in  
22 the total numbers.

23 Q. Okay. And then I want to use an example of a  
24 plant that has a cheese and a whey side. And say on their  
25 whey side they did 20% dry whey, which would be  
26 reportable, and 80% some type of value-added whey.

27 Are you -- are we at all perhaps capturing some of  
28 that cost to the value-added side in here, or you were



1 able to desegregate those?

2 A. To the fullest extent possible, we try to  
3 disaggregate them. And, again, that's going to be based  
4 on the pounds of solids in those two finished products.  
5 And we are not going to get a complete allocation, I  
6 guess, for that, because some of this is going through a  
7 very similar stream in here. But we would have less of  
8 some of the pounds of product in the value-added process  
9 than we would have in the dry whey product, and the  
10 allocation would be a bit different.

11 Q. Okay.

12 A. But, again, up to the point that we are actually  
13 capturing the whey from the cheese making process, then  
14 that's the place where the differences begin to express  
15 themselves.

16 Q. So another difference I wanted to clear up for the  
17 record is in your '06 survey you had a category of  
18 repairs -- repairs and depreciation in ingredients. You  
19 don't have that same category heading in your 2021 or '23  
20 surveys.

21 So would that all fall under what is now called  
22 nonlabor and utilities processing if we wanted to compare?

23 A. Yes. I think that CDFA towards end of their time  
24 period, and maybe you will have the opportunity to look at  
25 those more closely, changed the way that they reported  
26 things. So I had looked to see what they were including  
27 in their different titles. I'm not sure why they changed  
28 that, but they had done it. And as I mentioned earlier in



1 testimony, I had tried in the past to report the same way  
2 CDFA did so people could have a -- look at an audited set  
3 of data for at least a subset of plants, and then what was  
4 done here in a more national level.

5 Q. Okay. So you have answered some other questions  
6 from other parties about costs and whether 2022 -- I'm  
7 generalizing here -- was a good year to use for cost data  
8 because of supply chain disruptions and inflation,  
9 etcetera. And I know you answered that question. All  
10 costs go up or down, and I understand that.

11 But as you were looking through the data, did --  
12 the monthly data that was given to you -- did you see that  
13 those costs were moderating at all at the end of the year?

14 A. I didn't -- I don't recall noticing anything that  
15 really jumped out at me. And there are only a few places  
16 where I'm actually capturing monthly costs, that's true in  
17 utilities, and I don't recall that, you know, I noticed  
18 the utilities changed very much over the course of a year  
19 for any particular plant or buyer.

20 Q. Okay. So I have one more question, and I'll see  
21 if you take the opportunity to answer it or not.

22 A. All right.

23 Q. Since we have this opportunity to talk to you, and  
24 you certainly are an expert in this cost data that you  
25 have been collecting for years, and we have to go back at  
26 USDA and take this lovely record and help the Secretary  
27 determine what he finds is appropriate based on the  
28 record.





1           And I was wondering if you had any offerings,  
2 based on your experience, how we could use the cost data  
3 to make a decision on minimum-regulated prices, given that  
4 we're kind of working off of averages of various surveys  
5 that you have done. So I didn't know if you wanted to  
6 take this opportunity to offer your thoughts on that or  
7 not.

8           A. I have tried to provide data and information for  
9 folks to use in making determinations of exactly what you  
10 are talking about, and it seems to me that it edges into  
11 policy decisions.

12           If you were to ask me what would you do, I'm not  
13 sure that I feel like I should be making those kinds of  
14 decisions for you. This is an industry where you need to  
15 put on the blindfold and hold up the scales of justice and  
16 come out with something that is going to be good for the  
17 industry.

18           Q. So you are deferring on that advice is what I'm  
19 gathering.

20           A. I could have shortened it, and said, yeah, no  
21 comment.

22           Q. So noted.

23           MS. TAYLOR: I think that's it from AMS. Thank  
24 you.

25           THE WITNESS: Okay.

26           THE COURT: Mr. Rosenbaum?

27                                   REDIRECT EXAMINATION

28           BY MR. ROSENBAUM:



1 Q. Just a couple points of clarification.

2 In your testimony, which is Hearing Exhibit 176,  
3 you have a Table 1 on page 5 of 7, which AMS asked some  
4 questions about. And -- and I think AMS, in doing their  
5 calculations, suggested that the column that says '06/'19  
6 percentage change, actually is a comparison between the  
7 2008 Make Allowances and the 2019 results.

8 Do you remember that colloquy you had?

9 A. I do.

10 Q. And I think your testimony was, if that's the  
11 case, that was not your intent. You had intended the  
12 calculation to be a comparison between the 2006 results  
13 and the 2019 results, correct?

14 A. Yes. That was what my intention was. I should  
15 probably check that and see if I had actually done it or  
16 not.

17 Q. I'm going to -- let me say, I'm going to suggest  
18 to you that the numbers in the June 2022 percentage change  
19 is, in fact, what I believe you intended, namely a  
20 comparison between the 2006 results and the 2022 results.  
21 In other words, I think you did that column the way you  
22 intended.

23 A. Okay.

24 Q. But maybe you could just double-check both those  
25 things just so we're sure that the record is clean on  
26 this.

27 We have doubled-checked the 2022 numbers and --  
28 (Court Reporter clarification.)



1 BY MR. ROSENBAUM:

2 Q. We double-checked the June '22 numbers and the  
3 percentages, as we calculated them last night, were, in  
4 fact, a comparison of the 2006 results and the -- and the  
5 2022 results.

6 A. I just grabbed the wrong column, mentally --  
7 Yeah. I -- the percent change on the '06 to '19  
8 is actually a comparison with the Make Allowance column.

9 Q. Okay. And to come up with the correct number for  
10 cheese, for example, that should be in place of the 24%,  
11 the math is simply -- correct me if I'm wrong -- the  
12 correct math would be  $\$0.247$  minus  $\$0.158$  divided by  
13  $\$0.158$ ?

14 A. Yes.

15 Q. And so -- and similarly for whey, it should be  
16  $\$0.265$  minus  $\$0.197$  divided by  $\$0.197$ ?

17 A. Yes.

18 Q. And just to complete it, butter should be  $\$0.141$   
19 minus -- well, minus  $\$0.18$  divided by  $\$0.18$ , right?

20 A. Yes.

21 Q. And nonfat dry milk, to close it off, would be  
22  $\$0.293$  minus  $\$0.166$  divided by  $\$0.166$ , correct?

23 A. Yes.

24 Q. And the numbers in two thousand -- in the column  
25 2019, those reflect your use of the transformational  
26 adjustments; is that correct?

27 A. Yes.

28 Q. Okay. Which I think you said affect butter and



1 nonfat dry milk in opposite directions. Am I right about  
2 that? The employment of transformational techniques.

3 A. Yes. I also indicated that the bigger difference  
4 in these numbers had more to do with sample than it did  
5 the weighting.

6 Q. All right. And have you been able to confirm for  
7 me that the numbers in the column -- the percentage  
8 numbers in the column June 2022 do reflect what you  
9 intended, namely the 2022 results minus the 2006 results  
10 divided by the 2006 results?

11 A. Yes. They do.

12 Q. And one thing that just leaps out at me is it's  
13 actually a rather consistent number in terms of what the  
14 percentage increase was from 2006 to 2022, among the four  
15 different components on a percentage basis, correct?

16 A. It is. And I was a little surprised, I guess,  
17 that it was that close, but I -- that gives me some degree  
18 of comfort that maybe those samples were, you know,  
19 reasonable in those two years as well.

20 Q. I mean, presumably the labor costs, electrical  
21 costs, general inflation, would be factors faced, more or  
22 less, equally regardless of what kind of commodity you are  
23 making. Is that reasonable?

24 A. Yes. But there are a lot of things that I know --  
25 when you start to look at the individual plant data, one  
26 of them is just how different things like utility rates  
27 can be from one plant to the next. And I don't mean by a  
28 small amount. I mean, they are substantially different.



1 So clearly folks are able to secure different costs just  
2 based on that. And over time, it's not really fair  
3 necessarily to say these should all track, too, because we  
4 have had investments that provide some energy recapture in  
5 the plants, and not all plants have invested in that to  
6 the same degree, so I mean factor usage is a little  
7 different.

8 Q. Let me just ask a question relating to AMS's  
9 questions about poundage. And if we could turn to page 13  
10 of 30 just as an example, which I think was the one that  
11 AMS was asking about.

12 A. On which exhibit?

13 Q. It is on Exhibit 178. I'm sorry. I'm turning now  
14 to your June 2023 report.

15 A. Page 13?

16 Q. 13, yes.

17 And so you show the -- there's a row that says N  
18 equals, and in this case it's 13. That's how many plants  
19 reported costs for butter, correct?

20 A. That's correct.

21 Q. And every one of the commodities has an N on the  
22 sheet that relates to it that provides how many plants  
23 participated, correct?

24 A. Correct.

25 Q. And so if you multiply 13 times, in this case,  
26 butter, 126,906,009 product pounds, does multiplying 13  
27 against that number tell you the total poundage that was  
28 covered by the plants covered in the survey?



1 A. Correct.

2 Q. And if you wanted to determine what percentage of  
3 total butter production in the United States that  
4 represents, would you divide whatever number results from  
5 multiplying 13 times 126,906,009, would you take that  
6 number, divide it by the NASS survey of total butter  
7 production in the United States for that year?

8 A. That would give you a percentage of reported  
9 butter to NASS, yes.

10 Q. Okay. And would -- and reported to NASS should be  
11 butter production in the United States, correct? I mean,  
12 that's what that is a survey of it?

13 A. I'm not aware of them not tracking some plants or  
14 reporting some plants for reasons. But, yeah, I would  
15 think the U.S. total should be pretty much the total.

16 Q. So the 13 times 126,906,009 divided by the NASS  
17 number would tell you what percentage of butter you are  
18 survey picks up, correct?

19 A. Yes.

20 Q. And if that number is -- do the math, we'll have  
21 someone do the math, testify to it -- 85% or some other  
22 number similarly, you really not -- your sample at that  
23 point is --

24 A. It is pretty good.

25 Q. -- it is like very good, isn't it?

26 A. Yeah. It's nearly a census. I mean, there would  
27 be probably many plants that didn't participate in this  
28 that are going to be very small operations or quite small



1 operations in comparison to these large plants that  
2 participated this time around. Yeah. So there may be a  
3 fair number of those small plants, but they didn't  
4 comprise much volume.

5 MR. ROSENBAUM: That's all I have. Thank you.

6 MS. TAYLOR: I'd like to ask another question if  
7 we may.

8 THE COURT: No objection?

9 MS. TAYLOR: Sorry.

10 RE-CROSS-EXAMINATION

11 BY MS. TAYLOR:

12 Q. We only get this one opportunity to make sure we  
13 understand all these numbers, Dr. Stephenson, so -- I'll  
14 just keep to the same page because I assume it's the same.  
15 And I just want to make sure -- I thought we were clear,  
16 but then we confused ourselves.

17 So the low class product pounds is the weighted  
18 average of all the plants that fall in that category?

19 A. It's the average of all the plants in that  
20 category.

21 Q. Yes. Okay.

22 And then the factors break -- cost breakouts in  
23 that category are the weighted average?

24 A. Yes.

25 Q. Okay. Same for the high cost plants?

26 A. Yes.

27 Q. And so for all plants, is that a simple average or  
28 is that a weighted average of 126 million?



1 A. It's a weighted av- -- well, that is a simple  
2 average as well, I mean, for the total pounds of product.

3 Q. Okay. Of the 13 plants?

4 A. Yes.

5 Q. Yeah. Okay.

6 And then the cost factors on that line?

7 A. Those are also weighted average cost values.

8 Q. Of all 13 plants?

9 A. Yes.

10 Q. Okay.

11 A. Was there a question?

12 Q. No, we just looked at your face and thought maybe  
13 you were thinking about your answer again.

14 A. No, no, no. I -- no. No, I -- I stand by my  
15 answer. Yes.

16 RE CROSS-EXAMINATION

17 BY MR. WILSON:

18 Q. Could I ask a question maybe to clarify it in my  
19 head.

20 The all plants row --

21 A. Yes.

22 Q. -- is the sum of all the costs divided by all the  
23 pounds? Not the average of the pounds, but all the  
24 pounds?

25 A. This is the weighted average total costs. So, for  
26 example, if you added up those weighted averages across  
27 each of the categories, you should get the total cost. If  
28 you added up all of the total costs of individual plants





1 and divided by the total pounds, you should get the same  
2 number. So, I mean, it's two different ways of getting to  
3 that bottom right-hand corner.

4 MR. WILSON: Okay. Thank you.

5 THE WITNESS: You're welcome.

6 RECROSS-EXAMINATION

7 BY MS. TAYLOR:

8 Q. But for the example, because we were talking about  
9 it, the general and administrative costs, if the plant did  
10 not report those numbers --

11 A. Right.

12 Q. -- then that number in the all plants line is only  
13 for the pounds that were reported -- pounds where costs  
14 were reported?

15 A. For that category, that's correct.

16 Q. For that category?

17 A. Yes.

18 Q. Okay.

19 A. So in other words, it would provide an accurate  
20 representation of maybe 12 out of the 13 plants or  
21 something to that effect, but it wouldn't be distorted by  
22 being a zero value.

23 Q. Okay. We think we understand now.

24 A. Thank you.

25 MS. TAYLOR: Thank you.

26 THE COURT: Mr. Rosenbaum?

27 MR. ROSENBAUM: Your Honor, at this point I simply  
28 would like to move Exhibits 176, 177, and 178 into



1 evidence.

2 THE COURT: That's redirect, huh? Okay.

3 Any objections?

4 Exhibits 176, 177, 178 are made a part of the  
5 evidentiary record in this hearing.

6 (Thereafter, Exhibit Numbers 176, 177, and  
7 178 were received into evidence.)

8 THE COURT: With that, should be break for lunch?

9 MR. ROSENBAUM: Yes, your Honor.

10 Let me just say, our next witness after lunch is  
11 going to be Dr. Schiek, and we are actually introducing a  
12 number of documents into the record through him. And I  
13 will put at the back, I'm going to put boxes -- not for  
14 USDA, they get their own set -- but for anyone else who  
15 wants a copy, just please take one each. It's going to be  
16 IDFA Exhibits 2, 7 through 21, and 40. So you should have  
17 one of each of those.

18 THE COURT: Can you gather up copies for me?

19 MR. ROSENBAUM: Yes, of course, your Honor.

20 THE COURT: Is there any controversy about that?

21 Ms. Hancock, you rose.

22 MS. HANCOCK: No, I'm just going to lunch.

23 THE COURT: All right. Let's go to lunch. Come  
24 back at 1:05.

25 (Whereupon, a luncheon break was taken.)

26 ---o0o---

27

28



1 WEDNESDAY, SEPTEMBER 13, 2023 - - AFTERNOON SESSION

2 THE COURT: Another witness, Mr. Rosenbaum.

3 MR. ROSENBAUM: Your Honor, we call as the next  
4 witness, Dr. William Schiek.

5 DR. WILLIAM SCHIEK

6 Being first duly sworn, was examined and  
7 testified as follows:

8 THE COURT: Your witness.

9 DIRECT EXAMINATION

10 BY MR. ROSENBAUM:

11 Q. Dr. Schiek, you have prepared written testimony  
12 today which has been marked IDFA Exhibit 2; is that  
13 correct?

14 A. Correct.

15 MR. ROSENBAUM: Your Honor, I would ask that this  
16 be given the next Hearing Exhibit number.

17 THE COURT: Yes. 180.

18 (Thereafter, Exhibit Number 180 was marked  
19 for identification.)

20 MR. ROSENBAUM: And then, your Honor, we have a  
21 series of reports by the California Department of Food and  
22 Agriculture, which we would like to have marked seriatim.

23 And so the next one is IDFA Exhibit 7, which we  
24 would ask to be marked as Exhibit 181.

25 THE COURT: Yes. IDFA Exhibit 7 is marked for  
26 identification as 181.

27 (Thereafter, Exhibit Number 181 was marked  
28 for identification.)



1 MR. ROSENBAUM: And then IDFA Exhibit 8 would be  
2 182, Hearing Exhibit 182.

3 THE COURT: And that is an 8 on there. Yes. 182  
4 is so marked.

5 (Thereafter, Exhibit Number 182 was marked  
6 for identification.)

7 MR. ROSENBAUM: IDFA Exhibit 8 -- 9, excuse me,  
8 would be Hearing Exhibit 183.

9 THE COURT: Yes, so marked.

10 (Thereafter, Exhibit Number 183 was marked  
11 for identification.)

12 MR. ROSENBAUM: IDFA Exhibit 10 is Hearing  
13 Exhibit 184.

14 THE COURT: Yes. So marked.

15 (Thereafter, Exhibit Number 184 was marked  
16 for identification.)

17 MR. ROSENBAUM: IDFA Exhibit 11 is Exhibit 185.

18 THE COURT: So marked.

19 (Thereafter, Exhibit Number 185 was marked  
20 for identification.)

21 MR. ROSENBAUM: IDFA-12 is Hearing Exhibit 186.

22 THE COURT: So marked.

23 (Thereafter, Exhibit Number 186 was marked  
24 for identification.)

25 MR. ROSENBAUM: IDFA-13 is Hearing Exhibit 187.

26 THE COURT: So marked.

27 (Thereafter, Exhibit Number 187 was marked  
28 for identification.)



1 MR. ROSENBAUM: IDFA Exhibit 14 is Hearing  
2 Exhibit 188.

3 THE COURT: So marked.

4 (Thereafter, Exhibit Number 188 was marked  
5 for identification.)

6 MR. ROSENBAUM: Hearing Exhibit 15 is -- sorry,  
7 IDFA Exhibit 15 would be Hearing Exhibit 189.

8 THE COURT: So marked.

9 (Thereafter, Exhibit Number 189 was marked  
10 for identification.)

11 MR. ROSENBAUM: IDFA Exhibit 16 will be Hearing  
12 Exhibit 190.

13 THE COURT: So marked.

14 (Thereafter, Exhibit Number 190 was marked  
15 for identification.)

16 MR. ROSENBAUM: Exhibit 17 will be Hearing Exhibit  
17 191.

18 THE COURT: So marked.

19 (Thereafter, Exhibit Number 191 was marked  
20 for identification.)

21 MR. ROSENBAUM: Hearing Exhibit 18 will be hearing  
22 Exhibit 192.

23 THE COURT: So marked.

24 (Thereafter, Exhibit Number 192 was marked  
25 for identification.)

26 MR. ROSENBAUM: IDFA Exhibit 19 will be Hearing  
27 Exhibit 193.

28 THE COURT: So marked.



1 (Thereafter, Exhibit Number 193 was marked  
2 for identification.)

3 MR. ROSENBAUM: And then IDFA Exhibit 20 would be  
4 marked Exhibit 194.

5 THE COURT: Oops -- so marked.

6 (Thereafter, Exhibit Number 194 was marked  
7 for identification.)

8 MR. ROSENBAUM: And although I distributed IDFA  
9 Exhibit 21, it turns out that actually is already in  
10 evidence as Hearing Exhibit 156, so I'm not asking that  
11 that be marked as a new exhibit. It's Hearing  
12 Exhibit 156. That actually was put in by National Milk,  
13 so it actually is NMPF-18A, but it's already in evidence  
14 so I'm not going to ask that be given a separate number.

15 THE COURT: Very good, sir.

16 MR. ROSENBAUM: And then, lastly, Dr. Schiek is  
17 about to go through a PowerPoint presentation, which has  
18 been marked as IDFA Exhibit 40, and so we would ask that  
19 that be marked as Hearing Exhibit 195.

20 THE COURT: So marked.

21 (Thereafter, Exhibit Number 195 was marked  
22 for identification.)

23 BY MR. ROSENBAUM:

24 Q. Dr. Schiek, why don't we go ahead and put up your  
25 PowerPoint presentation that you have put together, and  
26 start by telling us a little bit about yourself. You  
27 don't need to read this, but just tell us what your  
28 background is.



1           A.     Yeah. Well, I'm currently executive director of  
2     the Dairy Institute of California. Dairy Institute is a  
3     dairy processor trade association similar to IDFA. We  
4     engage in regulatory and legislative advocacy on behalf of  
5     our members. Our core members are folks who have plants  
6     in California, dairy plants in California, and buy milk in  
7     California.

8           Q.     And how long have you worked for the Dairy  
9     Institute of California and in what positions?

10          A.     So I have -- I started with Dairy Institute in  
11     1997, and was the economist. And back in those days we  
12     had a state regulatory pricing program, and it was my  
13     responsibility to help the members coalesce around policy  
14     positions that they wanted advanced at those hearings, and  
15     I was a principal witness testifying on behalf of the  
16     Institute.

17          Q.     Okay. And in those days, California was not part  
18     of the Federal Milk Marketing Order system; is that  
19     correct?

20          A.     Correct.

21          Q.     And then when did you become executive director of  
22     the Dairy Institute?

23          A.     I became executive director on January 2020  
24     following the retirement of my predecessor, who had been  
25     there since 1997, and in another capacity before that.  
26     And so since that time, I have been responsible for  
27     basically all the advocacy efforts of Dairy Institute.  
28     This would include legislative advocacy and other



1 regulatory arenas beside milk pricing and policy.

2 Q. And taking -- going back in time, what did you do  
3 before you started at the Dairy Institute?

4 A. So prior to joining Dairy Institute, I was an  
5 assistant professor in the Department of Agricultural  
6 Economics up the road here at Purdue University in West  
7 Lafayette, Indiana, and was there from August '91 until  
8 May -- through May '97.

9 Q. And prior to that?

10 A. Prior to that I was employed -- well, I was in  
11 graduate school, so that time at the University of  
12 Florida, but I was employed by the New York/New Jersey  
13 milk Market Administrator. I started there in June '82,  
14 when I had graduated from Cornell with my Bachelor's  
15 degree working as a cooperative relations specialist,  
16 which was basically a role of administering the  
17 cooperative payments provisions that were part of the  
18 Federal Order 2, New York/New Jersey Order at that time.

19 Later I trained my successor in that job, who I  
20 don't see in the room anymore, that was Ed Gallagher. And  
21 Ed took over that job, and I moved on to be just an  
22 economist in the office working on special projects and  
23 research projects.

24 And then he talked about, I think in his  
25 testimony, being one of the Wilson Fellows -- and we're  
26 not talking about Todd Wilson, we're talking about a  
27 different Wilson.

28 Although, Todd, if you want to give me money to go





1 to school, that will be good.

2 You know, I went to graduate school and did  
3 research in dairy marketing, and I was funded, in part, by  
4 the New York/New Jersey Milk Market Administrator office.

5 Q. And tell us what degrees you have.

6 A. So I have a Bachelor's degree in applied economics  
7 and business management, with a specialization in business  
8 management and marketing from Cornell University. That  
9 was in 1982. And then at the University of Florida, I  
10 have a Master's of Science and a Ph.D. from the Department  
11 of Food and Resource Economics, with a specialty in dairy  
12 marketing and policy.

13 Q. Okay.

14 MR. ROSENBAUM: Your Honor, I would ask at this  
15 point that Dr. Schiek be declared an expert in  
16 agricultural economics and food and resource economics.

17 THE COURT: Yes.

18 MR. ROSENBAUM: As well as applied economics.

19 THE COURT: I find him so qualified.

20 BY MR. ROSENBAUM:

21 Q. Dr. Schiek, at the time that the State of  
22 California had its own milk marketing regime, did the  
23 state conduct surveys of manufacturing costs for dairy?

24 A. Yes, they did.

25 Q. And were -- was participation in those surveys  
26 mandatory?

27 A. It was for the plants that they selected to be --  
28 participate in the survey. I assume those were plants



1 that met the product definition that they were interested  
2 in studying.

3 Q. And were the -- were those surveys subject to  
4 audit?

5 A. They were.

6 Q. Okay. And were they, in fact, audited?

7 A. They were.

8 Q. Now, we have marked a series of exhibits which  
9 have been numbered as exhibit -- Hearing Exhibits 181  
10 through 194. And then, as I mentioned, they is already a  
11 document that has been marked as Hearing Exhibit 156.

12 Are these official publications of the California  
13 Department of Food and Agriculture?

14 A. They are, yes.

15 Q. And are these the reports going from the period  
16 2002 through 2016, in which the California Department of  
17 Food and Agriculture was reporting the results of the cost  
18 surveys they had conducted?

19 A. They are.

20 Q. Okay. And -- and did California cease performing  
21 these audits after 2016?

22 A. That's correct. That was the last year they did.  
23 Once California joined the Federal Order system, the  
24 manufacturing cost unit was disbanded at CDFA, and they  
25 were not doing those studies anymore.

26 Q. Okay. If we could go back to the PowerPoint  
27 presentation, and to the next page, please. Tell us --  
28 tell us what it is you have undertaken for purposes of



1 this hearing.

2 A. Yeah. Basically, what we have tried to do here is  
3 to estimate dairy manufacturing costs from existing CDFA  
4 data and other economic data to project what costs would  
5 be in the more recent time periods since CDFA ceased  
6 publishing this information where they -- you know, we no  
7 longer have those audited cost numbers available.

8 CDFA collected manufacturing cost data from  
9 California plants for many years beginning in 1989. A lot  
10 of that earlier data was collected in a temporally  
11 inconsistent manner. I guess that's a way of saying they  
12 didn't do structured annual calendar year audits. They  
13 would often cover a period, sometimes as long as two  
14 years. Sometimes they -- one report to the next, they  
15 would be overlapping.

16 So in doing this analysis for econometrics, you  
17 want sort of discreet data, and so we selected the data  
18 for which there was annual reports covering a calendar  
19 year, so starting -- that started in 2002. And so that  
20 began doing audited reports on an annual basis, on a  
21 calendar year basis, beginning in 2002.

22 Current Federal Order Make Allowances were  
23 established, in part, using work from Dr. Stephenson that  
24 he did when he was at Cornell on manufacturing costs, as  
25 well as CDFA data from 2006. So I just note that there's  
26 a precedent for USDA using both survey data from  
27 Dr. Stephenson and CDFA cost data.

28 Q. And, in fact, the Make Allowances that we are



1 currently living under are, themselves, based at least, in  
2 part, on both CDFA data and Dr. Stephenson's then  
3 contemporaneous survey, correct?

4 A. That's correct.

5 Q. We go to the next slide, please --

6 A. Yep.

7 Q. -- the approach.

8 So I think -- just so we're clear about this, you  
9 were trying to take that CDFA audited data that takes us  
10 through 2016 and use it to project what you -- what costs  
11 would be as of what point in time?

12 A. Right, as of 2022. Basically we -- we have  
13 projections for each calendar year beyond the survey out  
14 through 2022.

15 Q. And tell us what the basic methodology was.

16 A. Yes. So basically we employed regression analysis  
17 using ordinary least squares. Ordinary least squares is a  
18 very commonly used type of regression analysis to fit  
19 essentially a linear relationship between some independent  
20 variables, things that we think will be impacting the  
21 dependent variable, which in this case is manufacturing  
22 cost. And so we're looking at variables that might --  
23 economic theory would suggest would have an impact on  
24 manufacturing costs, and those would be things like energy  
25 costs, labor costs, material costs, and we might also look  
26 at how productivity changes are also impacting those.

27 Q. Okay. And tell us how the use of this data  
28 captures productivity.



1           A.     So we explicitly included in the -- in the  
2     equation for labor cost and the equation for other costs,  
3     measures of productivity changes. One was a general  
4     productivity change in terms of labor, and the other was a  
5     total factor productivity change that captures more than  
6     just labor productivity gains for the food, tobacco, and  
7     manufacturing -- food and tobacco and beverage  
8     manufacturing industries.

9           Q.     And tell us how you dealt specifically with whey  
10    manufacturing costs.

11          A.     Yeah. Whey manufacturing costs presented a  
12    problem because CDFA did collect some data on dry whey,  
13    the cost of dry whey manufacturing. But that data is  
14    pretty limited, they collected it for a period of four  
15    years. And even that data, when it was collected, was  
16    collected from plants that were probably higher cost  
17    because of how they were operating. They weren't  
18    necessarily running full volumes all the time, and so they  
19    had very high costs during that period. And that data  
20    ceased when -- when the number of plants producing dry  
21    whey dropped below three in the state. So there's not  
22    enough of a time series to do a whey model on this with a  
23    regression analysis.

24                 So what we did, and this had been used in the  
25    past, is you try to come up with a number that represents  
26    the incremental drying cost of whey, which is a more  
27    dilute solution than skim milk, and so there would be a  
28    higher cost of drying whey than there would be, say,



1 drying nonfat milk powder.

2 And we just noted here, we don't have -- I didn't  
3 go out and estimate those costs of -- incremental costs,  
4 but we have a relationship between the current  
5 Make Allowance for nonfat dry milk and for dry whey, which  
6 is roughly \$0.03 a pound. It is a little more but --  
7 so -- so what we did was we looked at the projections of  
8 nonfat dry milk, the estimates of nonfat dry milk cost,  
9 and the projections going forward, and added \$0.03 to that  
10 as an estimate of the dry whey cost.

11 Q. Okay. And let's go to the next slide if we could.

12 And what -- what are we seeing here?

13 A. Yeah. This is just a table that lists the  
14 weighted average -- CDFA survey weighted average  
15 manufacturing cost for each of the commodities from 2002  
16 through 2016. So cheddar cheese is in the -- next to the  
17 year, cheddar cheese is in the next column. Then you see  
18 the four years for which there was dry whey data. And  
19 then weighted average butter manufacturing costs under the  
20 CDFA survey in the next column. And then finally, the  
21 weighted average cost manufacturing cost for nonfat dry  
22 milk.

23 Q. And are the figures that appear here on page 5,  
24 are those taken from the various CDFA reports that we have  
25 marked as exhibits?

26 A. Yes.

27 Q. And do they provide additional detail as to how  
28 many pounds were subject to the survey and things of that



1 nature?

2 A. Yeah, there's a lot more detail there.

3 Q. Okay. Let's go to the next page, please.

4 And tell us more about the approach you took.

5 A. Yeah. One of the things, even though we had  
6 annual cost data for 2002 through 2016, I wasn't able to  
7 locate the report for 2002 that has the extensive  
8 breakdown of cost data. Part of the reason is those are  
9 no longer up on the web by CDFA, so you -- you have to go  
10 back and find them via another source or an archive of the  
11 Internet. And so we don't have the breakdown on those  
12 costs for 2002. We have labor costs and we have total  
13 costs, but we don't have -- we don't have the breakdown of  
14 the way I have broken down the costs here in terms of  
15 utility cost and -- and other costs.

16 So we could only get the broken down data from  
17 2003 to 2016. So we estimated -- we looked at CDFA dairy  
18 manufacturing costs for utilities and other costs for  
19 butter, nonfat dry milk, and cheddar cheese for 2003 to  
20 2016.

21 For labor costs and to estimate trend models, we  
22 actually were able to use the full set, 2002 to 2016,  
23 because we had that extra year of data for those -- for  
24 those analyses.

25 One of the things that became clear as we started  
26 looking at the various variables that we -- independent  
27 variables that we think will be influencing costs, that  
28 economic theory suggests will be influencing costs, was



1 that some of them are highly correlated. And that creates  
2 a difficulty in estimation where you have got a lot of  
3 variables that -- a few variables that are moving in the  
4 same direction and are highly correlated with each other,  
5 and it makes it difficult to estimate the parameters  
6 associated with those variables that -- how they would  
7 impact cost.

8 So to deal with that we -- we estimated the model  
9 separately so you didn't have a lot of the correlated  
10 variables in the same model. So we estimated, as I said,  
11 utility costs, we estimated labor costs, we estimated all  
12 other costs. So that would be everything that -- not  
13 total -- everything that makes up total costs that's not  
14 either labor or utility costs. So three equations, and  
15 you can sum each component -- labor, utility, and other --  
16 to equal total cost.

17 Q. Okay. And if we can turn to the next page,  
18 page 7.

19 Does this provide some information about, you  
20 know, what -- what data you were including?

21 A. Yes. So in the utility cost equations we were  
22 looking primarily at energy -- industrial energy prices.  
23 So the data we used was from the U.S. Department of  
24 Energy, Energy Information Agency, and these were  
25 industrial rates for natural gas and for electricity that  
26 were used. And it depended on the commodity which ones we  
27 were using.

28 Q. That was in the state of California?





1           A.     In the state of California.  So these are  
2 California industrial energy prices.

3           Q.     And then what for labor?

4           A.     For labor we looked at another published series on  
5 California wage rates for non-supervisory manufacturing  
6 workers.  This was data that was collected by the U.S.  
7 Department of Labor, Bureau of Labor Statistics.  And that  
8 is our sort of proxy representation of plant -- plant  
9 labor costs.

10                  And we also used Bureau of Labor Statistics data  
11 for non-farm labor productivity, which was included to  
12 account for the impact of increasing productivity, and to  
13 basically separate that out.  I mean, we could have  
14 estimated that model without including it, and the labor  
15 productivity change would have been captured in the data.  
16 But to be able to kind of talk about it, if productivity  
17 growth outside of the model range, like as we start doing  
18 forecasts, if productivity growth was higher or lower,  
19 having it isolated, we can look at the impact of that as  
20 well.

21           Q.     Okay.  And then the next page, please, you mention  
22 the use of dummy variables.  Can you just briefly  
23 summarize the concept there?

24           A.     Yeah.  I just wanted to finish the last point on  
25 that page.

26           Q.     Sorry.

27           A.     That's okay.

28                  So the other cost category is a very broad



1 category of costs. It includes things like repairs and  
2 maintenance costs, depreciation, property taxes, plant  
3 supplies, packaging costs, ingredients. The return on  
4 investment allowance is in that number as well, as well as  
5 general and administrative costs.

6 So it would be difficult to kind of get indicators  
7 of drivers of all those individual costs separately, so  
8 what we did was we used the U.S. Producer Price Index for  
9 intermediate goods. Your factories, dairy manufacturing  
10 plants are buying inputs from all over the country, and  
11 essentially that is a measure of kind of inflation of  
12 costs, at that level, at the intermediate level, over  
13 time. We also included a productivity index that is a  
14 little different. It's not labor productivity. It is  
15 total factor productivity. So it looks at the  
16 productivity of not just labor but materials and energy  
17 and other things too.

18 Q. Okay. And let's go to the next page.

19 A. Yeah. So dummy variables, I know if you are not  
20 in the econometric world, this is a strange sounding name.  
21 But some of the changes can --

22 Q. Can you put --

23 A. Sorry.

24 Some of the changes in the -- in the cost numbers  
25 can't easily be explained by changes in those other  
26 variables that we have identified, like energy or labor  
27 cost or productivity changes.

28 And basically what you see in the data is you will



1 see a shift in the cost that isn't explained by these  
2 changes in the other variables, and when you examine the  
3 data, you recognize, okay, we have got -- something else  
4 is going on here. And in some cases those are things we  
5 know, just from knowledge of the industry. For example,  
6 if one the largest manufacturers in the state opens a new  
7 plant, for example, there's startup costs, and for -- for  
8 a period of time when that new plant opens, usually the  
9 first year, there will be much higher costs associated  
10 with that. So that would be a known event.

11 Something else that might be known is if -- if we  
12 knew somebody that -- you know, there was a big union --  
13 you know, unions represent workers in multiple plants, and  
14 there's a new labor contract that shifts labor costs up  
15 higher, we can account for that with one of these dummy  
16 variables. And the reason that we -- and there may be  
17 some shifts, sorry, that are -- that are unknown, but you  
18 can see it clearly in the data and you know it isn't  
19 related to one of the explanatory variables you have in  
20 your model. So you -- you can deal with that with a dummy  
21 variable and that kind of allows for that shift.

22 The reason you include these dummy variables is  
23 that it does two things: One, it better captures -- it  
24 helps you improve your explanatory power of costs, so  
25 if -- your independent variables and your model does a  
26 better job of explaining changes in cost when you include  
27 them.

28 The other reason is that it -- it leads to better



1 estimates, more accurate estimates of the impact of these  
2 other explanatory variables like energy, prices, labor  
3 costs, productivity, than you would -- better than you  
4 would have if you excluded the dummy variables and  
5 estimated the model without them.

6 Q. Okay. Next page, please. What are you showing  
7 here?

8 A. Okay. So this is just a look at my next three  
9 slides, really. Look at the three cost component --  
10 components that I'm estimating.

11 So this is the actual CDFA data, and this first  
12 slide is cheese manufacturing costs from 2002 to 2016.  
13 And I don't have total costs listed there, but I have the  
14 three components. So you've got utility costs, which is  
15 the gray line at the bottom; labor cost, which is sort of  
16 an orange-brown line in the middle; and then all other  
17 costs, which is the blue line at the top.

18 And for example, if you look at -- let's look at  
19 the utility cost, which is the line at the bottom. You  
20 will see starting in 2005 for like three years there was a  
21 jump upward in that utility cost number. And actually,  
22 when you look at the reports, you can see a jump in sewer  
23 cost, which is a component of utility cost. And we know  
24 at that time one of the larger cheese plants in the state  
25 was having some issues with whey disposal and -- and so  
26 they were having to dispose of whey in a way that was more  
27 costly, and that was reflected in those sewer costs that  
28 were picked up. So that's a case where you put a dummy



1 variable in, and it is capturing that short-term event,  
2 and that -- you know, that would be the case in that  
3 situation.

4 Here's a -- here's another look at costs for  
5 butter manufacturing in California.

6 Q. Okay. We're now on page 10. Go ahead.

7 A. Right.

8 And -- and here, for example, you see -- to that  
9 page -- on the top line, you see a couple of years where  
10 costs bumped up dramatically in 2008 and 2009. So that --  
11 that's one that corresponds to when a couple of new plants  
12 were opening in California that were sizeable enough that  
13 had an impact on costs.

14 Q. All right. Shall we go to the next page, which is  
15 page 11, the nonfat dry milk page. Anything -- or is that  
16 what you were just talking about?

17 A. No, I was talking about butter, but nonfat dry  
18 milk looks similar, in part, because they often go  
19 together when you open a new plant. So the corresponding  
20 new plant is influencing nonfat dry milk as well as  
21 butter.

22 We also saw a shift in utility costs that occurred  
23 around the same time.

24 And then we -- sometimes you will see an ongoing  
25 change that would be like a change in the slope. And so,  
26 for example, if you -- if you look at the labor cost  
27 number, sort of 2002 through 2011 or so, you have a  
28 gradual increase in labor cost and then a steeper one



1 afterwards going forward, 2012 and later. It might be  
2 kind of hard to see that on there. But looking at the  
3 numbers, you could see that change, and so you -- you  
4 know, here is a case of not really sure what was going on  
5 there, but it didn't seem to be related to the change in  
6 wage rates. So you use a dummy variable to represent  
7 there's something else happening that's accelerated the  
8 rate of change in that cost.

9 Q. If we go to the next page, page 12, is this an  
10 indication of the actual dummy variables that you used?

11 A. Yeah. So these were some of the dummy  
12 variables -- or these were the dummy variables used in the  
13 different models, and so you can just see, it is just --  
14 they are binary variables. So it's a 1 when that  
15 particular condition that you -- you know is happening is  
16 present, and it's a zero otherwise. So it has an impact,  
17 you know, when -- when the -- when there's a 1 in place,  
18 it has an impact on the model prediction. It does not  
19 have an impact when the 1 is -- when it's a zero.

20 Q. Okay. Next page, please.

21 Tell us what the model and trend results were.

22 A. Right. So we -- we estimated those three  
23 equations of those three cost components for each of the  
24 three commodities, butter, cheese, and nonfat dry milk.  
25 And what we found is that the estimated equations  
26 generally showed good fit and strong overall correlations  
27 for the equation.

28 Q. Okay. Explain to us what that means.



1           A.    Yeah.  So basically there's a measure of fit that  
2 we look at.  It's called the R-square.  And we actually  
3 look at something call the adjusted R-square which is a  
4 goodness of fit measure.  It's determined by looking at  
5 the sum of squared errors, which is a statistical term.  
6 That is a result of the -- it is a total that you see in  
7 the actual cost data.  We compare that to what's explained  
8 by the regression.

9           And so -- so basically one way of interpreting it  
10 is that if an R-squared, say, has a value of 90, .90, it's  
11 explaining 90% of the variation in the dependent variable.  
12 So your model that you have estimated is explaining 90% of  
13 that variation.  That would be how you interpret the fit.

14           And the overall correlation is just -- you know,  
15 it's very much like it.  This is measured using an  
16 F-statistic, where you look at does the model do a better  
17 job of explaining the changes in the variables than no  
18 model at all.  So it's a pretty easy -- easy bar to clear,  
19 but it -- it's -- it's certainly something you want to  
20 look at.

21           Q.   And -- and ultimately what did you -- sorry, you  
22 also have something called correlation coefficients?

23           A.    Right.

24           Q.    Can you explain what that is?

25           A.    So in addition to the F-stat, we have the t-tests  
26 of the individual parameter estimates, and that's  
27 basically a test of, is that parameter that you have  
28 estimated, which is the -- you can think of it as a slope



1 associated with the independent variables, like wage rates  
2 and energy costs -- is that, in fact, statistically  
3 different from zero, is it -- you know, does it have some  
4 explanatory value in the model or does it not.

5 And then the correlation coefficients, those are  
6 included instead of an R-square for the total cost because  
7 we didn't actually estimate a total cost model. We  
8 estimated a utility cost model, a labor cost model, and an  
9 other cost model. Then we are summing up those predicted  
10 values from our model, each of those individual three cost  
11 models, summing those up to come up with our total cost  
12 estimate. And then we're comparing that estimate from  
13 those three equations to the actual total cost, and that's  
14 the correlations that I'm talking about in that bullet  
15 point. So the correlation between the predicted cost for  
16 cheese and the actual cost was .92, where 1 is a perfect  
17 correlation, so .92 is kind of getting at the same idea,  
18 you are explaining a lot of the variation in the cost with  
19 the model.

20 Q. Overall what was your conclusion as to whether the  
21 model was doing a good job of predicting actual?

22 A. Yeah. So the fact that we had significant  
23 regression F-statistics, we had a lot of individual  
24 parameter estimates that were significant -- statistically  
25 significant different from zero, and the fact that the  
26 correlations of the overall cost predictions and the  
27 actual costs were quite high, suggests the model does a  
28 good job predicting actual costs.





1 Q. And then if we go on to page 14, is this the  
2 actual models?

3 A. So these are the actual models that we estimated.  
4 And so you can see this is the cheese manufacturing cost  
5 model. There's an -- just going through that first  
6 equation for labor cost. There's a -- what we call an  
7 intercept or a constant parameter; that's the all.  
8 There's a slope associated with -- with the manufacturing  
9 wage rate; that's  $b_{11}$ . And then there's a slope factor  
10  $c$  --  $c_{11}$  associated with the labor productivity. And then  
11 there's an error term. So the error term is, you know, if  
12 we're predicting labor costs, are we above or below it.  
13 Is the predicted version above it or below it, and that's  
14 what the error term is.

15 Q. All right. And you devised a similar formula for  
16 utility costs and other costs as well, correct?

17 A. Correct.

18 Q. And if we just go forward, you have a similar set  
19 of modeling of equations for butter on page 15?

20 A. Correct.

21 Q. And then nonfat dry milk on page 16, correct?

22 A. Correct.

23 Q. And then tell us what page 17 is -- is discussing.

24 A. Yes. Page 17 is -- this is Table 3 from the IDFA  
25 Exhibit 2, which was the actual paper that's been up for a  
26 while. And this is basically all of the estimated  
27 parameters. So if I go back a slide, if you are looking  
28 at this, you know,  $a_{31}$ ,  $c$  -- it is the parameters



1 associated with all those variables.

2 And so for cheddar cheese, for example, we have  
3 got a constant that was estimated associated with each  
4 cost component: Labor, utility, and other. We have  
5 manufacturing wage and labor productivity in the labor  
6 column. We have natural gas and electric prices in the  
7 utility column. And then we have some of the dummy  
8 variables like excess whey down there.

9 And the asterisks that are located to the right of  
10 each of those estimates are an indicator of whether the  
11 parameter estimate was statistically different from zero  
12 at the -- there's two asterisks at the 5% level; if  
13 there's one, it's at the 10% level.

14 And what does that mean? What does that  
15 significance of the 10% level mean? It means, that if --  
16 if it's significant at the 10% level that there is only a  
17 10% chance that you have erred in rejecting what's called  
18 the null hypothesis, and the null hypothesis is that that  
19 parameter is actually zero. So it's really not telling  
20 you a lot other than the fact that we -- we think that  
21 number is not zero, and we have been able to show that  
22 statistically.

23 Q. Okay. So if we go to the next page, tell us now  
24 how you took all of this information and analysis based  
25 upon what happened between 2003 and 2016 or 2002 and  
26 2016 --

27 A. Yes.

28 Q. -- in California, how did you then forecast what



1 manufacturing costs would be in 2022?

2 A. Right. So those estimated parameters on -- on the  
3 screen there, those -- those were used to -- in concert  
4 with data that is explanatory variable data in years  
5 subsequent to 2016, to make projections forward at times.  
6 So basically you multiply the data series -- and let's use  
7 one example.

8 If I have got wage rates from 2017 to 2022, I have  
9 got a parameter estimate associated with labor -- if I go  
10 back -- a manufacturing wage rate associated with cheese  
11 labor of .0049, right? So I'm going to estimate -- I'm  
12 going to multiply that .0049 times the manufacturing wage  
13 rate series that I have got in my dataset for 2017, for  
14 2018. And doing that for all the parameters in the model,  
15 you can then come up with a predicted value in those years  
16 beyond the CDFA dataset.

17 Q. Okay. And you -- you performed that calculation  
18 for each of the each of the variables you were tracking;  
19 is that right?

20 A. That's right.

21 Q. And what was the end product of this effort?

22 A. Yeah. Again, reiterating the fact that for dry  
23 whey what we did was we took the nonfat dry milk model  
24 estimates and predicted values and added \$0.03 to those  
25 because we didn't have an estimated whey model.

26 One of the things that we found is that looking at  
27 the 2022 numbers, they are all roughly around \$0.10 a  
28 pound higher than the 2006 numbers. So just to kind of



1 give an idea on a per pound of product basis, kind of cost  
2 change, that's -- that's kind of what it looked like.

3 So I have a table -- this was an extract from  
4 Table 5. So this is part of Table 5 that's in the actual  
5 report. I have pulled out, you can see the 2006 model  
6 predicted value. That's not the actual CDFA model. Those  
7 are in the earlier table that we went through. But I also  
8 have 2016 listed there, which was the last year that CDFA  
9 had audited data. And then the bolded numbers are all  
10 predicted values going out -- or forecast values, if you  
11 will, going out 2017 through 2022.

12 So you can see that the model had a predicted  
13 value in 2006 of 18.66 for cheese. The actual value I  
14 believe was 19.88. And this was a case where even within  
15 the dataset the predicted value was lower that year. But  
16 the predicted value is going out. You can see by 2022 we  
17 have a predicted value of just over \$0.30 a pound from the  
18 model for cheese, cheese manufacturing costs.

19 Q. All right. And take us to the next page, page 20,  
20 and tell us what that is showing.

21 A. Okay. So in addition to the -- to the models  
22 we -- with the cost equations that we estimated, we also  
23 just took a look at overall manufacturing costs and did  
24 a -- estimated a trend. So this is just a straight line  
25 that fits the data within the sample, and it is basically  
26 done by taking the manufacturing cost and regressing it  
27 against the year. So there's a constant term, then  
28 there's a slope equation with the year, and then that will



1 give you a predicted trend value.

2 And so we fit that trend and then, again,  
3 projected those forward to make forecasts from the trend.  
4 And this just shows what those would have been. And I  
5 think what you -- what you see when you look at those  
6 numbers is that certainly out in 2022, the trend values  
7 are below what the model estimates are for manufacturing  
8 costs. So the CDFA trend, for example, for cheddar cheese  
9 was \$0.27, a little over \$0.27, and the model estimate was  
10 \$0.30. So the trend is \$0.03 lower.

11 You go back, say, 2019, and the trend was \$0.2573  
12 cents, whereas the model estimate was \$0.2521. So in that  
13 one, the trend is actually higher than the model estimate.

14 So I -- the only reason I'm kind of making this  
15 comparison is that the model is picking up the changes in  
16 price levels or price variables like the PPI index or like  
17 the manufacturing wage rate or like the energy cost. And  
18 to the extent that those have accelerated in the last  
19 couple years of the timeframe here that we're looking at,  
20 say, 2021 and 2022, it's not surprising that the model is  
21 picking that up whereas the trend wouldn't pick that up.  
22 The trend is just dumb. It increases at a -- you know,  
23 the same rate every year going forward, and so there's  
24 some years where the trend is above what the model  
25 predicts and some years where it's below.

26 Q. In the real world, have actual costs gone up in a  
27 way that the model reflects?

28 A. Well, we had some testimony from some witnesses --



1 kind of just went through this slide. We have some  
2 testimony from some other witnesses. So these are the  
3 percentage increases that the model predicts. With cheese  
4 and -- cheese costs in 2022 versus 2006 of an increase of  
5 51.2%, whey 50.4%, butter 72.2%, and nonfat dry milk  
6 59.4%. So that's what the model predicts.

7 And we have had some testimony -- and this is  
8 just -- I was listening to most of this testimony, and,  
9 you know, what I took away from it is that the AMPI  
10 witness noted a 47% increase in the cost of manufacturing  
11 bulk cheese from 2008 to 2022. We're showing a little bit  
12 more than that from 2006 to 2022. Land O'Lakes noted a  
13 combined 70.26% increase in the cost of manufacturing  
14 butter and nonfat dry milk from 2007 to 2022. We had a  
15 70-plus -- 72% increase on butter and a -- I forget what  
16 the -- 59.4 on nonfat dry milk. So, again, similar range.  
17 And then the Northwest Dairy Association had noted an 80%  
18 increase in the cost of manufacturing products over, I  
19 guess, it was -- I didn't have the time period in here.  
20 I'm assuming it was the same general time period.

21 Q. Okay. And what utility do you believe this -- the  
22 analyses you have performed have for purposes of USDA's  
23 determinations of Make Allowances?

24 A. Well, I heard the question asked of Dr. Stephenson  
25 a little bit earlier today, like, you know, was it better  
26 to have an econometric model or was it better to have  
27 actual plant data from surveys. And I would agree with  
28 him, you know, plant data is -- is -- I would find that



1 inherently more reliable than an econometric model. But  
2 this is another data point, another way to look at  
3 estimating those costs. And it seems to -- when used  
4 alongside the cost testimony of other witnesses and  
5 Dr. Stephenson's work, I think it -- it helps sort of fill  
6 out the picture and -- and provide more corroboration of  
7 the costs that are being talked about.

8 Q. Okay. And to -- going back to IDFA Exhibit 2,  
9 which is Hearing Exhibit 180, is -- is -- is this a -- you  
10 know, this is the entire report reflecting the work that  
11 you did on this project; is that right?

12 A. Correct.

13 Q. And the PowerPoint presentation we have gone  
14 through, which is Exhibit now 195, is that -- have you hit  
15 the, sort of, if you would --

16 A. The highlights.

17 Q. -- the highlights of that study?

18 A. Yes.

19 Q. Okay.

20 MR. ROSENBAUM: At this point, your Honor, the  
21 witness is available for cross-examination.

22 THE COURT: Okay. Video -- did we lose the video  
23 for a second?

24 All right. Cross-examination for this witness,  
25 other than AMS?

26 CROSS-EXAMINATION

27 BY MS. HANCOCK:

28 Q. Good afternoon, Dr. Schiek.



1 A. Good afternoon.

2 Q. You just ended by saying that you do agree with  
3 Dr. Stephenson that a cost study model is a better data  
4 source than using an econometric model, I guess. And then  
5 I didn't hear the last part of it, which is where you  
6 landed.

7 A. Oh, I was saying this is another approach, and I  
8 think when used in concert with the other sources of data  
9 testimony from individual companies about their costs and  
10 Dr. Stephenson's work, it's just another point of  
11 corroboration, I guess, a point of reference to kind of  
12 understand where those costs are.

13 Q. Okay. And did you assist IDFA in putting together  
14 their proposal for their Make Allowance increase?

15 A. Not in putting together their proposal. IDFA  
16 approached me and asked if it -- if I thought it would be  
17 possible to estimate costs from CDFA data. And I thought  
18 about it for a while, and I said, well, we have a data  
19 series; we probably could do that. And then they asked if  
20 I would do it. So -- so my understanding is that they  
21 utilized this work as well as Dr. Stephenson's work.

22 Q. Do you know how they used it for the proposal that  
23 they made?

24 A. Other than looking at the numbers, my  
25 understanding is they averaged the two cost estimates.

26 Q. Okay. So do you understand that they took  
27 Dr. Stephenson's cost study results and then the  
28 econometric results that you have put together, added





1 them, divided by two, and then used that as the first-year  
2 numbers that they are proposing?

3 A. I think they -- that would be the -- my  
4 understanding, I don't know if I have got this right, is  
5 that they -- that would be the final year of their  
6 implementation schedule. So they would look at  
7 Dr. Stephenson's '22 -- 2022 numbers, they looked at these  
8 2022 numbers, as you described, added them, and divided by  
9 two to create a simple average, and then that would be the  
10 end year. And then they implemented it in a -- over a  
11 four-year period, I think, so with a -- with a chunk at  
12 the beginning and then equal steps after that.

13 Q. Okay. Thank you for that correction and  
14 clarification.

15 Do you know how it was that they -- that they took  
16 the average of yours and Dr. Stephenson's study that was  
17 then divided by two to get to their full amount of the  
18 Make Allowance increase, do you know how it was that they  
19 backed out and got to year one?

20 A. Just from looking at it, I mean, I don't know -- I  
21 don't know the exact process they went through, but from  
22 looking at it, it looks like year one is about half of the  
23 total increase.

24 Q. Okay. Just based on another percentage --

25 A. That's what it looks like.

26 Q. -- allocation? Okay.

27 That's at least what you understand it to be when  
28 you look at it?



1 A. Yeah.

2 Q. So let's -- let's look at -- let's just take the  
3 most recent CDFA manufacturing cost annual. And is this a  
4 study or a survey?

5 A. I would say it's a survey of plants in California  
6 regarding their manufacturing costs. And that was  
7 audited, yeah. So they talk about it as a study. I use  
8 the term study because that's how they refer to it here.  
9 But, yeah, it's a survey of plant costs.

10 Q. Okay. Is there a difference between a study and a  
11 survey? In your world, I guess I should clarify.

12 A. I think you could try to make one, but I think,  
13 people could refer to a study -- a survey as a study.

14 Q. Okay. And I thought that I heard you say that the  
15 CDFA data was audited. Did you say that?

16 A. It is. It was, yeah.

17 Q. Do you know when it was audited?

18 A. So -- okay. So my understanding of how that  
19 practice worked is CDFA would request cost data from the  
20 plants each of these years, and the plants would submit  
21 their data. And then they had a team of -- it was the  
22 cost -- manufacturing cost unit, a team of folks who would  
23 look at the data, that would go into the plant, meet with  
24 the folks, and ask questions about the data. They would  
25 ask for documentation. They would look at those. And  
26 then occasionally they would say, well, we think you need  
27 to -- you know, you didn't include everything, so you need  
28 to, you know, pull some more data from this area to get --



1 to ensure that the categories -- the cost categories were  
2 accurate and to ensure that the data was accurate.

3 Q. If you look at Exhibit 156, which is the 2015 data  
4 study, could you point to anyplace in here where it says  
5 that this is an audited study?

6 A. Exhibit 156. Are we looking at the same one? I  
7 have got 194 on this -- oh, was this introduced earlier as  
8 156?

9 Q. This is the one that was introduced earlier, so  
10 that's why my number is different. It is Exhibit 156.

11 A. I don't know that it says that it was audited, but  
12 it says, "The auditors worked with plant management to  
13 gather data on all aspects of the operation, review plant  
14 records on site, and allocate plant expenditures to each  
15 product manufactured by the plant. Studies are conducted  
16 and developed in conformity with generally accepted  
17 accounting principles, cost accounting techniques, and  
18 instructions contained in the dairy marketing branch's  
19 audit and cost procedures manual." That looks like an  
20 audit to me.

21 Q. Okay. Other --

22 THE COURT: Do we have a page number for that?

23 MS. HANCOCK: This is on page 3, your Honor.

24 THE WITNESS: Page 3 of -- yeah.

25 BY MS. HANCOCK:

26 Q. So is this what you are referring to when you say  
27 that the information is audited?

28 A. Yes.



1 Q. Okay. Has anybody from CDFA ever told you that  
2 the information was audited?

3 A. Yes.

4 Q. Who was it?

5 A. Well, that would be the branch chief referred to  
6 it as an audited study, and the head of that unit, Ed  
7 Hunter, called it -- referred to them as audited.

8 Q. Okay. So it's your belief, then, that it is  
9 audited based on those conversations and that statement?

10 A. That's correct.

11 Q. Okay. And you understand that the information  
12 in -- that you collected or that you evaluated is all  
13 based on California production?

14 A. Yes.

15 Q. And do you believe that California is  
16 representative of the rest of the country?

17 A. Representative to the extent that California is  
18 subject to a lot of the same -- first of all, they are  
19 making the same products and subject to a lot of the same  
20 cost influences. There are certainly differences, and  
21 even back in 2006 there were differences between, you  
22 know, Dr. Stephenson's numbers, from that time period --  
23 2005 to 2007 when he was collecting his information -- and  
24 the 2006 CDFA numbers. So there are certain costs that  
25 are different in California, you know, for -- for a while.  
26 I think wage rates have been higher in California than  
27 they are in other parts of the country. And -- but  
28 there's variations between plants depending on their labor



1 contracts, whether they are union or non-union, and what  
2 kind of contract they have with their workers, so that  
3 that kind of variation would be nationwide.

4 So I think it's -- it's representative. It may  
5 not be exactly --you know, I wouldn't necessarily expect  
6 that it is the exactly the same as U.S. weighted average  
7 for sure.

8 Q. So you mentioned wage rates. Do you know what the  
9 minimum wage is in California?

10 A. I believe it's \$15 an hour now.

11 Q. I think it's \$15.50. Does that sound right?

12 A. I'll take your word for it.

13 Q. Okay. Do you know what the minimum wage is in  
14 Wisconsin?

15 A. I assume it's less, but I don't know what it is.

16 Q. It's actually 50%, so it's the federal minimum  
17 rate.

18 A. Uh-huh.

19 Q. Does that sound right to you?

20 A. I -- I don't have a reason to dispute you.

21 Q. Okay. Do you have a way to factor into your  
22 analysis that the minimum wage in Wisconsin is 50% of what  
23 it is in California?

24 A. No. This is really a prediction of California  
25 costs.

26 Q. Okay.

27 A. Because we're using California data to do it.

28 Yeah.



1 Q. Okay. And extrapolate from that in a way that  
2 would be --

3 A. Reflective of California conditions.

4 Q. Okay. And so you're not suggesting that it would  
5 be reflective of the rest of the country's conditions?

6 A. Not any more than the fact that they are operating  
7 in the same environment -- you know, the same general  
8 business environment because they are making the same  
9 products. But, yeah, it's not -- the costs can be  
10 different in other parts of the country for sure.

11 Q. And you would agree with me that there are other  
12 parts of the country that have very different cost  
13 structures than what California has?

14 A. I believe that's the case, yes.

15 Q. And in particular, in large part because of the  
16 different regulatory schemes that -- regimes or schemes,  
17 that have -- that have developed in California as compared  
18 to the rest of the country?

19 A. Your -- I'm not sure which regulatory schemes you  
20 are referring to, but if you are saying we seem to like a  
21 lot of regulation in California, then I agree with that.  
22 We have high costs -- we have a lot of regulations and  
23 high cost -- higher cost of compliance.

24 Q. And businesses, whether it's the dairy industry or  
25 other -- any other business in California, tends to pay a  
26 higher cost because of the regulatory laws in California  
27 that govern business transactions in general. Would you  
28 agree?



1 A. Oh, yeah. Yeah.

2 Q. Do you know why CDFA was conducting these  
3 manufacturing cost studies?

4 A. Well, the primary motivation for it is my  
5 understanding -- and, again they started doing this long  
6 before I came to work at Dairy Institute -- but my  
7 understanding is it was to support the determination of  
8 the pricing formulas that they were using for the  
9 manufacturing classes of milk.

10 Q. When they were under a state order system?

11 A. Right. Under the state order system.

12 Q. And that's why it stopped in 2016?

13 A. Correct.

14 Q. Because then it became the Federal Order 51?

15 A. Correct.

16 Q. Do you know how they were using the studies in  
17 order to support their pricing systems?

18 A. They were using it as the basis for establishing  
19 Make Allowances under -- under their system, and the sort  
20 of primary benchmark was the weighted average  
21 manufacturing cost. I think in the later years, latter  
22 part of the series, it was common for the weighted average  
23 manufacturing cost to simply become the Make Allowance.  
24 Earlier years there was a little more discussion about  
25 that.

26 Sometimes they might set a Make Allowance that was  
27 above or below that number, depending on -- they were  
28 looking at other factors, too, like, how much the volume



1 of the plant -- of the volume of product produced would  
2 have been covered by the Make Allowance, how much  
3 dispersion there was among costs of -- sometimes you would  
4 have costs that were bunched tightly together where  
5 they -- the weighted average cost would be highly  
6 reflective of all plants.

7           There were other cases where you might have more  
8 of a spread, and then, I believe -- and I can't cite  
9 specific examples, I'm just remembering, you know, hearing  
10 discussions and decisions, but I believe there were some  
11 cases where CDFA chose to implement a Make Allowance that  
12 was either above or below the weighted average because  
13 of -- just because of that dispersion, you might have an  
14 outlier plant that had really, really low costs, and that  
15 would have -- setting it at the weighted average might  
16 have left many, many plants without their costs covered,  
17 so they would maybe set it higher in that case, and in  
18 another case they may set it lower because there were some  
19 high cost outliers.

20           Q.    Okay.  So if I'm understanding you correctly, your  
21 understanding of CDFA's use of this cost study that they  
22 did annually was that they would use all of the data that  
23 they collected, and then they would take real life  
24 information that they have about the plants that were  
25 operating in California, and make sure that it was  
26 reflected in the data, and if it wasn't, they would make  
27 additional adjustments, either above or below, and use the  
28 totality of that information to set Make Allowance?





1           A.    Yeah.  That's probably fair.  I would -- I would  
2           probably just say they would -- they would take into  
3           account more than just the weighted average manufacturing  
4           cost.  They would look at other factors and establish the  
5           Make Allowance.

6           Q.    Okay.  So they were really taking a 360-degree  
7           comprehensive review?

8           A.    They were taking a broader view, yes.

9           Q.    Okay.  But at the very core of it, was this  
10          audited mandatory cost study --

11          A.    Correct.

12          Q.    -- that they conducted on an annual basis?

13          A.    Yes.

14          Q.    Okay.  And they did not ever use the econometric  
15          modeling that you are using in order to set  
16          Make Allowance?

17          A.    No.  They -- they collected the costs directly  
18          from the plants.

19          Q.    And the data that they collected each year was  
20          even more comprehensive than what Dr. Stephenson collected  
21          under his cost study as well?

22          A.    More -- yeah.  It was -- it probably represented a  
23          higher percentage of the plants and the volume than his  
24          study.

25          Q.    And then also taking into account that totality,  
26          that comprehensive approach that you just described?

27          A.    Yes.

28          Q.    Do you know what percentage of the California



1 cheddar cheese or butter or nonfat dry milk and dry whey  
2 were represented in those manufacturing studies?

3 A. I think it -- it varies from year to year, but  
4 it's -- it's usually if you look at -- if you want to know  
5 the numbers, it's usually in each of the summary tables.  
6 I want to look at the nonfat dry milk study from -- I have  
7 it marked as Exhibit 194, but it's your --

8 Q. 156?

9 A. -- 156.

10 Q. And just so our record is clear, I don't believe  
11 we have an Exhibit 194 yet.

12 A. Oh, okay.

13 Q. Because I think that was --

14 A. 156 then.

15 So this is on page 8 of Exhibit 156. We're  
16 talking about volume. There's a table, and then there's  
17 some bullet points below the table but before the numbers  
18 start. And I think that here it says the volume  
19 includes -- let me back up go one higher. It's the first  
20 bullet point, towards the end, it says, "The eight plants  
21 processed 555.02 million pounds of nonfat dry milk during  
22 the 12-month study period January through December 2016  
23 representing 97.44% of the nonfat dry milk processed in  
24 California."

25 Q. Okay. And -- ooh.

26 A. I was just going to say, and I think there's a  
27 similar volume number reported for each of the  
28 commodities, and I think they do that every year.



1 Q. Okay. So greater than a 90% sample size; is that  
2 fair?

3 A. In terms of volume, yeah.

4 Q. Okay. And did you hear Dr. Stephenson say that in  
5 his cost study, for the one that -- the two categories  
6 that he believed he had a good representation on, he  
7 believed it was probably around 50%?

8 A. Yeah.

9 Q. And then there were two categories that fell  
10 somewhere between 10 and 50%?

11 A. Yes, I -- I had heard the testimony.

12 Q. Yeah. And -- and then did you also hear him say  
13 that sample size matters?

14 A. Yes. I heard him say that.

15 Q. Do you agree with that, that the sample size  
16 matters in the accuracy of the information that's  
17 reported?

18 A. Yes. The more representative your sample is, the  
19 more representative it is of actual cost. So I would  
20 agree with that.

21 Q. And we saw that when he had his 2021 study, and  
22 then his 2023 study compared to that, the numbers were  
23 different enough that he had to look into whether what  
24 those differences were. Did you hear that testimony?

25 A. I heard that testimony, yes.

26 Q. And did you hear him have the conclusion that what  
27 he -- what he had been able to figure out from that is  
28 that it was just that the sample size matters?



1 A. I heard him say that, yes.

2 Q. And so you can see that the sample size, at least  
3 in that example, can make wide swings in information  
4 depending on what data is collected?

5 A. I think it can. Sometimes -- sometimes smaller  
6 sample sizes can be representative, but obviously the  
7 more -- the more volume you have covered, the more  
8 confidence you have that it's representative.

9 Q. Do you know how much it cost CDFA to conduct that  
10 study every year?

11 A. I do not know.

12 Q. Okay. So I want to -- the totality of the  
13 information that was used to compile your econometric  
14 modeling stopped at 2016; is that right?

15 A. In terms of estimating the regression model, yes.

16 Q. Okay. And in terms of having the actual data that  
17 populated your model?

18 A. Correct.

19 Q. And then after 2016, I think you described in your  
20 summary in -- I'm sorry, I didn't seem to write down the  
21 exhibit number on your PowerPoint. What's the exhibit  
22 number on the PowerPoint?

23 THE COURT: 195.

24 MS. HANCOCK: Thank you.

25 BY MS. HANCOCK:

26 Q. Okay. And I think in your Exhibit 195, you had  
27 provided a summary of the numbers on page -- on page 19  
28 that shows you had the actual numbers, and then you have a



1 bolded line, and then everything after that is just  
2 predicted values based on your modeling; is that right?

3 A. Yeah. And actually the -- for example, if I'm  
4 looking at what's -- what I have called Table 5a on that  
5 page, where -- the table with the manufacturing cost model  
6 predicted values, the -- I think I -- if I didn't make  
7 this clear, the 2006 and 2016 numbers there are actually  
8 the model estimates within the sample period where we had  
9 the actual data. So those two aren't the actual costs.  
10 After I did the regression model, what did the model  
11 predict for that particular year? And then, of course,  
12 after 2016 all we have are the model predictions because  
13 there is no more actual CDFA audited cost data, so those  
14 are the model estimate -- or projections going forward.

15 Q. Okay. So I remember you saying that, but it  
16 didn't sink in with me in a way that I understood it.

17 A. No, but the -- where I talk about the percentage  
18 increases, those are based on the percentage increases of  
19 the predicted value versus the actual value that was in  
20 the earlier table in that PowerPoint.

21 Q. Okay.

22 A. Just to draw a distinction.

23 Q. That's okay. And I'm just going to dive in a  
24 little bit deeper just to see if I can understand it a  
25 little bit better.

26 When you say that the 2016 and 2006 numbers that  
27 are here are based on the model estimates, aren't the  
28 model estimates, don't they originate with the actual



1 numbers?

2 A. They do. But with a linear regression, even  
3 within the period where you have the actual numbers, the  
4 model is trying to fit a -- it's trying to compute a  
5 linear fit of a model throughout the whole period. So  
6 sometimes you are not going to hit the actual value  
7 exactly, you will be above or below it with your estimate,  
8 because it's a linear estimate, so it -- it -- sometimes  
9 the costs don't necessarily go up in line with the model.  
10 And so you will have some periods where you have an error  
11 on the positive side and sometimes there will be an error  
12 or the negative side. But the model is constructed in  
13 such a way to minimize those errors so you get the best  
14 fit possible of the data with your regression model.

15 Q. Is that a way that you can verify whether your  
16 regression model is working properly, is when you do --  
17 when you do the lookback period where you had actual  
18 numbers, that you can see if you come close to where those  
19 numbers are?

20 A. Yeah, that's one way of thinking at it -- thinking  
21 about it. But the bottom line is, you know, you expect  
22 you are not going to hit it with perfection. I mean, it  
23 is just not -- you're not going to -- unless it has some  
24 sort of straight line, you know, the cost line up in a  
25 very straight line. But you are going to fit a model  
26 using this technique that has the -- does the best job of  
27 sort of threading that needle.

28 Q. Okay. And in this modeling that you are doing



1 is -- you heard Dr. Stephenson talk about how this is not,  
2 in his view, the best way to predict Make Allowance costs  
3 because you don't have the opportunity to factor in things  
4 like specific product variations?

5 A. Yeah. I -- I heard what he said, and I don't  
6 disagree with it.

7 Q. Okay. And then in addition to not being able to  
8 factor in product variations, you also don't have the  
9 ability to factor in different productivity measurements  
10 at the plant. For example, if a plant was newly  
11 constructed and was much more efficient, that's not  
12 something that this model could take into account.

13 A. No, this model wouldn't take into account  
14 individual productivity gains at an individual plant. You  
15 wouldn't -- you wouldn't see that, at least, in the  
16 forecast. Now, it would capture some of that if it's  
17 happening during the period where you are estimating the  
18 data, so it would capture some of that, in the 2002 -- or  
19 2003 to 2016 period. But it -- it wouldn't have the  
20 ability to capture specific plant innovations or, you  
21 know, even brand new technology that happened subsequent  
22 to that period where that -- where -- where the sample  
23 period is.

24 Q. Okay. So I'm just going to paraphrase to make  
25 sure I understand what you are saying. You are saying  
26 if -- for example, if a plant today was constructed and it  
27 was able to capture a 20% more efficiency in productivity,  
28 if in the window of time between 2006 and '16 a plant had



1 been constructed that similarly captured a 20% improvement  
2 in efficiency, so it was in your input window, it could be  
3 forecasted out in your modeling in a way that would still  
4 capture it in your later time period?

5 A. It could capture some of that, yeah.

6 Q. Okay. But we don't really know as we look back if  
7 that is the case; is that fair?

8 A. That's fair.

9 Q. And there's not really a way to ensure that this  
10 modeling is capturing new innovation that might not have  
11 occurred during that same time period?

12 A. That's correct.

13 Q. So if we become extra efficient now with AI or  
14 some other new technologies that could be implemented in a  
15 plant, robotics, whatever it might be, if it hadn't  
16 happened at the same efficiency level previously, there's  
17 no way for it to be captured?

18 A. Yeah. I think you are right. That is -- I mean,  
19 that is the limitation of this kind of analysis.

20 Q. Okay. And then if we go to the next page in  
21 Exhibit 195 on -- you have a trend line. You use -- this  
22 is just the two methods that you used in your evaluation;  
23 is that fair?

24 A. Yes.

25 Q. Is a trend line taking the input period and just  
26 drawing a straight line forward?

27 A. Exactly. That's all it is.

28 Q. Okay. And I need to look at your -- do you have





1 your Exhibit 180 in front of you?

2 A. Exhibit 180 is the -- is the report?

3 Q. IDFA Exhibit 2. Yeah.

4 A. Yep, I have that.

5 Q. Can we turn to page 12?

6 Is table 5 here capturing the data in both your  
7 predicted modelling and then that straight line trend  
8 analysis?

9 A. Yes.

10 Q. So if I drew a line down the middle of the page it  
11 would be right under the word linear, and that would  
12 separate those two?

13 A. Correct.

14 Q. Okay. And if I look at 2021 for cheese, for  
15 example, we have \$0.2707 that your model has predicted; is  
16 that right.

17 A. .2707, yeah. That's correct. Right.

18 Q. And then if we look at what the trend line is,  
19 that's 26.78% -- I'm sorry, \$0.2678.

20 A. Right.

21 Q. And then fairly close to what your model  
22 predicted --

23 A. Correct.

24 Q. -- is that fair?

25 A. Yep.

26 Q. And then if we compare the whey column, that's  
27 similarly close; is that right?

28 A. Correct.



1 Q. And then the butter column is pretty close as  
2 well, \$0.2201 and \$0.2193?

3 A. Correct.

4 Q. And then nonfat dry milk, pretty close as well at  
5 \$0.2447 and \$0.2395?

6 A. Correct.

7 Q. Is it a fair conclusion to say that your model  
8 that you created is just about as accurate as a straight  
9 line linear trend model as well?

10 A. Well, the numbers you looked at, yeah. I think --  
11 I think the trend and the model estimates are fairly  
12 close, and I think that's because there is a fairly strong  
13 trend in the cost line from 2003 to 2016.

14 I think where you are seeing the divergence is  
15 when there is a big change in those explanatory variables,  
16 so we -- we begin to see -- in 2021, we had inflation take  
17 off, and we begin to see more elevation in the cost. And  
18 I think if you look back at, as I pointed out earlier, to  
19 2019, the model costs were lower than the trend. And I  
20 think we were picking up the fact that those price numbers  
21 were -- you know, cost of energy and cost of materials and  
22 those sorts of things were not moving up, in fact, had  
23 eased because the Fed was -- well, we -- we -- the Fed had  
24 raised interest rates in late 2018, and that led to a  
25 slowdown in the economy in 2019, and so we didn't see  
26 those price variables accelerating as fast. The model is  
27 capturing some of that, the trend is not.

28 So, you know, there's going to be times where the



1 model will be close to trend, there will be times where  
2 the model estimates will be below, and there will be times  
3 where the model estimates are above.

4 Q. Okay. And neither one of which is necessarily  
5 based on actual market conditions?

6 A. Well, the model does take into account the  
7 economic conditions that we have included as explanatory  
8 variables, like wage rates, the Producer Price Index or  
9 the -- you know, what we are using as a proxy for material  
10 costs, energy costs. The trend does not take any of that  
11 into account.

12 Q. Okay. And while your model can take it into  
13 account, it doesn't provide an actual adjustment for it,  
14 does it?

15 A. It provides an adjustment for it that's related to  
16 how actual costs adjusted during the sample period.

17 Q. For California?

18 A. For California, correct.

19 Q. Okay. Do you agree with me that -- and maybe you  
20 have already, but I'm just going to make sure I have asked  
21 this -- do you agree with me that it's important for  
22 manufacturing costs that the USDA uses to set  
23 Make Allowances are accurate and current?

24 A. Yeah. I think it -- it is -- that's the goal,  
25 right, is to set manufacturing allowances based on current  
26 and accurate costs.

27 Q. When you were -- when you were calculating -- when  
28 you were calculating your nonfat dry milk, you -- you



1 didn't have the data in CDFA's materials, at least not for  
2 all the years; is that fair?

3 A. Are you talking about the dry whey?

4 Q. I'm sorry. When you were calculating the dry  
5 whey, you did not have all the figures from the CDFA data  
6 for all the years?

7 A. I had all the figures there were. They just  
8 didn't do the study -- they only did the study for four  
9 years on dry whey.

10 Q. So you took the difference between nonfat dry milk  
11 and dry whey that's in the current Make Allowance and used  
12 that to establish your dry whey number and the numbers  
13 that you put together?

14 A. For dry whey, yeah.

15 Q. And it's \$0.03?

16 A. Correct.

17 Q. And so it's nonfat dry milk plus \$0.03, and then  
18 that's how you calculated the dry whey number?

19 A. Uh-huh.

20 Q. Is that a "yes"?

21 A. Yes. That is a yes.

22 Q. But Dr. Stephenson, if you look at his spread in  
23 2023 between dry whey and nonfat, it has \$0.0611; is that  
24 right?

25 A. I -- let's see. I don't think I have that in  
26 front of me, but I'll take your word for it.

27 Q. Did you review his numbers?

28 A. I looked at his numbers. I just don't have them



1 in front of me right now.

2 Q. Did you consider using the spread that he came up  
3 with as the spread for your calculation?

4 A. No. I -- when I was doing my work, we didn't have  
5 his most recent numbers. And because the CDFA data used a  
6 different way of allocating unallocated costs than his  
7 2021 numbers, so I didn't use those because that was a  
8 different methodology. So, you know, I just went with an  
9 estimate that -- \$0.03 is a number I have heard in the  
10 industry that is representative of incremental drying  
11 costs, whey versus nonfat dry milk, so -- and it -- it was  
12 the approximate difference in the Make Allowance. So  
13 those -- that was the reason I used it.

14 And I don't know if that number is accurate or  
15 not. I -- I have asked people who are knowledgeable about  
16 whey manufacturing, if that number still makes sense or  
17 has it gone up, has it gone down. And, you know, I kind  
18 of get, well, that might be -- yeah, might be \$0.03. You  
19 know, it's kind of -- I don't -- I don't -- I can't put a  
20 lot of faith in whether \$0.03 is the right number for  
21 incremental drying costs or not, but that's -- that's kind  
22 of what's in the current Make Allowance, so that's what I  
23 used.

24 Q. Okay. Is it fair to say for your modeling it is  
25 essentially a placeholder in that column for -- I should  
26 say -- strike that. Let me say that again.

27 Is it fair to say that in the numbers that you  
28 have concluded, it is somewhat of a placeholder based on



1 the modeling that you did?

2 A. I don't know that I would use the word  
3 "placeholder." It is an estimate using information  
4 outside the modeling work that I did. It's, you know,  
5 sort of using an external number that we think is  
6 representative of that incremental drying cost, but it's  
7 not -- it wasn't an analysis, an estimated whey cost or  
8 estimated the cost of dry whey. It's just what -- you  
9 call it a bootstrapped method maybe.

10 Q. Okay. Bootstrapped instead of placeholder.

11 A. Placeholder, yeah. Isn't that an important  
12 distinction, though?

13 Q. And you said that at the time that you did your  
14 modeling, you didn't have Dr. Stephenson's 2023 survey?

15 A. Correct.

16 Q. You only had his 2021 survey?

17 A. Correct.

18 Q. And if you would have used the numbers from his  
19 2021 survey, the difference would have been instead of  
20 plus \$0.0611, the number would have been a negative  
21 \$0.0283. Does that sound right?

22 A. Yeah. And I remember that was one the things that  
23 gave me pause, because there's very little -- it's hard to  
24 understand how it could cost less to dry a product that is  
25 more dilute than a product that is less dilute. And the  
26 fact that it had a lower drying cost could be possible if  
27 the dry whey plants were larger and more efficient than  
28 the nonfat dry milk plants, but that's not -- that doesn't



1 jive with my understanding of how dry whey plants operate  
2 versus nonfat dry milk plants.

3 So, yeah, that -- that was one of the numbers from  
4 the way he had allocated costs in that study that gave  
5 some folks in the industry pause, as to maybe that  
6 allocation cost isn't working quite right because that  
7 doesn't -- that doesn't make sense to those of us who --  
8 who have kind of watched and think about how much -- how  
9 much it costs to dry whey versus nonfat dry milk.

10 Q. Okay. And so the fact that his 2021 numbers  
11 showed that the cost to dry whey was \$0.2650, but then the  
12 cost of manufacturing nonfat dry milk was \$0.2933, that  
13 didn't -- it didn't sound right to you?

14 A. Didn't sound right. Exactly.

15 Q. Did you hear him earlier when he said that there  
16 were concerns in the industry about his 2021 butter number  
17 as well?

18 A. Uh-huh.

19 Q. Did you have those similar concerns?

20 A. When I looked at those numbers when they were  
21 released, I -- you know, I saw the cheese and the whey,  
22 and I was like -- or the cheese number and the whey number  
23 were kind of like, yeah, I could see those costs, those  
24 sound like in the ballpark. But the butter/powder seemed  
25 out of whack. You know, it seemed like, okay, this is  
26 very different because the butter cost went down,  
27 substantially, and the nonfat dry milk went up  
28 substantially, and that that just didn't look right.



1           But then, again, you know, I'm -- I'm most  
2 familiar with the CDFA data, and they allocate those costs  
3 on a solids -- total solids basis, which I understand is  
4 closer to industry practice than the transformation  
5 approach that Dr. Stephenson was using.

6           Q.    Okay.  So do you believe that the transformation  
7 valuation allocation method caused some of the issues that  
8 you were seeing in the numbers?

9           A.    That was -- you know, without knowing the data --  
10 I mean, he's looking at the data, and he knows what plants  
11 are included and that kind of thing.  Just looking at the  
12 results, that would be -- that would have been my  
13 hypothesis as to why those numbers looked odd.

14          Q.    Did you hear him testify, though, that he looked  
15 into that to see if that was the cause of what was driving  
16 the differences in the numbers?

17          A.    I heard that, yes.

18          Q.    And did you hear him also say that he concluded  
19 that it wasn't that, but it was the sample size?

20          A.    I heard him say that, yes.

21          Q.    Do you trust that what he said is accurate?

22          A.    I would say he knows the work he did better than I  
23 do.  So, yeah.

24          Q.    Okay.  And -- and then you understand that he  
25 redid that study on behalf of IDFA for 2023?

26          A.    Yes.

27          Q.    And the numbers that he got in 2023, did that seem  
28 to fit better with what you would have expected?





1 A. Yeah. I mean, in terms of the relationship  
2 between butter and powder particularly, yeah.

3 Q. Because the delta between dry whey and nonfat dry  
4 milk is now three times difference; is that right?

5 A. Well, yeah. But it's -- the dry whey costs are  
6 higher, which is what I -- more what I would expect.  
7 Higher than nonfat dry milk.

8 Q. And so almost a \$0.09 difference from 2021 to  
9 2023; is that right?

10 A. I don't have the numbers in front of me, so I'll  
11 take your word for it.

12 THE COURT: How much more do you have left? We  
13 have been going for about an hour and a quarter,  
14 20 minutes, something like that.

15 MS. HANCOCK: I have a little bit more. Do you  
16 want to take a break?

17 THE COURT: Yeah, let's take a break.  
18 Let's come back at 2:51.

19 (Whereupon, a break was taken.)

20 THE COURT: Back on the record.  
21 Your witness.

22 MS. HANCOCK: Thank you.

23 BY MS. HANCOCK:

24 Q. Dr. Schiek, when you look at the -- let me say it  
25 this way: How -- what percentage of accuracy would you  
26 place on your modeling?

27 A. That's a -- what percentage of accuracy? I'm not  
28 quite sure how to answer that or how you are defining



1 accuracy.

2 Q. Let's say it's a cheese plant in Wisconsin. What  
3 percentage of accuracy would you assign to the numbers  
4 that you have modeled in your materials to their  
5 manufacturing costs of cheese, cheddar cheese, in  
6 Wisconsin?

7 A. I don't know that I could put a number on that. I  
8 think, you know, as I said, we're using California cost  
9 data. We're using explanatory variables that we think  
10 impact the cost -- or are representative of cost changes  
11 in California, so these are essentially estimates of  
12 California costs. So to the effect that cheese plants in  
13 Wisconsin are influenced by the same cost pressures and  
14 cost factors that would be influencing dairy manufacturing  
15 plants in California, I would say cost increases could be  
16 related, the actual cost levels might be different.

17 Q. Okay. So the overall trends or percentages of  
18 growth, if you knew Wisconsin's starting point, you would  
19 be able to maybe assign that same percentage of growth to  
20 get to a more accurate number; is that a way to describe  
21 it?

22 A. That -- that probably would be a way of looking at  
23 it in terms of comparing Wisconsin and California. Yeah.

24 Q. That would get you closer to an accurate number  
25 than just assigning the model number results from  
26 California to Wisconsin; is that fair?

27 A. I think depending on the premise of your -- based  
28 on the premise of your question, if -- if I know upfront



1 that the costs are different, and I say that costs are  
2 different, but I believe they are subject to the same kind  
3 of inflationary pressures, then, yes, I would say  
4 you're -- the way you have presented it to me is accurate.  
5 But I would have to know that to begin with, and I don't  
6 know that I know that.

7 Q. Okay. And you didn't know it when you did your  
8 modeling either; is that right?

9 A. Correct.

10 Q. Okay. And if you -- as an economist, if you were  
11 trying to make an accurate prediction, to what decimal  
12 number would you like to go out to for accuracy purposes?

13 A. Yeah, I don't know who started this. I guess it  
14 was CDFA started going out to four decimal points, and so  
15 that's what we have data on. And so when we do the  
16 forecasts, they are coming out at four decimal places,  
17 too. But, in reality, you know, if you are within a half  
18 cent, I would think that's probably pretty close.

19 Q. Okay. So just to the tenth of a cent?

20 A. Yeah.

21 Q. Are you confident in the -- enough in the results  
22 of your modeling that you would use those numbers to set  
23 Make Allowance?

24 A. You know, I think if you had -- in the absence of  
25 an audited cost study, yes.

26 Q. Okay. Do you agree that if you had an opportunity  
27 to have an audited cost study that was mandatory, that  
28 would be a better way to set Make Allowances?



1           A.     I think in the long run that would be a better way  
2 to set Make Allowances.

3           Q.     Would it also be a better way to set it in the  
4 short term as well?

5           A.     If you have it, it is better. I mean, I think  
6 what we're -- what we're running into here is that it's --  
7 it's been many years, I've forgotten the number now,  
8 2006 -- 2008 was when he changed it based on 2006, 2007  
9 data. And I -- I could say with some confidence costs  
10 have changed, and I think we have heard that from  
11 processors and co-ops who have testified.

12                     So the question is, you know, what's -- what's the  
13 risk of waiting to update what is an outdated number  
14 versus, you know, the accuracy gained that you would get  
15 by waiting for an audited number. I think that's really  
16 the question that the Department's going to be dealing  
17 with.

18           Q.     Okay. So making an adjustment now, even if it's  
19 not accurate, is at least better than no adjustment now;  
20 is that right?

21           A.     I -- I would say you really want to know what your  
22 best estimate of costs, current costs are, that that  
23 should be what you are aiming for. And then how you  
24 implement that, that's a policy question.

25           Q.     Okay. And it's fair to say if we're looking on,  
26 that you agree that the best way to set them would be on  
27 an accurate number, right?

28           A.     Yes.



1 Q. And -- and if we look at kind of prioritizing  
2 which one is the most accurate, the most accurate would be  
3 a mandatory audited cost survey. Would you agree?

4 A. I -- yes. I think that's -- that's accurate, for  
5 sure.

6 Q. And then in the level of priority, the next one  
7 would be an actual cost survey, such as ones that  
8 Dr. Stephenson has conducted, if you don't have a  
9 mandatory survey. Would that be fair?

10 A. Yeah. I think, in general, real plant data is  
11 preferable to -- to this approach in terms of --

12 Q. And when you say --

13 A. -- econometric approach --

14 (Court Reporter clarification.)

15 THE WITNESS: I think the question was, would a  
16 cost survey be preferable to an econometric model like I  
17 have estimated; is that accurate?

18 BY MS. HANCOCK:

19 Q. That is correct.

20 A. Okay. And I was saying, I think you would always  
21 prefer to have actual plant data from a survey as long as  
22 it is, I guess, broad enough to encompass and be  
23 representative, and then the econometric model would be  
24 something that would be employed in support of -- of the  
25 plant data.

26 Q. Okay. And so then if we have the mandatory  
27 audited cost survey as the number one way that we could  
28 achieve accuracy, and then a cost survey below that --



1 A. Uh-huh.

2 Q. -- such as the one that Dr. Stephenson has  
3 conducted, either in 2021 or 2023, and then your modeling  
4 would be below that; is that right?

5 A. In order of preference for -- for policy purposes  
6 in setting Make Allowances, yes.

7 Q. Okay. So would you agree with me that by adding  
8 your numbers in the modeling to Dr. Stephenson's 2023  
9 numbers, and then taking an average of those two, that it  
10 is something less than or less valuable than just looking  
11 at his alone?

12 A. I think it depends on how confident you are that  
13 his numbers are representative of the current conditions  
14 in the marketplace. And, you know, I think one of the  
15 things I said I think in the study that, you know, his --  
16 his estimate for the manufacturing costs for cheddar  
17 cheese is lower than the estimate for 2022 that we came up  
18 with in my modeling. I think all the other ones, dry  
19 whey, nonfat dry milk, butter, his estimates are all  
20 higher than what I came up with.

21 And, you know, I don't know, I -- I just -- I kind  
22 of track these costs through 2016. I have a -- talk to  
23 people, I don't know that, you know -- I can't say that  
24 definitively that his cost estimates in all of the  
25 commodities are -- are a better representation of where a  
26 cost level is today than -- than -- than my estimates.

27 Q. And that's because based on your experience in the  
28 industry, you see some anomalies in his number that don't



1 match up with what you would expect to see in his actual  
2 numbers; is that fair?

3 A. I would say some of those numbers seem a little on  
4 the high side to me, yeah.

5 Q. Okay.

6 MS. HANCOCK: That's all I have. Thank you so  
7 much, Dr. Schiek.

8 CROSS-EXAMINATION

9 BY MR. MILTNER:

10 Q. Good afternoon, Dr. Schiek.

11 A. Good afternoon, Mr. Miltner -- or should I say  
12 Squire Miltner?

13 Q. You can say what you like.

14 Shall we put some folks to sleep?

15 A. I think it's too late for that.

16 Q. I'm looking at pages 7 through 9 of your full  
17 report, Exhibit 180.

18 So at the bottom you have kind of a legend, and  
19 you have two asterisks means the estimated parameter or  
20 regression statistic is significant of the 5% level, and  
21 then one asterisk means the same at a 10% level.

22 A. Correct.

23 Q. And in more basic terms, what does that mean?

24 A. More basic is probably going to put people to  
25 sleep even faster.

26 So when we talk about statistical significance,  
27 the way these tests are set up, so for the regression  
28 statistic, which is I'm talking about the F, the F-stat



1 here that you see, so same with each equation, the --  
2 there's a -- there's a hypothesis that's assumed, we call  
3 it the null hypothesis, and that's the model that you have  
4 just estimated has absolutely no ability to explain  
5 variations in the variable, the dependent variable that  
6 you are trying to measure, which in this case would be,  
7 let's say, labor costs.

8 So what significance at the 5% level means is that  
9 there is less -- if I say I'm going to reject that null  
10 hypothesis in favor of the alternative, which it does have  
11 some power to explain the variations in the -- in the  
12 dependent variable, there's less than a 5% chance I'm  
13 wrong if -- if I reject that null hypothesis. So  
14 that's -- that's what the 5% is.

15 And so for 10%, which is a lower -- a less  
16 rigorous statistical threshold, it's saying there is less  
17 than a 10% chance that I'm wrong in rejecting the null  
18 hypothesis.

19 Q. If I then look at your formulas or your equations,  
20 under the cheese manufacturing cost model, beginning with  
21 the first equation, labor cost equals an A constant --

22 A. Uh-huh.

23 Q. -- plus a B constant times the manufacturing wage,  
24 plus the C constant times labor productivity factor, plus  
25 an E constant, there are two asterisks by your B,  
26 constant, but there are no asterisks by your other factors  
27 there.

28 A. Correct.





1 Q. Does that mean that you cannot attest to the  
2 significance of those other constants?

3 A. So, yes. What that means is that only the  
4 parameter estimate associated with the manufacturing wage  
5 rate was statistically significant at the 5% level, and  
6 the other two were not statistically significant at the  
7 10% level.

8 They may have been -- you know, if you relaxed the  
9 constraint, they may have been significant at some other  
10 level, but they are not significant at that level.

11 Q. Okay. So further to the right of that equation,  
12 you have your F-statistic and your adjusted R-square.

13 And you mentioned the F-statistic, but if you  
14 could, recap again for us what that F-statistic  
15 represents.

16 A. Right. So that's the regression statistic. It  
17 basically says that this equation that we have estimated,  
18 the null hypothesis associated with that equation is that  
19 it does not explain the variation in the labor cost  
20 variable. And what this statistic value of two asterisks  
21 means is it's significant at 5% level. If I reject that  
22 null hypothesis, I would -- I'm -- I have less than 5%  
23 chance of making an error by rejecting that.

24 Q. If you turn forward in -- in this exhibit to  
25 page 19.

26 And at the top half of the page, I guess -- you  
27 state it right there -- this is an ANOVA analysis of the  
28 cheese labor estimate equation, correct?



1 A. Correct.

2 Q. Where you have kind of a, I don't know, a quarter  
3 of the way down, F, 24.432, is that the F calculation, the  
4 F-statistic for this particular formula?

5 A. Yes.

6 Q. And so back on page 7 you didn't -- you didn't put  
7 the F-statistic in there, you just indicated whether it  
8 was significant at 5%, correct?

9 A. Correct.

10 Q. Does the actual number of the F-statistic have any  
11 significance?

12 A. Well, the way this F-statistic is constructed, the  
13 higher it is, the actual, you know, smaller your chances  
14 are of making a -- what we call type one error, rejecting  
15 the null hypothesis when it, in fact, was true.

16 Q. So a higher F-statistic is better --

17 A. Better --

18 Q. -- as far as being a predictive equation?

19 A. Correct.

20 Q. So back on page 7 next to that, you have the  
21 adjusted R-square?

22 A. Correct.

23 Q. And I could try to explain what I think that  
24 means, and I think I would be right, but I wouldn't do it  
25 cogently. So can you help us with the adjusted R-square?

26 A. Okay. So the R-square is a measure of fit of the  
27 model in terms of how much of the variation in the  
28 dependent variable -- in this case let's use the labor



1 cost as the example -- how much is explained by your  
2 regression model. And the R-square is around 80%.

3 The adjusted R-square is a way of comparing models  
4 that have different numbers of variables in them -- there  
5 are a different number of -- yeah, numbers of explanatory  
6 variables in them, so that you can always improve your  
7 R-square by adding more regressors, more explanatory  
8 variables, but you start losing efficiency, you start --  
9 over time.

10 And so the adjusted R-square is a way of  
11 essentially penalizing you for the extra variables you are  
12 adding and whether they really contribute much to the  
13 explanatory power. And that's why it's kind of a better  
14 measure of fit to use when you are comparing different  
15 models than the straight R-square. So that's -- it's  
16 another measure of fit that adjusts for the number of  
17 variables that you are using to explain the -- explain  
18 variations in the dependent variable.

19 Q. I want to give you my understanding of what that  
20 means for the cheese manufacturing labor cost equation and  
21 let me know if you agree with it.

22 The adjusted R-square of .77 means that if you had  
23 an actual observation on the labor cost at a cheese plant  
24 and a predicted labor cost for that same plant, 77% of any  
25 variance is explained by the model; is that right?

26 A. Correct.

27 Q. Okay. So further down where you kind of have --  
28 on page 7, what I have called a legend for the various



1 abbreviations in the equations, I want to look at the  
2 outside factors that get pulled in.

3 So if I start with MFG wage, you explain what that  
4 is. That's a California specific wage figure, correct?

5 A. Correct.

6 Q. And but labor productivity, lab pro, that's a  
7 national average, correct?

8 A. It is, yes.

9 Q. Similarly, natural gas, you have chosen a  
10 California specific measure of natural gas prices,  
11 correct?

12 A. Correct.

13 Q. Same for electricity, that's California specific?

14 A. Correct.

15 Q. Okay. Turning to the next page, US PPI is  
16 obviously a national figure.

17 A. Uh-huh.

18 Q. Food TFP, that's also a national figure, correct?

19 A. It is, correct.

20 Q. I think, the rest are dummies.

21 So it really is the labor and the energy costs  
22 that are California specific numbers in your equations,  
23 correct?

24 A. Correct.

25 Q. Okay. Here's where the No Doz would be helpful.

26 I want to go through the labor equation for  
27 cheese. So if I -- if I take that equation, and I have  
28 the first constant is all, which if I look at page 9, and



1 Table 3, I think that that is 0.0116, correct?

2 A. Correct.

3 Q. And then if I move further in the equation, I now  
4 have b11. And if I look at Table 3, I think I'm supposed  
5 to pull 0.0049; is that correct?

6 A. Correct.

7 Q. And then that B constant will be multiplied times  
8 the manufacturing wage which you reference, correct?

9 A. The .0049?

10 Q. Yes.

11 A. Yes, that's correct.

12 Q. Okay. The next term is c11. And I think that  
13 that is a negative 0.0004.

14 A. Correct.

15 Q. And then you multiply that times lab pro, the  
16 non-farm labor productivity index, correct?

17 A. Correct.

18 Q. Okay. The next thing I have is e11. Now, your  
19 E-constants are regression error terms, and I have not  
20 been able to locate the e11 constant.

21 A. So e11 is not a constant. It is not a parameter.  
22 It is just the error term. So it's -- it's -- so the  
23 predicted value is everything before the error term.

24 Q. Okay.

25 A. The error term only measures the distance between  
26 the predicted value and the actual value.

27 Q. Okay. Very good. I promise I won't go through  
28 all of these, but let's look at utilities for nonfat dry



1 milk.

2 A. Okay.

3 Q. So the first constant -- I'm pulling these, again,  
4 off of Table 3 -- a32 is 0.0408, correct?

5 A. Yes.

6 Q. And then the B constant there would be 0.0008,  
7 correct?

8 A. Correct.

9 Q. And -- and the C constant is 0.0094, right?

10 A. Correct.

11 Q. Okay. Have you had a chance to review the  
12 testimony that Mike Brown is going to present on this  
13 topic?

14 A. I have not. I have seen a couple of pieces of it  
15 but, no, not in its entirety.

16 Q. I believe that he's going to testify that IDFA  
17 recommends blending Dr. Stephenson's report and your  
18 report weighted equally to set Make Allowances.

19 Is that your understanding of what IDFA is  
20 proposing?

21 A. That's my understanding, yeah.

22 Q. So Ms. Hancock asked you some questions about the  
23 relative costs of labor and energy in California versus  
24 the U.S. And I don't recall if she asked if you had  
25 looked at the differences in labor for the term or -- the  
26 labor costs that you specifically reference for California  
27 and how that compares to the same labor costs nationwide.

28 Did you examine that?



1 A. Earlier on in doing this work, I estimated the  
2 model -- it's not quite the same thing -- but I estimated  
3 the model using national cost numbers, just to see, does  
4 it make a big change in the parameter estimates.

5 Q. What did you conclude when you looked at that?

6 A. I concluded that, while the projected costs were  
7 lower using the national numbers, they were -- I'll use  
8 the term in the same ballpark. They were anywhere from a  
9 half a cent to maybe a cent to a cent and a half lower.  
10 They weren't an order of magnitude lower.

11 So that would be -- the hypothesis there would be,  
12 if you were looking at California costs that were  
13 increasing or changing at a rate that the national average  
14 costs were changing, that would be what the model would  
15 predict.

16 Q. Where you describe the MFG wage, you state that  
17 that is the annual average hourly earnings for California  
18 non-supervisory manufacturing workers, and so BLS lists  
19 both a median and a mean. You said average. So I assume  
20 that means you took the mean?

21 A. That was the mean, I'm pretty sure, yeah.

22 Q. Okay. So if I told you that California's rate  
23 is -- mean rate is 125% of the U.S. mean rate, does that  
24 sound reasonable to you?

25 A. Yeah, it wouldn't surprise me.

26 Q. So if we go back to the labor formula for cheese  
27 that we just walked through and I plug in California's  
28 mean rate, and then I plug it in for Michigan where



1 Midwest Cheese is located --

2 A. Uh-huh.

3 Q. -- that labor difference there, as I run it  
4 through, I come to about \$0.016 a pound. Does that sound  
5 reasonable?

6 A. I can't -- I can't tell just from your  
7 description. So how much -- give me -- if you wouldn't  
8 mind, could I have the Michigan labor difference again?

9 Q. Well, again, I took -- I took the national mean of  
10 18.68 and the California mean of 23.40, so it was 125%  
11 difference. I used the --

12 A. Yeah.

13 Q. -- national average versus California's.

14 A. Okay. So you are saying it is a cent?

15 Q. I'm saying that particular -- that particular  
16 piece of your equation, that just the B constant times the  
17 manufacturing wage, has an impact of about \$0.016 as I ran  
18 it through.

19 A. Yeah. That -- that may be the case. I -- I don't  
20 know. The -- the -- I think the real comparison would be  
21 not to run that number on a -- you know, a model of the  
22 California dataset. But if you -- if you could run it on  
23 the Michigan dataset, you know, if you are using Michigan  
24 costs, you may have come up with a number that's lower  
25 or -- or if the Michigan plant costs were higher, you'd  
26 come up with a -- could come up with a number that's  
27 higher even if the wage rate was lower because they may  
28 have other costs.





1 But, yeah, if you are just isolating that cost and  
2 you are using California data that was estimated with  
3 California wage rates, and then you are plugging in a  
4 Michigan wage rate that's lower, yeah, I mean you could  
5 have an impact that -- that is significant.

6 Q. So I want to ask also then about the California  
7 utility numbers. And if I look at -- first of all, were  
8 the electric -- the electricity factors in your formulas,  
9 are they per kilowatt hour price?

10 A. I believe so, yeah.

11 Q. And then for natural gas, would that be per  
12 thousand cubic feet?

13 A. Right. That's correct.

14 Q. Would it seem reasonable to you if, on average,  
15 U.S. industrial electric rates -- let me rephrase that --  
16 California industrial electric rates are 116% higher than  
17 the U.S. average for all other states?

18 A. California electric rates have increased a lot.  
19 So, yes, that wouldn't surprise me.

20 Q. And for natural gas, California is 84.4% higher  
21 than the national average. Does that sound reasonable?

22 A. That wouldn't surprise me either. And those are  
23 industrial rates.

24 Q. Those are industrial rates.

25 So if I take the EIA data for the current month --  
26 and I recognize you did annual averages -- but if I took  
27 the current month, and it reported California's per  
28 kilowatt rate at \$0.1937 and the rate for Texas at



1 \$0.0674, does that sound reasonable to you?

2 A. That sounds why you are not seeing a lot of new  
3 plant investment in California, yeah. I -- I don't know  
4 if it's reasonable or not, but it -- it -- based on the  
5 numbers you are talking to me about, it doesn't seem out  
6 of the realm of possibility.

7 Q. If I look at Figure A-3 on page 17 of your report,  
8 utilities -- well, except for as they trailed off, but  
9 through CDFA's report, they were, for the most part, the  
10 second largest or maybe the single largest category of  
11 costs for a nonfat plant, correct?

12 A. Utilities are -- well, it depends on how you  
13 are -- how you are categorizing the costs. I guess, are  
14 you looking at the CDFA categories or are you looking  
15 at -- for here, I'm estimating three equations that have  
16 labor, utility, and other. And other, in all cases, is  
17 the largest component.

18 Q. I assumed other contains a bucket of various  
19 costs.

20 A. I think I listed them there. Yeah.

21 Q. Yeah. So if utilities are such a large component  
22 of the nonfat cost of production, would a -- would a  
23 difference of nearly 100% in the natural gas costs be  
24 meaningful when you are trying to apply California costs  
25 to a national program?

26 A. Yes. I mean, really what you are asking is, are  
27 costs in plants located in other states likely to be lower  
28 than costs in California; would that be fair?



1 Q. I think that's one way to look at it. If you want  
2 to answer that question, I'll rephrase mine.

3 A. I think -- I think the fact that a location with a  
4 lower utility cost could have lower plants costs of  
5 manufacture is certainly a possibility.

6 Q. If California's electricity costs are more than  
7 100% higher than the rest of the states, and natural gas  
8 prices are nearly 100% higher than the rest of the states,  
9 is it appropriate to use California's costs to set a  
10 formula that applies to the entire country?

11 A. I think given the amount of nonfat dry milk that's  
12 manufactured in California, certainly California costs as  
13 a part of that equation is valid.

14 Q. And Dr. Stephenson included California plants in  
15 his study didn't he?

16 A. I believe he did.

17 Q. And according to the 2002 dairy product summary  
18 from NASS, California produces about 17.5% of the cheese  
19 in the country, correct?

20 A. I don't have that in front of me, so I --

21 Q. Does the Dairy Institute track that information?

22 A. We used to.

23 Q. Okay.

24 A. But not as much anymore. I haven't looked at that  
25 number in a while.

26 Q. Does around 20% sound right?

27 A. Yes.

28 Q. And cheddar, 6.95%?



1 A. That sounds right, too.

2 Q. Butter, about a third, 33.3% actually?

3 A. Yeah. That sounds about right.

4 Q. And nonfat, a larger percentage, 34.7% sounds  
5 reasonable?

6 A. It does.

7 Q. Dry whey, about 25%?

8 A. Dry whey, 25%? That sounds high.

9 Q. That sounds high?

10 A. Uh-huh.

11 Q. Okay. I'm sorry. You know why that's high?  
12 Because they don't report California, they report the  
13 west. So --

14 A. Okay. I could buy it for the west.

15 Q. Okay. And California's about 18% of U.S. milk  
16 production, correct?

17 A. That sounds about right.

18 Q. And so Dr. Stephenson has already weighted  
19 California -- or he's included California in his study,  
20 correct?

21 A. Correct.

22 Q. And IDFA wants to take those California numbers  
23 and have it account for a full half of it, correct?

24 A. Correct.

25 Q. On top of what's already in Dr. Stephenson's  
26 study, correct?

27 A. Correct.

28 MR. MILTNER: Thanks. That's all I have.



1 MR. ENGLISH: Chip English for the Milk Innovation  
2 Group, your Honor.

3 CROSS-EXAMINATION

4 BY MR. ENGLISH:

5 Q. Dr. Schiek, do you still have Exhibit 156 in front  
6 of you referred to by Ms. Hancock, or National Milk?

7 A. 156. Make sure, it is the gray cover 2016 data?

8 Q. Yes.

9 A. Yeah.

10 Q. So when you were asked questions, I think you  
11 looked at one paragraph on page 3, and I would like to  
12 point you to another paragraph before I actually go look  
13 at some decisions by USDA.

14 So on page 3, the last paragraph, could you read  
15 the second line that begins after the word "California"?

16 A. Yes. So this is page 3.

17 Q. Of 17 of Exhibit 156.

18 A. 156. So this is referring to the cost studies.

19 Q. Yes.

20 A. "They are the only studies in the U.S. which  
21 present the audited and detailed processing costs of  
22 butter, nonfat, dry milk, and cheddar cheese over several  
23 years."

24 Q. So does that refresh your recollection of whether  
25 CDFA audited the costs?

26 A. Well, they certainly claim they do, and I have no  
27 reason to really reject that.

28 Q. And part of why we're talking about California,



1 after all, is that in a series of hearings back in 2006  
2 and 2007, CDFA data was presented, and USDA ended up  
3 relying on CDFA data, correct?

4 A. Correct.

5 Q. Okay. Are you aware that in the 2006 decision,  
6 which is Federal Register number 71, starting at 67467,  
7 published in November 22nd of 2006, I represent to you  
8 that USDA stated the following: "The CDFA witnesses  
9 testified that all cost survey data collected is from  
10 audited plant cost records."

11 Would that also refresh your recollection as to  
12 whether CDFA data was audited?

13 A. Yes. I would -- I don't know if it refreshes, but  
14 I would take that as CDFA attesting to the fact that they  
15 were auditing their data.

16 Q. And later in the decision, if USDA said, we're not  
17 going to rely on certain data because it's not audited,  
18 but the reason we are using CDFA data is because it is  
19 audited, USDA had concluded back as early as 2006 that  
20 CDFA data was audited, correct?

21 A. Correct.

22 MR. ENGLISH: Okay. I have no further questions.

23 THE COURT: Anyone else have cross, other than  
24 AMS?

25 Your witness.

26 CROSS-EXAMINATION

27 BY MS. TAYLOR:

28 Q. Good afternoon.



1 A. Good afternoon. It is nice to see you,  
2 Ms. Taylor.

3 Q. It's nice to see you. I bet you are surprised,  
4 too, that I might still have questions for you given the  
5 amount of questions you have already had.

6 A. Nothing surprises me.

7 Q. That's true. I am going to try to stay a little  
8 bit out of the weeds.

9 A. Okay.

10 Q. Okay? Attempt. And just have a few questions  
11 that left over from what people didn't already ask.

12 Your -- the data you have used in your model goes  
13 to 2016.

14 A. Correct.

15 Q. So have you -- does your model account for any  
16 changes in the makeup of California plants since that  
17 time, new plants or closed plants?

18 A. It does not.

19 Q. I know you cite for -- well, let me ask you one  
20 more question. So I don't -- do you -- can you talk about  
21 what -- how the makeup of California manufacturing plants  
22 have changed since 2016?

23 A. Generally, so throughout that sample period, you  
24 know, just rethinking your first question to me, I --  
25 specifically with the cheese industry, the number of  
26 cheddar cheese plants in California declined throughout  
27 that period. We started that period with quite a number  
28 of them, and by the last study, I think there were four



1 plants.

2 Q. You are saying prior to 2016?

3 A. Prior to twenty -- last study in 2016, so in like  
4 2003 there may have been eight or nine cheddar plants. I  
5 could find out if I look. But that -- so that number  
6 declined throughout that period. So the model estimates  
7 cost in a period of declining numbers of cheddar cheese  
8 plants. I mean, that's part of the background. So to  
9 some extent there is sort of a movement towards fewer  
10 plants kind of baked into the model, just because that's  
11 what was going on in -- with the data during that  
12 timeframe.

13 But in terms of since 2016 --

14 Q. Can I ask you a different question --

15 A. Okay.

16 Q. -- before you answer the post 2016? Can you speak  
17 to how plants -- other manufacturing plants would have  
18 changed during that time, butter plants, powder plants?

19 A. Yeah. I don't think the trend is quite as clear  
20 there because we had some -- during that sample period, we  
21 had some new plants open. And I know, you know, we had --  
22 we had a couple of plants close and then one reopen. So,  
23 you know, there was less of sort of a linear trend in  
24 terms of consolidation in nonfat dry milk during that  
25 period, and I think butter would be the same answer as far  
26 as nonfat dry milk. And, of course, dry whey we never had  
27 a lot to begin with, so --

28 Q. Right. Okay. So, now, how do you think that's





1 changed since 2016?

2 A. We have had a little bit of consolidation in  
3 nonfat dry milk, in other words, I think a couple of plant  
4 have closed since that period, but it hasn't been a  
5 particularly rapid consolidation.

6 Butter, I probably -- you know, Rob Vandenheuvel  
7 would be able to speak to this better, but I don't know  
8 that we have seen the same rapid number of decline in  
9 butter plants.

10 And cheddar cheese, I think we have -- we have one  
11 plant that ceased operation last year sometime, and that  
12 was a smaller cheddar plant.

13 Q. I'm just wondering, since you have vast experience  
14 in California, specifically, and the California Federal  
15 Order came into existence in the end of 2018, and so  
16 that's when they went from the state pricing formulas with  
17 their Make Allowances to ours as currently exist.

18 And I'm just wondering if you -- I don't know, did  
19 that change in price formulas in Make Allowances perhaps  
20 have any influence in -- on investment decisions in the  
21 state? Or California Make Allowances were higher than our  
22 current Make Allowances?

23 A. It would be hard to tease that out. I mean, your  
24 point about higher Make Allowances, I think we adjusted  
25 Make Allowances the last -- if I'm remembering correctly,  
26 so my memory may be fuzzy on this, but I remember we  
27 adjusted Make Allowances at a hearing in 2011 that was  
28 probably based on 2010 data, and we hadn't adjusted it



1 since then.

2 As somebody -- I think Ms. Hancock pointed out,  
3 there's a host of other things going on in California that  
4 probably had a -- have a bigger impact on decisions  
5 than -- than the Make Allowance.

6 And, you know, in particular the cheese plant that  
7 I know that ceased production of cheese, they were located  
8 in Southern California, and part of the issue there is the  
9 diminishing milk supply in that region and the higher cost  
10 of hauling in there, which makes it tough for a  
11 manufacturing plant to compete.

12 Q. Okay. I'll just note this is a request for at  
13 some point when perhaps IDFA puts together your official  
14 notice list, you cite the BLS California wage rate that  
15 you used, but if you could provide us with a --

16 A. Data link?

17 Q. Yes, that would be helpful to make sure we're  
18 looking at the same thing that you are looking at.

19 And on that wage rate that you used, because that  
20 was just for -- oh, gosh, I forget the term you used. It  
21 wasn't dairy specific I guess.

22 A. Correct. It was manufacturing wage rate.

23 Q. Okay. And you think -- I don't -- this is -- I --  
24 I don't know the answer to this question. I like to know  
25 my answers sometimes, but not this one.

26 Was that like a comparable position to what you  
27 find in dairy manufacturing plants? I mean --

28 A. Yeah.



1 Q. -- what does that encompass?

2 A. I don't know that it is the actual rate in those  
3 plants. But I do believe that changes in that rate,  
4 because of the competitive nature of the labor market,  
5 would be reflected in the changes in labor rates and dairy  
6 plants as well.

7 Q. And is the labor rate -- I know there's been some  
8 talk about it, but just try to make it a little bit  
9 clearer. That wage rate, does that, in your mind, account  
10 for efficiencies gained in labor that would also be  
11 reflective of plant investments at the time, so you need  
12 less labor to run your -- or you get more product out of  
13 your plant, maybe you invest it to your labor costs?

14 A. Yeah. So you're picking up with that model, you  
15 know, it's -- that's the difference between sort of an  
16 indexing approach, where you're just assuming, okay, we  
17 have got this cost factor that's going up, and so  
18 therefore, the cost associated with that factor is going  
19 to rise by the same amount.

20 The regression analysis, because it's regressing  
21 against the actual cost, is going to pick up those  
22 efficiencies over time. And I -- I don't know if I am  
23 answering your question.

24 Q. Sure.

25 A. If that was at least the start of the direction.  
26 Is that what you were asking?

27 Q. Yeah, sort of. I mean, we've heard a lot of  
28 discussion over the past few weeks about investments and



1 what decisions have been made to invest or not invest  
2 because of the -- attributable somewhat to some of the  
3 manufacturing -- well, to the manufacturing allowance that  
4 we currently have in the formulas. So I'm trying to see  
5 if somehow that -- whatever investments were made in  
6 California plants during that time, assuming there were  
7 some, that that's picked up in your cost estimates.

8 A. So it would not be picked up -- if it's happened  
9 since 2016, it would not be picked up.

10 Q. Okay. So does your model -- do you have the  
11 ability to calculate prediction intervals for your  
12 estimates? You gave us a number --

13 A. Sure.

14 Q. -- right, but somehow there's probably --

15 A. So --

16 Q. -- a range --

17 A. -- sort of a confidence interval on the forecast?

18 Q. Uh-huh.

19 A. The answer is there may be -- because of how the  
20 model is constructed, it's fairly easy to do a confidence  
21 interval on any of the individual regression models  
22 because you have got confidence intervals on each of the  
23 parameter estimates, and so you can go from there.

24 How you build that up to a total, I -- I would  
25 have to do a little more work to understand how to do that  
26 correctly, and I don't.

27 But I can tell you, you know, confidence intervals  
28 are oftentimes a function of -- you know, a function of



1 how much explanatory power is in the model, but also a  
2 function of the number of observations you have. So, you  
3 know, when I did my dissertation work, I had like 50 years  
4 of data, of here we have got 13, 14, 15, I don't know. So  
5 they would probably be pretty wide confidence intervals on  
6 the forecast.

7 Q. Okay. I know you cited in your testimony some  
8 other witnesses that have talked about their cost  
9 increases --

10 A. Uh-huh.

11 Q. -- to say that what you have -- the model has  
12 predicted is kind of within the range of what people have  
13 testified to.

14 Did you share your results with your member plants  
15 of Dairy Institute to see from their perspective if  
16 they -- the results are kind of what they see?

17 A. I have had some conversations, just -- you know,  
18 these are what the estimates are I'm coming in for; are  
19 they in the ballpark? You know, people I have asked if --  
20 nobody said, boy, you are really way off. But, again,  
21 that's not a -- that's not a -- what's the word --  
22 rigorous -- rigorous survey of the data. That's just from  
23 asking a few people. But, yeah, I haven't sent it out and  
24 asked for people to report back or anything like that.

25 Q. Okay. And you didn't get any notable feedback  
26 either then?

27 A. That -- that -- no.

28 MS. TAYLOR: Okay.



## 1 CROSS-EXAMINATION

2 BY MR. WILSON:

3 Q. Hello, Dr. Schiek. Todd Wilson, Dairy Programs.

4 A. Nice to see you, Mr. Wilson.

5 Q. Good to see you.

6 I'm going to read the question because it's  
7 probably better.

8 A. Okay.

9 Q. Looking at the regression results in Table 5 --  
10 I'm sorry -- down at the bottom of page 5, not the  
11 regression table -- on the bottom of page 5 on  
12 Exhibit 180, you describe including the Producer Price  
13 Index for intermediate goods.14 Since BLS publishes many different PPIs at  
15 different stages in the supply chain for different  
16 grouping of commodities, can you clarify which specific  
17 PPI you used in your analysis?18 A. This would be a higher level PPI, not a specific  
19 industry PPI. So it's an overall U.S. PPI for  
20 intermediate goods.

21 Q. Okay. Thank you. All right.

22 I got one more. Sorry.

23 A. So could I add on to my answer for that?

24 Q. Absolutely.

25 A. So my thinking there is that dairy plants are  
26 buying inputs that aren't -- not all of which are unique  
27 to the dairy industry. You know, they are buying  
28 packaging materials. They are buying, you know, certain

1 ingredients, maintenance and supply, equipment for the  
2 plant. And so they are probably procuring these things,  
3 you know, from vendors or manufacturers in other parts of  
4 the country. And therefore I thought that the more  
5 general number was appropriate for -- for that kind of --  
6 what I'm trying to represent, which is sort of the other  
7 cost materials and how those costs are changing.

8 Q. Yes. So when you -- can you provide the link --

9 A. Yes.

10 Q. -- official notice on that information?

11 Okay. One more question. On Table 3, page 9,  
12 there is a parameter with an estimate for spot electricity  
13 that's negative.

14 A. Yeah. Yes.

15 Q. Can you --

16 A. That's -- that was the result of the regression  
17 equation, which is not what you would expect, right?

18 And I think what we're -- what we found,  
19 generally, with utility cost model estimates is they had  
20 the poorest fit and, you know, behaved in -- you know,  
21 there's one where it behaved in a way that we didn't  
22 expect. I think it's a -- it's a combination of the  
23 amount of forward buying and hedging people do of costs.

24 I think I'm using an industrial electricity price,  
25 which a lot it would apply to a lot of plants. I do know  
26 that there are some dairy plants, some large dairy plants,  
27 that are in, for lack of a better term, metropolitan  
28 utility districts that have very different cost parameters



1 than the heavy industry in the rest of the state. So, you  
2 know, states -- the two big utilities are Southern  
3 California Edison and Pacific Gas and Electric, and I know  
4 there are some big dairy plants that operate in  
5 metropolitan utility districts that have very different  
6 rates.

7 CROSS-EXAMINATION

8 BY MS. TAYLOR:

9 Q. So for the lay listener --

10 A. Yeah.

11 Q. -- and me, who is also a lay listener, can you  
12 explain how to interpret that negative number?

13 A. I would -- I would basically interpret it as -- as  
14 that is the number that the model estimated as the best --  
15 as the parameter when you include electricity that would  
16 give you the best fit. So I think it's -- it's a -- it's  
17 a consequence of probably the variables I'm using in that  
18 particular case are not really good proxies, they are not  
19 the best proxies for electricity, for, example for dairy  
20 plants in California.

21 Q. Okay. So we have heard testimony kind of  
22 throughout this week and last about how 2022 is -- I don't  
23 know if I want to say an outlier. We don't know what  
24 normal is anymore. But with the supply chain issues and  
25 inflation, as you have spoken to yourself, do you see  
26 those things have moderated some? Should we look at 2022  
27 as an outlier and not necessarily want to bake that result  
28 into some Make Allowances that we would set for an





1 undetermined amount of time?

2 A. Well, we have some moderation. I think, you know,  
3 fuel prices have come down, and that's explained an awful  
4 lot of the reduction in the -- in the general headline  
5 numbers. I didn't see what the CPI was today. Maybe  
6 somebody saw that. I don't know whether it was up from  
7 last month in terms of increases but -- so -- so I don't  
8 know going forward. None of us have a great crystal ball.

9 Certainly inflation spiked in 2021 and 2022, and  
10 it's been coming down in '23, the rate of inflation  
11 anyway. I don't know that the price levels necessarily  
12 have been coming down, but the rate of inflation has.

13 The other thing I would point out -- and we used  
14 to look at this when we were at the CDFA hearings too, is  
15 that when you have gone a long time without an adjustment,  
16 there's been a shortfall in manufacturing costs relative  
17 to, you know, where the Make Allowance is for an extended  
18 period of time. And if -- if we were a little higher for  
19 a short period of time, that -- that may not be  
20 necessarily such a bad thing from a -- you know, allowing  
21 plants to get healthy and make the kind of investments  
22 they need.

23 I think, you know, the reality is we shouldn't --  
24 we shouldn't be updating Make Allowances once every  
25 15 years or whatever it is. We should have this  
26 discussion more regularly, I think, to keep things  
27 current. And, you know, that would be my solution. I  
28 don't know that I would say shy away from current costs



1 just because it might be a bad year. I think come back  
2 when the -- you know, some -- somebody should petition  
3 and ask for a hearing, you know, when things change and  
4 say, hey, we need to adjust this again.

5 Q. So speaking of inadequate Make Allowances as have  
6 been described in this hearing, can you speak about how  
7 your Dairy Institute members are coping with that? If  
8 they are so inadequate, how are they able to keep  
9 operating?

10 A. Well, generally, I think there are several things  
11 that can happen. If you have the ability to delay  
12 reinvestment -- I kind of look back. My -- my father and  
13 his brother grew up on a dairy farm, and I kind of looked  
14 at how they handled new equipment purchases. And the  
15 reality is if they could keep something running and  
16 keep -- you know, not have to buy the new equipment, they  
17 would do it as long as they could.

18 Q. Duct tape and baling wire?

19 A. Yeah, basically that's the analogy, right. So  
20 you -- you defer maintenance -- or you defer investment  
21 and just keep things going and hope at some point you will  
22 be able to upgrade. So that's one way to --

23 Q. For 15 years?

24 A. Yeah. Well, I don't -- I don't know for 15 years.  
25 Obviously, in California we did have some Make Allowance  
26 increases since then. But for the -- in terms of a lot of  
27 the specific strategies plants are doing in California to  
28 deal with that, I -- I don't know. We -- you know, we



1 just -- on cheddar, we don't have that many plants  
2 anymore. And on nonfat dry milk and butter, those are  
3 generally not members, those -- I don't have many of those  
4 in my membership.

5 Q. Okay.

6 MS. TAYLOR: I think that's it from AMS. Thank  
7 you.

8 THE WITNESS: Okay. Yep.

9 THE COURT: Redirect.

10 REDIRECT EXAMINATION

11 BY MR. ROSENBAUM:

12 Q. Just a few follow-ups.

13 On this question of whether 2022 was a year of  
14 relatively high inflation, okay.

15 A. Uh-huh.

16 Q. I mean, whether it was relatively high or not, the  
17 costs are what the costs were in 2022, correct?

18 A. Correct.

19 Q. I mean, and Federal Orders don't adjust based upon  
20 projections of future inflation, correct?

21 A. That's not been my understanding that they have  
22 ever done that.

23 Q. I mean, in other words, in order for the costs of  
24 manufacture to be less than as surveyed in 2022, you would  
25 have to actually have deflation, correct?

26 A. You would have to have deflation in those cost  
27 factors, right.

28 Q. Okay. So I mean, even though general inflation



1 may have dropped somewhat in 2023 compared to 2022,  
2 generally things are still more expensive in 2023 than  
3 they were in 2022, correct?

4 A. Yeah. I would say that's correct. And, you know,  
5 when you look at the trend lines, we generally don't see  
6 things like labor go backwards in terms of cost.

7 Q. Okay.

8 A. May get more efficiencies in a plant, but the  
9 trend line on labor cost is pretty consistently upward.

10 Q. So I want to understand a little bit more about  
11 the trend line. So you were -- you were -- when you're  
12 looking at the California data starting in twenty --  
13 strike that.

14 When you are looking at the California data that  
15 starts in 2002, which was your first year, through 2016,  
16 your -- the costs that the California Department of Food  
17 and Agriculture is calculating are based upon how many  
18 pounds of product you produced at what cost, correct?

19 A. Correct.

20 Q. That's how you get to a cost per pound, correct?

21 A. Correct.

22 Q. And if you have engaged in efficiencies during  
23 that 16-year period, then by 2016 you're going to have  
24 lower costs based upon those efficiencies. You may have  
25 higher costs based upon other things, but to the extent  
26 that there were efficiencies, you have picked that up,  
27 correct?

28 A. Yeah, I have.



1 Q. And so when you then use that data to project  
2 forward from 2016 to 2022, which is what you did, are  
3 you -- by using the 2002 through 2016 data to create your  
4 formulas, are you capturing that phenomenon?

5 A. So I think you are capturing the phenomenon. The  
6 question really comes is, you are picking up a rate of  
7 gain in efficiency, right, as part of -- during the sample  
8 period. So the only thing you wouldn't be picking up is  
9 if outside the sample period there was a change in that  
10 gain.

11 Q. But let's just be clear about that. As long as  
12 the trend in efficiency from 2016 through 2022 has been  
13 the same as it was from 2002 to 2016, you are going to  
14 have captured that, correct?

15 A. That would be accounted for, yes.

16 Q. It would only be if there were some substantially  
17 different kind of change in efficiency since 2016 that you  
18 would have missed that; is that fair?

19 A. I would say yes.

20 Q. And are you aware of some vast change that's  
21 happened since 2016 that is hugely different than the  
22 trend that existed from 2002 to 2016?

23 A. I am not.

24 Q. Now, you were asked some questions about --  
25 well -- and you were asked a number of questions about  
26 whether we should be using California data to set minimum  
27 milk prices. I mean, that's -- that's a bridge that USDA  
28 has crossed two or three times already, correct?



1           A.     Yes.  They have already used California data in  
2     constructing the Make Allowances.

3           Q.     Okay.  And we'll hear some more about that history  
4     tomorrow.  I won't try to recite it -- potentially  
5     tomorrow.  We'll see how fast we move.

6                     But the other topic I want to just cover quickly  
7     is, in terms of Dr. Stephenson's cost survey, there was  
8     some questions about, you know, more data is better than  
9     less data and, you know, sample size can make a difference  
10    and things of that nature, right?  Correct?

11          A.     Correct.

12          Q.     All right.  We'll have this exact testimony when  
13    Mr. -- when Mr. Brown testifies, but I just want you to  
14    assume these calculations are correct.

15                    But let me just start by saying did you -- did  
16    you -- were you here when I asked Dr. Stephenson how one  
17    would go about calculating the percentage of total cheddar  
18    cheese, whey, nonfat dry milk, and butter production in  
19    the United States, how one can calculate what percentage  
20    of that is covered by his survey?

21          A.     I'm not positive I was, actually.

22          Q.     Then no reason to rehearse that.

23                    Just take these numbers as what those -- that  
24    information establishes.  This will be the subject of  
25    testimony later.

26                    So for nonfat dry milk, assume with me that the  
27    plants that participated in the survey produce 91.2% of  
28    all nonfat dry milk produced in the country in 2022.



1 Okay? Do you have -- I mean, what would that mean to you  
2 as an economist as to the representativeness of the sample  
3 data?

4 A. That would be -- I would assume that would be very  
5 highly representative of the population as a whole.

6 Q. I mean, there's -- there's a survey and there's a  
7 census; is that a phrase people use in the --

8 A. Yeah.

9 Q. -- economic world? A census is where you cover  
10 everything, I guess?

11 A. Yes.

12 Q. I mean, 91% is sort of getting into census  
13 territory, isn't it?

14 A. It is.

15 Q. And let's take butter. Assume that  
16 Dr. Stephenson's 2022 cost survey included plants that  
17 collectively produced 80.1% of all the butter produced in  
18 the United States in 2022.

19 Now, it's not as high as 91, but -- but what would  
20 be your reaction to that in terms of the likelihood that  
21 this was reflective of the actual costs of producing  
22 butter in 2022?

23 A. I would assume it was pretty reflective.

24 Q. And for cheddar cheese and whey, the numbers are  
25 somewhat lower. Cheddar cheese is 55.6%. Whey is 50.8%.  
26 What is your general view as to those levels of the  
27 percentage of total production that is reflected in the  
28 plants that participated in the survey?



1           A.     I think I would also expect those to be pretty  
2 representative of the population as a whole.

3           MR. ROSENBAUM:   Your Honor, at this point I would  
4 just simply like to move my exhibits into evidence, which  
5 are Exhibits 180 through 195.

6           THE COURT:   Mr. Miltner has --

7           MR. MILTNER:   No objection.   Just additional  
8 questions.

9           THE COURT:   Let's -- well, okay.   I'll tell you  
10 what, let's take a break.   It's been quite a while.

11           Any objections to any of this exhibits coming into  
12 evidence?

13           Seeing none.   Let me get out my list.

14           Okay.   With that, Exhibit Numbers marked for  
15 identification as 180, 181, 182, 183, 184, 185, 186, 187,  
16 188, 189, 190, 191, 192, 193, 194, and 195, are all  
17 entered into the record of this proceeding.

18           (Thereafter, Exhibit Numbers 180 through 195  
19 were received into evidence.)

20           THE COURT:   Okay.   Let's -- ten minutes.   It is  
21 late in the day, ten minutes.   Let's come back at 4:15,  
22 and Mr. Miltner, it will be your turn.

23           (Whereupon, a break was taken.)

24           THE COURT:   Back on the record.

25           I understand that Mr. Miltner has waived any  
26 further questions of this witness.   So unless there are  
27 objections from someone, we'll let this witness step down  
28 from the stand.





1 Thank you, Doctor.

2 MR. ROSENBAUM: Your Honor, we would call as our  
3 next witness, Mr. James DeJong.

4 THE COURT: Raise your right hand.

5 JAMES DEJONG,

6 Being first duly sworn, was examined and  
7 testified as follows:

8 THE COURT: Mr. Rosenbaum, your witness.

9 DIRECT EXAMINATION

10 BY MR. ROSENBAUM:

11 Q. Good afternoon, Mr. DeJong. Can you please state  
12 your full name for the record and provide your mailing  
13 address, your business mailing address?

14 A. Sure. My name is James DeJong. And my mailing  
15 address for work is 121 4th Avenue South, Twin Falls,  
16 Idaho, 83301.

17 Q. And, Mr. DeJong, have you prepared two different  
18 written testimonies that you are going to deliver today?

19 A. Yes, or as much as I can.

20 MR. ROSENBAUM: Your Honor, I -- the first of them  
21 is labeled as IDFA Exhibit 22, and we would ask that that  
22 be marked with the next Hearing Exhibit number.

23 THE COURT: IDFA Exhibit 22 is marked for  
24 identification Exhibit 196.

25 (Thereafter, Exhibit Number 196 was marked  
26 for identification.)

27 MR. ROSENBAUM: And, your Honor, IDFA Exhibit 41,  
28 we would ask that to be marked as Hearing Exhibit 197.



1 THE COURT: So marked.

2 (Thereafter, Exhibit Number 197 was marked  
3 for identification.)

4 BY MR. ROSENBAUM:

5 Q. Mr. DeJong, can you please read Hearing  
6 Exhibit 196?

7 A. My name is James DeJong, and I am currently the  
8 Senior Director of Dairy Economics, Risk Management, and  
9 Sales Planning for Glanbia Nutritionals (GN) for short,  
10 whom I am representing today. I work out of GN's  
11 corporate office at 121 4th Ave South, Twin Falls, Idaho  
12 83301.

13 I have worked for GN the last five years. My main  
14 responsibilities include market and industry intelligence,  
15 milk pricing analysis, hedging dairy commodity price risk,  
16 and balancing our internal supply and demand for whey  
17 proteins. Prior to that, I worked for Hilmar Cheese for  
18 four and one-half years and at Rabobank for three years.

19 At Hilmar Cheese, I worked as their Dairy  
20 Economist, dairy commodity and energy price risk manager,  
21 and also as their Strategic Planner. For Rabobank, I  
22 worked for their Food and Agricultural Research and  
23 Advisory division as an Agricultural Analyst. There I  
24 specialized in dairy industry economics, general  
25 California agricultural economics, U.S. row crops, and  
26 economics of North American forest products. I have a  
27 bachelor's degree in social science and a master's degree  
28 in public administration from California State University



1 Stanislaus.

2 As to the background of our company, GN is part of  
3 Glanbia PLC, a global nutrition company based in Ireland.  
4 Glanbia PLC includes GN (business to business sales only),  
5 Glanbia Performance Nutrition (business to consumer brands  
6 such as Optimum Nutrition), and our Joint Ventures (which  
7 include Southwest Cheese and MW cheese/whey plants). You  
8 can see our basic company organization below.

9 I am here to represent GN and our 50% ownership  
10 interest in the two Joint Venture cheese/whey plants. Our  
11 partners in our Joint Venture plants, Dairy Farmers of  
12 America and Select Milk Producers, are not represented in  
13 this testimony.

14 GN is a diversified nutrition solutions company  
15 that specializes in custom pre-mix solutions, bioactive  
16 ingredients, flavors, micronutrients, plant-based  
17 nutrition solutions, bakery ingredients, as well as  
18 American-style cheeses and high concentrate whey proteins.

19 Specifically, to the dairy segment of our  
20 business, GN fully owns four dairy plants in Idaho that  
21 process a combined 12 million milk pounds a day and turn  
22 that milk into barrel cheese, block cheese, high  
23 concentrate whey proteins, proprietary protein blends and  
24 lactose. Our Idaho plants operate outside the Federal  
25 Milk Marketing Order (FMMO) system.

26 Our Joint Venture plants in New Mexico (FMMO 126)  
27 and Michigan (FMMO 33) process a combined 22 million  
28 pounds of milk per day and turn it into American-style



1 block cheese and high concentrate whey proteins. Our  
2 combined output between our fully-owned and Joint Venture  
3 plants makes us the largest American-style cheese  
4 manufacturer and the largest whey-based nutritional  
5 solutions provider in the US.

6 Further, although not all our plants fall within  
7 the FMMO marketing areas, we still have a substantial  
8 stake in the maintenance and proper functioning of the  
9 FMMO system. This is especially true in the case of the  
10 Class III milk price, on which my testimony will focus.

11 Our plants make the type of cheddar cheese  
12 represented in the Class III formula, compete locally and  
13 nationally with other dairy manufacturers that rely on the  
14 FMMO pricing system, and ourselves and our patron milk  
15 suppliers utilize the risk management tools that are  
16 linked to the FMMO pricing system.

17 Headline: Proposals 8 and 9: Make Allowances  
18 proposed by Wisconsin Cheese Makers Association and  
19 International Dairy Foods Association.

20 GN supports the Make Allowance proposals from  
21 Wisconsin Cheese Makers Association (WCMA) and the  
22 International Dairy Foods Association (IDFA). The  
23 WMCA (sic) and IDFA proposals use an average of the Dr.  
24 Schiek study (which uses the 2016 California Department of  
25 Agriculture audited manufacturing cost study adjusted with  
26 inflation indexes) and the last manufacturing cost survey  
27 from Dr. Mark Stephenson using 2022 plant survey data.

28 Why the WMCA/IDFA Make Allowance proposal should



1 be adopted:

2 We believe the data from these studies should be  
3 used because there is a higher degree of transparency, and  
4 USDA has precedent for using similar studies in past FMMO  
5 decisions. IDFA's testimony discusses past USDA precedent  
6 for using high quality and data driven research to  
7 establish Make Allowances.

8 Further, as the largest processor of cheddar  
9 cheese in the US, all five of our cheddar plants  
10 participated in the last 2022 Stephenson cost study, which  
11 includes our Joint Venture plants as well.

12 GN supports the \$0.0015 per pound marketing  
13 allowance cost addition:

14 GN supports the \$0.0015 per pound marketing cost  
15 addition to the WMCA and IDFA Make Allowance proposal. On  
16 one hand, marketing costs have risen like other costs due  
17 to inflation. On the other hand, one could also argue  
18 that industry consolidation has reduced the amount of  
19 resources needed to sell cheese domestically. In balance,  
20 we ask that the \$0.0015 per pound marketing cost be  
21 included in the final Make Allowance as it was in the  
22 previous FMMO Make Allowance decision.

23 Why Make Allowances need to be maintained:

24 GN believes FMMO Make Allowances must be  
25 maintained to reflect reality. The FMMO system relies on  
26 these Make Allowances to set minimum pricing and  
27 distribute pool revenues, while the industry uses these  
28 prices to make investment decisions, set the pricing of



1 milk, and are heavily used in CME and USDA risk management  
2 tools.

3           However, when these Make Allowances are not  
4 maintained, as they haven't been in 15 years, we can  
5 expect to see market distortions and further real-world  
6 variances versus the USDA announced Class prices.

7           Looking at USDA published data, we can see  
8 declining mailbox milk prices versus uniform milk prices  
9 at test (Figures 2 through 5). The analysis in these  
10 figures takes the USDA mailbox milk prices from four  
11 states/regions, then subtracts the order's uniform price  
12 at the order's weighted average milk components. The  
13 purpose of the analysis is to illustrate how actual  
14 producer milk prices have changed over time versus the  
15 regulated price at real world milk components.

16           For example, in Wisconsin the mailbox milk price  
17 from October 2008 to September 2010 averaged \$14.42 per  
18 hundredweight, while the uniform milk price at test (using  
19 the \$1.70 zone PPD) averaged \$13.54 per hundredweight.  
20 This equals an \$0.88 per hundredweight positive variance  
21 versus the uniform price at test.

22           However, from May 2021 to April 2023 (last  
23 available data), the Wisconsin mailbox price averaged  
24 \$21.78 per hundredweight while the uniform milk price at  
25 test (again using the \$1.70 zone PPD) averaged \$22.21 per  
26 hundredweight. This equals a \$0.43 per hundredweight  
27 negative variance versus the uniform price at test and a  
28 \$1.31 per hundredweight negative total swing over this



1 period.

2 What this data shows is that there is a "bumping  
3 up" of the mailbox price against FMMO uniform prices; in  
4 other words, the market is trying to take the actual pay  
5 price below the FMMO minimum price. That is a sign that  
6 the minimum price is too high, and that the price is too  
7 high in large part because of inaccurate Make Allowances.

8 While other factors, like higher milk hauling  
9 costs, changes in checkoff program amounts, or variances  
10 in milk components will cause noise in the analysis, the  
11 trendline is unmistakable.

12 Further, the other three regions analyzed (Figures  
13 3 through 5) that are inside FMMOs show the same pattern  
14 of collapsing milk premiums versus the FMMO uniform  
15 prices. We believe a good portion of this collapse is  
16 attributed to extremely outdated Make Allowances. There  
17 is a summary of the total swing in mailbox prices versus  
18 the uniform price at test for the four areas in the  
19 Appendix section.

20 Milk premiums take over when FMMO milk prices are  
21 below competitive levels:

22 We believe there is more industry risk when  
23 regulated milk prices are set too high versus too low.  
24 When the FMMO milk prices are set too low in a milk shed,  
25 historically speaking, market premiums over the Class III  
26 prices take hold.

27 Looking at Figures 3 through 5 again, in the early  
28 years following the 2008 Make Allowance change, mailbox



1 prices were relatively strong versus the uniform prices at  
2 test in multiple regions. In this case, dairy processors  
3 had extra margin over the FMMO Class prices that was then  
4 diverted to pay for premiums.

5 Given milk cooperatives control about 85% of all  
6 the milk in the U.S., this places them in an extremely  
7 strong position to bargain for premiums above the FMMO  
8 Class prices, providing enough value is being generated  
9 from dairy products in that milk shed.

10 If Make Allowances were set too high in some milk  
11 sheds, market principles will take over and premiums will  
12 again become common.

13 Importance of Make Allowances for pooling dollar  
14 distribution:

15 In the case of FMMO pooling revenue distribution,  
16 when the Class III and IV Make Allowances are not  
17 reflective of reality, a situation can be created where  
18 pool revenues are not distributed in a fair or economical  
19 justifiable manner.

20 For example, if the Class III Make Allowances were  
21 too low (creating an artificially high Class III price),  
22 but set too high for Class IV (creating an artificially  
23 low Class IV price), Class IV milk handlers would have an  
24 unfair advantage because pool dollars flow to the lowest  
25 Class value of milk.

26 In this case, the Class IV handlers could be  
27 financially strong while also pulling in extra pool  
28 revenue, while the Class III milk handler could be





1 struggling while not getting any pool revenue (or worse,  
2 paying into the pool). The opposite situation could exist  
3 between Class III and IV depending in which direction the  
4 Make Allowances were distorted.

5 In the end, the point proves USDA needs to  
6 maintain accurate Make Allowances to ensure the FMMO  
7 pooling system is functioning equitably for producers.  
8 Failing to correct Make Allowances with the best available  
9 data, or delaying their implementation, will create  
10 disorderly marketing.

11 Impact of higher manufacturing costs on GN:

12 GN's costs have gone up considerably since the  
13 Class III Make Allowances were last changed in 2008. Our  
14 Twin Falls, Idaho plant, which processes about 2.5 million  
15 milk pounds per day, is our best plant to compare costs  
16 over time since it only makes American-style cheese  
17 (mostly cheddar), does not dry any whey, and has been  
18 minimally changed over the years. Our other plants have  
19 seen major expansions or whey processing investments over  
20 the years that make them more difficult to compare versus  
21 2008.

22 For our Twin Falls, Idaho plant from 2008 to 2022,  
23 we have seen some costs like energy only go up slightly  
24 (lower natural gas cost combined with energy efficiency  
25 projects), items like direct labor and packaging go up  
26 about 30%, and some items have gone up considerably more,  
27 like plant insurance, which was up over 70%. Overall, we  
28 have seen total costs from 2008 to 2022 increase at a



1 similar rate as reflected in the Stephenson and Schiek  
2 cost studies.

3 Additionally, we have also seen higher costs arise  
4 on the regulatory and sustainability front. For example,  
5 regulatory costs related to the Food Safety Modernization  
6 Act have produced massive increases in testing and  
7 analysis requirements.

8 Sustainability-related costs have also  
9 skyrocketed. We have invested in more sustainable  
10 packaging, plant upgrades that reduce carbon output and  
11 waste, \$2.5 million per unit water polishers that allow  
12 water to be reused many times over (often multiple  
13 polishers are required per plant), and investment in  
14 personnel who monitor dairies and enforce on-farm  
15 sustainability requirements. It is extremely difficult to  
16 extract market premiums for our regulatory and  
17 sustainability efforts. It is often looked at as the cost  
18 of doing business today.

19 Many of our 2023 costs will be even higher than  
20 2022 given the persistent inflation in the broader  
21 economy. That includes items like labor, where we see  
22 fierce competition for workers with other manufacturers,  
23 but also the cost to replace dairy processing equipment.

24 We estimate the cost to build the 8 million milk  
25 pound per day MWC cheese and whey plant with our Joint  
26 Venture Partners, which was completed in late 2019 and  
27 early 2020, would have gone from about \$470 million  
28 originally to about \$600 to \$700 million if it was built



1 today. If \$650 million is used as the midpoint, this is a  
2 38% increase in just a few years. This increase in plant  
3 equipment costs is reflected in things like replacement  
4 silos, electric motors, water polishers, various  
5 electrical equipment, and countless other parts that keep  
6 a cheese plant running.

7 GN fights to keep manufacturing costs low:

8 While our manufacturing costs have undoubtedly  
9 increased over the years, we also go to extreme lengths to  
10 try to keep costs as low as possible. This includes  
11 negotiating with vendors and various suppliers to get the  
12 most competitive pricing, while also investing heavily in  
13 plant equipment and technology to control costs.

14 For example, since the last Make Allowance  
15 adjustment in 2008, we have spent countless millions of  
16 dollars on projects such as recovering biogas from lost  
17 milk components in wastewater, heat exchange systems that  
18 take cold water from the milk and use it to cool other  
19 systems in the plant, automation projects that reduce  
20 labor costs, and right-sizing of equipment (for example,  
21 doing analysis to determine the minimum pump size needed).  
22 Further, our newest Joint Venture Plant, MWC in Michigan,  
23 incorporates a lot of the latest efficiency learnings into  
24 its design.

25 New cheese plant investors working around  
26 regulated system:

27 Cheese processing growth outside of FMMO  
28 regulation is creating additional cheese capacity that



1 competes directly with manufacturers regulated under  
2 Federal Orders. These plants have been able to attract  
3 the milk needed at prices outside the FMMO minimums,  
4 making it harder for many regulated plants to compete for  
5 cheese sales at the price that generates margins  
6 sufficient to pay the regulated price. This can  
7 contribute to disorderly marketing where pooled plants  
8 would be at a financial disadvantage to those who don't  
9 pool or operate outside the system.

10 Cheese manufacturers cannot raise prices to  
11 recover losses:

12 For most industries, raising prices is one of the  
13 most common ways to offset higher costs. However, raising  
14 prices for dairy products that are reported in the NDPSR  
15 survey creates a feedback loop. For example, if over the  
16 course of a few years cheddar cheese manufacturers raised  
17 their overages versus the CME cheese price by \$0.01 per  
18 pound, this would then be fed back into the Class III  
19 protein price and increase the price of milk  
20 commensurately. In this case the manufacturer has not  
21 gained anything, but nonetheless must still increase their  
22 overage over the CME spot market or risk falling behind  
23 the NDPSR price in Class III.

24 Without Make Allowance increases, the only way for  
25 a manufacturer of NDPSR reported products to recover  
26 higher manufacturing costs is to pursue ruthless  
27 efficiency, look for opportunities outside the NDPSR  
28 reported products, look for escape valves out of the



1 Class III price, invest outside the FMMO regulated dairy  
2 industry, or invest outside of dairy.

3 Moving on to Proposal 7: Make Allowances proposed  
4 by National Milk Producers Federation.

5 GN supports the Make Allowance proposal brought  
6 forth by Wisconsin Cheese Makers Association and the  
7 International Dairy Foods Association because it is  
8 well-supported by studies (studies which I understand were  
9 shared before the start of this hearing).

10 In contrast, the National Milk Producers  
11 Federation (NMPF) proposal lacks transparency. While NMPF  
12 clearly acknowledges the need for updated Make Allowances  
13 in their petition, they offer no methodology to their  
14 approach other than to say their, "...Make Allowance  
15 increases represent a fair balance between the producer  
16 impact of higher Make Allowances and the processor impact  
17 of Make Allowances."

18 This statement, and similar ones later, imply they  
19 are asking USDA to ignore a scientific approach to setting  
20 minimum FMMO minimum prices and instead use what appears  
21 to be a politically negotiated number.

22 Since the Class III and IV minimum milk pricing  
23 series started in the year 2000, USDA has relied on  
24 empirical studies to set Make Allowances. Specifically,  
25 they have relied on audited manufacturing cost studies  
26 from the California Department of Agriculture (CDFA) and  
27 non-audited studies, which are similar to Dr. Stephenson's  
28 recent manufacturing cost studies.



1           Furthermore, the Make Allowances proposed by NMPF  
2 is even lower than from the last available audited CDFA  
3 study from 2016 for cheese (\$0.24 per pound proposed  
4 versus \$0.2454 per pound in CDFA 2016). Since 2016, we  
5 have nearly seven years of cheese manufacturing cost  
6 inflation that has not been accounted for.

7           To conclude this topic, we urge USDA to adopt the  
8 data driven approach to Make Allowance estimates as  
9 proposed by WMCA and IDFA.

10           Proposal 3: Elimination of cheddar cheese  
11 500-pound barrels from protein price.

12           GN opposes the elimination of 500-pound barrels  
13 from the protein price and maintains that the status quo  
14 is a better system. While we sympathize with the view  
15 that the unstable relationship between block and barrel  
16 prices in Class III have caused a variety of problems for  
17 the industry, removing the price series from Class III  
18 protein would create other, even greater problems.

19           First, moving Class III to a 100% block weighting  
20 would greatly complicate milk pricing for manufacturers  
21 that make barrel cheese. Barrels produced in the U.S. are  
22 almost always sold based on the CME spot barrel price,  
23 while Proposal 3 would essentially disconnect Class III  
24 milk pricing from the CME barrel (Figure 1).

25           The resulting disconnect between revenue and the  
26 Class III milk price could drastically increase margin  
27 volatility and ability to compete for milk - even for  
28 barrel manufacturers outside the FMMOs.



1           Our barrel plant in Gooding, Idaho, which is  
2 outside the FMMO system, frequently uses a basis to  
3 Class III to buy/sell milk for plant balancing purposes,  
4 while most milk handlers and dairy farmers also use  
5 Class III as a competitive benchmark in Idaho.

6           The removal of barrels from the protein price  
7 would essentially put barrel manufacturers and their milk  
8 suppliers on an island and disconnected from the Class III  
9 price surface. This would be a major strategic risk for  
10 our Idaho business, which produces a lot of barrel cheese.

11           While we realize the unpredictable relationship  
12 between block and barrel prices in Class III has created  
13 challenges in the industry, removing barrels from the  
14 protein formula will create more significant industry-wide  
15 challenges.

16           If this issue is going to be further explored, we  
17 believe it should be done outside the FMMO system. For  
18 example, there has been a discussion in the industry about  
19 eliminating the CME barrel market. Such a solution would  
20 negate the need to remove barrels from the NDPSR since  
21 barrels would likely become a reflection of the block  
22 market.

23           Proposal 4: Addition of 640-pound cheddar cheese  
24 blocks to protein price.

25           GN opposes the addition of the 640-pound blocks of  
26 cheese into the protein price. The first reason we oppose  
27 it is because we believe it will not add new information  
28 to the survey. In our experience, 640-pound cheddar



1 blocks are virtually always priced off a basis to the CME  
2 block cheddar price, so I would expect any NDPSR 640-pound  
3 cheddar survey to track virtually perfectly with the  
4 current NDPSR 40-pound block cheddar price.

5 The second reason we oppose adding 640-pound  
6 blocks to the Class III price is the risk CME would add a  
7 640-pound cheddar spot market, much like the current CME  
8 cheddar block and barrel spot markets. All NDPSR dairy  
9 markets currently have a corresponding CME spot market, so  
10 it is not a stretch to assume CME would also add a  
11 640-pound blocks.

12 The problem with a 640-pound CME block market is  
13 the fact there is a smaller pool of buyers and sellers  
14 versus the more liquid 40-pound block market on the CME.  
15 A small number of buyers and sellers could more easily  
16 sway a CME 640-pound block market in ways that are not  
17 helpful to the larger industry or dairy producers linked  
18 to Class III.

19 Basically, 640-pound blocks on the CME spot market  
20 could become "barrels 2.0" in the Class III price with  
21 unpredictable and volatile relationships to the current  
22 40-pound block price, which would then feed into the  
23 Class III protein formula. In future hearings,  
24 petitioners could be asking to take out 640-pound blocks  
25 from the Class III protein price for the same reasons we  
26 are discussing taking out barrels today.

27 In summary, we would ask USDA to reject  
28 Proposal 4.





1           Proposal 6: Addition of mozzarella to the protein  
2 price.

3           GN opposes the proposal to add mozzarella to the  
4 Class III protein price for several reasons. First, the  
5 mozzarella price would be difficult to incorporate into  
6 the Class III protein price formula. Mozzarella has very  
7 different fat, solids-nonfat, and moisture levels compared  
8 to a very standard cheddar cheese, which is the current  
9 foundation of the Class III protein formula.

10           To integrate mozzarella into the protein price  
11 would require a separate and unique protein formula that  
12 is weighted into the current cheddar-based protein  
13 formula. Depending on the weightings of cheddar versus  
14 mozzarella in a new NDPSR price survey, the protein  
15 formula would be constantly changing.

16           Second, mozzarella has many different  
17 specifications, some of which are made to order for  
18 specific customers. Unless one specification was  
19 identified as accurate to use in the protein formula, even  
20 more protein formulas would be needed to account for the  
21 different product compositions. In this case, USDA would  
22 need to survey a broad spectrum of the mozzarella price  
23 surface and weight many different protein formulas, that  
24 fluctuate with surveyed weightings, to get an accurate  
25 price. Chaos would ensue.

26           In addition, for the current Class III and IV  
27 Make Allowances from the 2007 decision, the CDFA  
28 Make Allowances data sets and the 2019 and 2022 Stephenson



1 studies only use cheddar cheese in their analysis. A new  
2 robust cost study would need to be created for mozzarella  
3 and its many variations before it could be integrated into  
4 a new Class III protein price formula. This would be very  
5 challenging from a time perspective to integrate into the  
6 Final Decision since the petitioners have presented no  
7 such study.

8 Further, the latest cheddar Make Allowance data  
9 sets have a certain level of history and trust built into  
10 them which makes them easier to sense check. A new  
11 mozzarella study would probably need to be audited, like  
12 the past CDFA cheddar studies, to create some level of  
13 confidence in the industry.

14 Lastly, the petitioners imply there are lavish  
15 profits associated with the production and sale of  
16 mozzarella. Specifically, they point to a competitive  
17 USDA bid for consumer packaged mozzarella string cheese,  
18 which was awarded at \$3.56 to \$3.89 per pound as evidence  
19 of excess profits.

20 The first issue is that this was a solicitation  
21 for packaged consumer product, not for FOB bulk wholesale  
22 product, as is collected through the NDPSR for milk  
23 pricing. As we know, there can be large price differences  
24 between bulk commodity wholesale products and consumer  
25 packaged products.

26 The second issue is that, upon searching for  
27 generic brand mozzarella string cheese online for pickup  
28 at a local Kroger, at the time of this writing, the price



1 was \$4.49 per 12 ounce package (\$5.99 per pound). USDA  
2 appears to have gotten a bargain.

3 Third, cheese makers are smart for the most part,  
4 so if there were extreme profits associated with  
5 mozzarella production, huge amounts of investment would  
6 follow. Along these lines, there are already cheese  
7 makers with plants that can flex production between  
8 cheddar and mozzarella to maximize profits.

9 Based on our experience watching markets, these  
10 manufacturers do flex their production based on expected  
11 returns. Overall, mozzarella does not appear to be as  
12 lucrative as the petitioners claim and adding it into the  
13 Class III protein price would create chaos.

14 We ask USDA to reject this proposal.

15 Proposals 10 and 11: Increase butterfat recovery  
16 in Class III to 93% and eliminate Class III farm-to-plant  
17 shrink.

18 GN opposes the proposed increase in butterfat  
19 recovery and elimination of farm-to-plant shrink. We  
20 support the status quo until audited plant cost studies  
21 can be completed that show real world yields, shrink, and  
22 dairy solids recovery. This issue is very complex with  
23 broad ranges for fat recovery in the industry based on  
24 plant age and processing techniques.

25 While in our experience many modern plants can  
26 achieve 93% cheddar fat recovery (as the petitioner  
27 contends) and probably see relatively low farm-to-plant  
28 shrink (but not 0%), we believe the proposals only focus



1 on price-enhancing aspects of the Class III formula while  
2 ignoring the parts that overvalue milk within Class III.

3 For example, the current Class III formula  
4 incorrectly assumes all excess fat from the cheese making  
5 process is recovered. Specifically, at 2.9915% protein  
6 and 3.5% fat (standard Class III test), the current  
7 formula stipulates 90% of fat goes towards cheese making,  
8 with the remaining 10% being recovered as sweet cream,  
9 which is valued using the NDPSR Grade AA butter price.  
10 The 90% cheese fat recovery plus the 10% sweet cream fat  
11 recovery add to 100% recovery.

12 The first problem here is that there is no such  
13 thing as a lossless manufacturing system. All plants lose  
14 milk solids, which in our case go into wastewater (and  
15 often recovered as biogas). While we do not measure  
16 farm-to-plant losses, for simplicity, we do measure total  
17 losses from farm through our entire manufacturing system,  
18 primarily through the measurement of milk solids in our  
19 wastewater.

20 Even with highly efficient plant equipment and  
21 mostly full milk tanker loads, in our experience modern  
22 cheese plants are expected to lose about 1.5% of the  
23 purchased milk solids.

24 Specifically for fat, about 1.5% of farm test fat  
25 ends up in wastewater primarily because of equipment  
26 clean-outs and the milk ultrafiltration process prior to  
27 entering the vat. This lost fat is completely  
28 unmarketable. To quantify the impact to Class III at



1 standard components (2.9915% protein, 3.5% fat), using  
2 \$2.3475 per pound butter (the same ten-year markets as  
3 used in the petitioner's analysis), and the current  
4 Make Allowance and butter yield factors, this loss would  
5 equal \$0.14 per hundredweight of milk (see Figure 6).

6 The second problem is that the Class III formula  
7 values the remaining 10% of the fat not going into cheese  
8 (which is called whey cream) using the NDPSR Grade AA  
9 butter price. Per USDA regulations, butter with a whey  
10 flavor would be assigned as Grade B butter. As such, we  
11 see about 20% discounts or more for whey fat versus the  
12 Grade A sweet cream due to its limited marketability.  
13 This discrepancy can easily overvalue Class III fat  
14 another \$0.17 per hundredweight (see Figure 6).

15 Further, included in Figure 7 is an algebraically  
16 simplified version of the current Class III protein price  
17 and fat value explanation that may make this topic easier  
18 to understand.

19 In summary, we urge USDA to reject Proposals 10  
20 and 11 regarding cheese fat retention and farm-to-plant  
21 shrink. The confounding factors identified above would  
22 decrease Class III by a combined \$0.31 per hundredweight  
23 versus the \$0.12 per hundredweight increase Proposals 10  
24 and 11 would bring (using the petitioner's ten-year  
25 average market analysis).

26 Given the vast complexity of these issues,  
27 differences in plant equipment and operations, and the  
28 fact critical parts of the Class III formula overvalue



1 milk, we should wait for a USDA audited cost study to be  
2 completed so we can accurately measure real world yield  
3 factors across a variety of plants.

4 Q. I somewhat hate to ask you to do this, but could  
5 you please turn to your other exhibit, Hearing  
6 Exhibit 197, and please read that into the record. It is  
7 only three pages, so hopefully not too hard to do that as  
8 well.

9 You don't have to introduce yourself.

10 A. Thank you. Thank you.

11 USDA should not delay FMMO reform due to risk  
12 management.

13 NMPF and IDFA agree that timely increases in  
14 Make Allowance are needed:

15 Petitions and testimony coming from both the  
16 National Milk Producers Federation (NMPF) coalition and  
17 the International Dairy Foods Association (IDFA) coalition  
18 have made it abundantly clear that:

19 (1) Outdated Make Allowances are a source of  
20 disorderly marketing;

21 (2) There is an urgent need for reform.

22 Specifically, NMPF states in their petition that,  
23 "There are consequences to setting Make Allowances too low  
24 relative to the actual cost of manufacturing under a  
25 system of PPFs. Inadequate Make Allowances challenge  
26 manufacturing operations' abilities to pay minimum  
27 announced milk prices and still operate their facilities  
28 at a reasonable rate of return. This discourages the



1 plant investment needed to provide market demand on a  
2 daily, seasonal, and annual basis."

3 Further, NMPF quotes USDA in its 1999 Final  
4 Decision on FMMO reform in saying, "The importance of  
5 using minimum prices that are market-clearing for milk  
6 used to make cheese and butter/nonfat dry milk cannot be  
7 overstated. The prices for milk used in these products  
8 must reflect supply and demand and must not exceed a level  
9 that would require handlers to pay more for milk than  
10 needed to clear the market and make a profit."

11 Dairy cooperative members have also spoken to the  
12 need for urgent action. Rob Vandenheuvel of CDI, in his  
13 written testimony, noted, "The issue of establishing  
14 appropriate manufacturing cost allowances, hereafter  
15 Make Allowances, in the Federal Order formulas is of  
16 critical importance to CDI..."

17 He further noted, "...the immediate adjustments  
18 reflected in Proposal Number 7 in this hearing process are  
19 also a critical need for the industry. The risk of  
20 inaction or delayed action is simply too great to put the  
21 issue off any further."

22 Other witnesses, such as Karl Rasch of Michigan  
23 Milk Producers Association in his written testimony, also  
24 acknowledged the need for "urgent" action.

25 USDA has been telegraphing for years reform could  
26 be coming.

27 USDA has changed FMMO regulation and pricing  
28 formulas multiple times over the decades. With USDA



1 commissioning the 2021 Stephenson Cost Study, which  
2 collection efforts began in earnest in 2020, should have  
3 clued in market participants that change could be coming.

4 Further, the existence of this hearing, and a  
5 likely Final Decision roughly not expected until late  
6 2024, should act as another indicator for market  
7 participants that risk factors are changing.

8 Stakeholders acknowledge this. In the Chicago  
9 Mercantile Exchanges (CME) last annual Form 10-K filing,  
10 which provides a comprehensive view of a publicly traded  
11 business financial condition, they specifically  
12 acknowledge regulatory change is a risk for their business  
13 model.

14 CME crush traders/arbitrage traders will adjust  
15 their models to deal with Class III/IV change risk. So  
16 called "crush traders" or "arbitrage traders" will often  
17 take short or long positions in cheese, whey, butter,  
18 NFDM, Class III milk, and Class IV milk derivatives to  
19 profit off the mathematical relationships.

20 For example, if the combination of selling \$1.21  
21 NFDM futures and \$2.20 butter futures created an implied  
22 Class IV futures price of \$17.47 per hundredweight, but  
23 the Class IV futures could be bought at \$17.35 per  
24 hundredweight, an arbitrage trader could execute these  
25 available derivatives to lock in a \$0.12 per hundredweight  
26 profit. Whether the market goes up or down, their margin  
27 is secure as long as the milk formula remains constant.  
28 The same principles apply to Class III and its market





1 components.

2 If, for example, Make Allowances were to change,  
3 the relationship between the market prices and the milk  
4 prices would also change. In this case, the arbitrage  
5 traders would change their buy/sell formulas to reflect  
6 the IDFA or NMPF Make Allowance changes for the beginning  
7 of 2025, or near that time period.

8 The Make Allowances they would choose in their  
9 models (IDFA vs. NMPF) would depend on what gave them the  
10 larger margin cushion depending on what side of the trade  
11 they were on.

12 Given the Make Allowances proposed by IDFA 2025  
13 and the NMPF only differ by \$0.19 per hundredweight for  
14 Class III milk and \$0.15 per hundredweight for Class IV  
15 milk, this should give arbitrage traders a reasonable  
16 level of confidence to adjust their risk models  
17 accordingly. While USDA could technically set  
18 Make Allowances substantially outside what the major  
19 industry groups are petitioning for, the chances seem low.

20 The dairy industry can hedge with individual  
21 commodities, not just Class III and IV milk derivatives.

22 In a worst case where dairy producers, for  
23 example, were having a hard time finding liquidity to sell  
24 Class III or IV milk futures or options due to lack of  
25 arbitrage trader's liquidity, they could also hedge with  
26 individual commodity prices directly.

27 In fact, GN's Idaho direct ship producers  
28 typically hedge directly by selling CME CSC cheese futures



1 (settles to NDPSR cheese price). Given the cheese price  
2 is typically the vast majority of their milk pay price,  
3 the hedges are effective. This allows them to correlate  
4 their mailbox price to the CME derivative regardless of  
5 Make Allowance changes. Producers in different orders can  
6 hedge with more NFDM, butter, or dry whey to reflect their  
7 mailbox milk price.

8 Figures 1 through 3 show the USDA mailbox milk  
9 price correlations for risk management for individual  
10 dairy commodities versus hedging the Class III and IV milk  
11 prices. The analysis shows that effective hedges can be  
12 created using only the commodity futures/options. Risk  
13 management brokers or the producer's milk handler can  
14 easily provide guidance on appropriate weightings and  
15 volumes of the commodities the dairies should hedge with.

16 CME makes money by transaction counts, is  
17 sensitive to needs of arbitrage trading community.

18 One reason CME's testimony is sensitive to  
19 "liquidity providers" is due to the amount of fee revenue  
20 they generate. In their last Form 10-K filing, CME  
21 states, "Our revenue is substantially derived from fees  
22 for transactions executed and cleared in our markets."

23 Given that crush traders are taking multiple parts  
24 of dairy markets and figuratively "crushing" them together  
25 requires multiple transactions to accomplish. For  
26 example, crushing a Class III milk contract could involve  
27 buying a Class III milk contract and selling cheese, dry  
28 whey, and butter derivatives at the same time. This is



1 four transactions the CME benefits from. For dairy  
2 farmers managing their risk using only cheese derivatives,  
3 or maybe only one or two additional commodities, there are  
4 less transactions involved.

5 While this section of the testimony is not meant  
6 to say CME is nefarious for charging for their valuable  
7 services, or that CME market liquidity is not very  
8 important for the industry, it is meant to point out their  
9 interests are not always aligned with the broader dairy  
10 industry.

11 Conclusion: We urge USDA to not delay reform  
12 implementation due to risk management concerns. The  
13 industry knows change is coming, within a reasonable level  
14 of certainty in scope, and dairy producers should still be  
15 able to hedge. The CME's concerns about liquidity impacts  
16 are worth noting, but their concerns are not necessarily  
17 rooted in the health of the broader industry.

18 If USDA ultimately decides to delay the  
19 implementation, GN would support skipping the IDFA  
20 proposed four-year phase-in approach to Make Allowance  
21 reform and instead move straight to the maximum 2028  
22 proposed levels.

23 That concludes my testimony.

24 MR. ROSENBAUM: Your Honor, I may have one or two  
25 questions, but it's -- we're after five o'clock, so I  
26 would suggest we break for the day and start tomorrow  
27 morning.

28 THE COURT: Yeah, I think so. We'll start with



1 you with this witness and then have cross-examination.

2 Let's go off the record.

3 (Whereupon, the proceedings were concluded.)

4 ---o0o---

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28



1 STATE OF CALIFORNIA )  
 ) SS  
 2 COUNTY OF FRESNO )

3

4 I, MYRA A. PISH, Certified Shorthand Reporter, do  
 5 hereby certify that the foregoing pages comprise a full,  
 6 true and correct transcript of my shorthand notes, and a  
 7 full, true and correct statement of the proceedings held  
 8 at the time and place heretofore stated.

9

10 DATED: October 10, 2023

11 FRESNO, CALIFORNIA

12

13

14

15

16 MYRA A. PISH, RPR CSR  
 17 Certificate No. 11613

18

19

20

21

22

23

24

25

26

27

28



	<b>\$</b>	<b>\$0.2521</b> 3640:12	<b>\$650</b> 3718:1	<b>116%</b> 3684:16
		<b>\$0.2573</b> 3640:11	<b>\$700</b> 3717:28	<b>12</b> 3509:2,4,12 3510:25 3511:12,28 3512:11 3516:9 3548:12 3553:10 3561:24 3588:25,27 3612:20 3633:9 3660:5 3710:21 3726:1
<b>\$0.0015</b> 3712:12,14,20		<b>\$0.26</b> 3567:16,18	(	<b>12%</b> 3565:25
<b>\$0.01</b> 3719:17		<b>\$0.265</b> 3606:16	(1) 3729:19	<b>12-month</b> 3653:22
<b>\$0.0152</b> 3512:14		<b>\$0.2650</b> 3666:11	(2) 3729:21	<b>121</b> 3708:15 3709:11
<b>\$0.016</b> 3683:4,17		<b>\$0.2678</b> 3660:19	-	<b>125%</b> 3682:23 3683:10
<b>\$0.0269</b> 3561:28		<b>\$0.27</b> 3640:9	---o0o--- 3613:26 3735:4	<b>126</b> 3610:28 3710:26
<b>\$0.0283</b> 3665:21		<b>\$0.2707</b> 3660:15	--you 3648:5	<b>126,906,009</b> 3608:26 3609:5, 16
<b>\$0.03</b> 3625:6,9 3638:24 3640:10 3663:15,17 3664:9, 18,20		<b>\$0.275</b> 3509:9 3565:23	<b>0</b>	<b>13</b> 3489:1 3560:23,25 3561:5,17 3588:18 3597:3 3608:9,15,16,18,25,26 3609:5,16 3611:3,8 3612:20 3614:1 3696:4
<b>\$0.035</b> 3509:7,9		<b>\$0.2750</b> 3594:16	<b>0%</b> 3726:28	<b>14</b> 3509:3 3588:19,27 3589:21 3616:1 3636:1 3696:4
<b>\$0.0392</b> 3562:2		<b>\$0.2848</b> 3567:17	<b>0.0004</b> 3680:13	<b>14th</b> 3535:24 3582:15,21
<b>\$0.0569</b> 3512:23		<b>\$0.293</b> 3565:28 3606:22	<b>0.0008</b> 3681:6	<b>15</b> 3499:23 3530:3,10 3558:9,12 3559:12 3577:1 3588:25,26,27 3599:21 3600:3 3616:6,7 3636:19 3696:4 3700:25 3701:23,24 3713:4
<b>\$0.0611</b> 3663:23 3665:20		<b>\$0.2933</b> 3594:16 3666:12	<b>0.0049</b> 3680:5	<b>15%</b> 3509:26
<b>\$0.0618</b> 3562:1		<b>\$0.30</b> 3639:17 3640:10	<b>0.0094</b> 3681:9	<b>15-minute</b> 3546:5
<b>\$0.0674</b> 3685:1		<b>\$0.31</b> 3728:22	<b>0.0116</b> 3680:1	<b>15-year</b> 3559:18
<b>\$0.09</b> 3668:8		<b>\$0.3176</b> 3502:1	<b>0.0408</b> 3681:4	<b>153</b> 3530:28
<b>\$0.10</b> 3638:27		<b>\$0.336</b> 3567:19	<b>0015</b> 3589:25	<b>156</b> 3541:23,25 3617:10,12 3621:11 3646:3,6,8,10 3653:8,9,14,15 3688:5,7,17, 18
<b>\$0.12</b> 3728:23 3731:25		<b>\$0.3361</b> 3567:15	<b>0049</b> 3638:11,12 3680:9	<b>158</b> 3537:17,21,23 3538:1,4, 17 3539:26 3541:26,28 3585:3
<b>\$0.14</b> 3728:5		<b>\$0.3952</b> 3567:17	<b>06</b> 3593:21 3602:17 3606:7	<b>16</b> 3616:11 3636:21 3658:28
<b>\$0.141</b> 3606:18		<b>\$0.43</b> 3713:26	<b>06/19</b> 3605:5	<b>16-year</b> 3703:23
<b>\$0.1411</b> 3501:25		<b>\$0.88</b> 3713:20	<b>07</b> 3588:9	<b>16th</b> 3532:8,23 3533:27 3534:1
<b>\$0.15</b> 3732:14		<b>\$1.21</b> 3731:20	<b>1</b>	<b>17</b> 3616:16 3636:23,24 3685:7 3688:17
<b>\$0.158</b> 3606:12,13		<b>\$1.31</b> 3713:28	<b>1</b> 3503:4,6,12,16 3541:22,25 3560:27 3605:3 3633:14,17, 19 3635:16 3721:24 3733:8	<b>17.5%</b> 3512:28 3513:8,12 3515:15 3686:18
<b>\$0.166</b> 3606:22		<b>\$1.70</b> 3713:19,25	<b>1,266</b> 3494:19	<b>175</b> 3572:19
<b>\$0.17</b> 3728:14		<b>\$13.54</b> 3713:19	<b>1.5%</b> 3727:22,24	<b>176</b> 3557:7 3592:22 3605:2 3612:28 3613:4,6
<b>\$0.18</b> 3606:19		<b>\$14.42</b> 3713:17	<b>10</b> 3498:19 3503:4,6,12,16, 24 3558:12 3565:18 3596:7 3615:12 3632:6 3654:10 3726:15 3728:19,23	
<b>\$0.19</b> 3732:13		<b>\$15</b> 3648:10	<b>10%</b> 3498:10 3637:13,15,16, 17 3674:21 3675:15,17 3676:7 3727:8,10 3728:7	
<b>\$0.1937</b> 3684:28		<b>\$15.50</b> 3648:11	<b>10-K</b> 3731:9 3733:20	
<b>\$0.197</b> 3606:16		<b>\$17.35</b> 3731:23	<b>100%</b> 3685:23 3686:7,8 3721:19 3727:11	
<b>\$0.2154</b> 3565:24		<b>\$17.47</b> 3731:22	<b>10:00</b> 3546:6	
<b>\$0.2193</b> 3661:2		<b>\$2.20</b> 3731:21	<b>11</b> 3587:28 3615:17 3632:15 3726:15 3728:20,24	
<b>\$0.2201</b> 3661:2		<b>\$2.3475</b> 3728:2	<b>11.1%</b> 3516:3,9	
<b>\$0.2201</b> 3661:2		<b>\$2.5</b> 3717:11		
<b>\$0.233</b> 3565:28		<b>\$21.78</b> 3713:24		
<b>\$0.2395</b> 3661:5		<b>\$22.21</b> 3713:25		
<b>\$0.24</b> 3721:3		<b>\$3.56</b> 3725:18		
<b>\$0.2447</b> 3661:5		<b>\$3.89</b> 3725:18		
<b>\$0.2454</b> 3721:4		<b>\$4.49</b> 3726:1		
<b>\$0.247</b> 3606:12		<b>\$470</b> 3717:27		
<b>\$0.2476</b> 3567:5		<b>\$5.99</b> 3726:1		
		<b>\$600</b> 3717:28		



177 3493:17 3560:23,26 3612:28 3613:4,6	<hr/> <b>2</b> <hr/>	13,16 3692:1 3695:9 3703:15,23 3704:2,3,12,13, 17,21,22 3711:24 3721:3,4	3717:19
178 3489:11 3493:13,14,17, 19 3561:1 3595:27 3608:13 3612:28 3613:4,7	2 3503:17,21 3613:16 3614:12 3619:18 3636:25 3642:8 3660:3 3713:9	2017 3638:8,13 3639:11	2024 3731:6
179 3532:4,5,11 3569:5 3574:24 3582:11,17	2% 3548:27	2018 3638:14 3661:24 3692:15	2025 3732:7,12
18 3616:21	2.0 3723:20	2019 3494:19 3499:13 3501:9,23 3583:6 3593:21 3594:9 3605:7,13 3606:25 3640:11 3661:19,25 3717:26 3724:28	2026 3536:23,25
18% 3687:15	2.5 3716:14	2020 3560:5 3618:23 3717:27 3731:2	2028 3734:21
18.66 3639:13	2.9915% 3727:5 3728:1	2021 3490:27 3495:19 3496:11 3497:12,19 3498:22 3499:24,26 3500:17 3501:17 3502:14,16 3504:13 3505:28 3506:4,10,13 3520:12 3527:1 3528:23,24 3530:26 3531:3,14 3533:26 3536:21 3537:3,16 3539:10,24 3540:5,11 3543:12 3550:3,6, 8,11 3563:12 3564:8 3565:24 3566:9,16 3567:4 3568:12,19 3583:6 3585:3 3588:6 3596:11,12 3598:13, 15 3602:19 3640:20 3654:21 3660:14 3661:16 3664:7 3665:16,19 3666:10,16 3668:8 3673:3 3700:9 3713:22 3731:1	2022 3499:10 3588:11 3591:13 3594:14 3595:17 3599:25 3600:9 3602:19 3700:10
18.68 3683:10	20 3545:28 3558:12 3588:17 3617:3 3639:19 3668:14	2022 3499:13 3506:27 3525:19 3533:26 3592:11,16 3594:9 3603:6 3605:18,20, 27 3606:5 3607:8,9,14 3623:12,14 3638:1,8,27 3639:11,16 3640:6,20 3641:4,11,12,14 3644:7,8 3673:17 3699:22,26 3700:9 3702:13,17,24 3703:1,3 3704:2,12 3705:28 3706:16, 18,22 3711:27 3712:10 3716:22,28 3717:20 3724:28	22 3592:19,27 3606:2 3644:7 3708:21,23 3710:27
180 3614:17,18 3642:9 3660:1,2 3674:17 3697:12 3707:5,15,18	20% 3601:25 3658:27 3659:1 3686:26 3728:11	2023 3489:1,12 3490:27 3493:16 3495:12 3498:23 3499:24,25 3500:6,17,26 3502:14 3504:14 3505:8 3506:1,10,14,15 3520:12 3525:2 3527:1 3528:11,22 3529:18 3530:25 3531:4,5 3532:8,24 3533:7 3534:7,11 3535:18 3539:2,4,6,9,16,18 3545:18 3550:2,10 3552:5, 11 3563:10 3564:8 3565:18, 22 3566:10,17 3567:6 3568:11,25 3582:15,21 3583:2 3586:6 3588:2 3594:16 3595:27 3608:14 3614:1 3654:22 3663:23 3665:14 3667:25,27 3668:9 3673:3,8 3703:1,2 3713:22	22nd 3689:7
181 3614:24,26,27 3621:9 3707:15	20-some 3582:18		23 3499:10 3588:11 3591:13 3594:14 3595:17 3599:25 3600:9 3602:19 3700:10
182 3615:2,3,5 3707:15	2000 3720:23		23.40 3683:10
183 3615:8,10 3707:15	2002 3621:16 3622:19,21 3625:15 3626:6,7,12,22 3631:12 3632:27 3637:25 3658:18 3686:17 3703:15 3704:3,13,22		24% 3606:10
184 3615:13,15 3707:15	2003 3626:17,19 3637:25 3658:19 3661:13 3691:4		24.432 3677:3
185 3615:17,19 3707:15	2005 3631:20 3647:23		25% 3547:10 3687:7,8
186 3615:21,23 3707:15	2006 3526:26 3527:19 3536:24,26,28 3550:2,27 3588:9 3592:27 3593:26 3605:12,20 3606:4 3607:9, 10,14 3622:25 3638:28 3639:5,13 3641:4,12 3647:21,24 3656:7,26 3658:28 3671:8 3689:1,5,7, 19		25-kilogram 3542:16
187 3615:25,27 3707:15	2007 3499:13 3593:15 3641:14 3647:23 3671:8 3689:2 3724:27		250 3541:15
188 3616:2,4 3707:16	2008 3525:26 3592:24 3593:8,10 3605:7 3632:10 3641:11 3671:8 3713:17 3714:28 3716:13,21,22,28 3718:15		25th 3561:11
189 3616:7,9 3707:16	2009 3632:10		26 3489:12 3508:20 3511:5
19 3592:27 3606:7 3616:26 3655:27 3676:25	2010 3692:28 3713:17		26.78% 3660:19
19% 3509:23	2011 3632:27 3692:27		27 3490:19 3560:25 3588:14
19.88 3639:14	2012 3633:1		2707 3660:17
190 3616:12,14 3707:16	2015 3646:3		29 3560:28
191 3616:17,19 3707:16	2016 3621:16,21 3623:10 3625:16 3626:6,17,20,22 3631:12 3637:25,26 3638:5 3639:8 3650:12 3653:22 3655:14,19 3656:7,12,26 3658:19 3661:13 3673:22 3688:7 3690:13,22 3691:2,3,		2:51 3668:18
192 3616:22,24 3707:16			<hr/> <b>3</b> <hr/>
193 3616:27 3617:1 3707:16			3 3503:21 3509:12 3525:9 3531:2 3536:21 3537:18 3538:14 3636:24 3646:23,24 3680:1,4 3681:4 3688:11,14, 16 3698:11 3714:13,27 3721:10,23 3733:8
194 3617:4,6 3621:10 3646:7 3653:7,11 3707:16			3.5% 3727:6 3728:1
195 3617:19,21 3642:14 3655:23,26 3659:21 3707:5, 16,18			30 3516:9 3545:28 3596:7 3608:10
196 3708:24,25 3709:6			30% 3716:26
197 3708:28 3709:2 3729:6			33 3537:19 3710:27
1982 3620:9			33.3% 3687:2
1989 3622:9			34.7% 3687:4
1997 3618:11,25			360-degree 3652:6
1999 3730:3			38% 3718:2
1:05 3613:24			



<b>4</b>	<b>59.4%</b> 3641:6	<b>83301</b> 3708:16 3709:12	<b>accelerating</b> 3661:26
<b>4</b> 3493:14,19,20 3499:6 3529:5,28 3531:2 3539:9,26 3585:8 3722:23 3723:28	<b>5a</b> 3656:4	<b>84.4%</b> 3684:20	<b>accept</b> 3507:5 3578:14
<b>4%</b> 3525:9	<b>6</b>	<b>85%</b> 3545:25 3609:21 3715:5	<b>accepted</b> 3547:14 3646:16
<b>40</b> 3613:16 3617:18	<b>6</b> 3503:22 3506:17 3557:7, 12,13 3724:1 3728:5,14	<b>9</b>	<b>access</b> 3534:26 3535:3 3553:21 3556:25
<b>40%</b> 3587:23	<b>6%</b> 3565:21	<b>9</b> 3507:3 3615:7 3674:16 3679:28 3698:11 3711:17	<b>accomplish</b> 3733:25
<b>40-pound</b> 3540:16,25 3541:5 3544:21,23,28 3545:1 3585:9 3723:4,14,22	<b>6.1%</b> 3562:28	<b>90</b> 3634:10	<b>account</b> 3508:5 3519:11 3520:4 3525:1 3558:24 3628:12 3630:15 3652:3,25 3658:12,13 3662:6,11,13 3687:23 3690:15 3694:9 3724:20
<b>40s</b> 3540:14	<b>6.95%</b> 3686:28	<b>90%</b> 3634:11,12 3654:1 3727:7,10	<b>accounted</b> 3547:24 3601:2, 7,8,11 3704:15 3721:6
<b>41</b> 3708:27	<b>61</b> 3529:7,9	<b>91</b> 3619:7 3706:19	<b>accounting</b> 3547:27 3646:17
<b>45</b> 3529:18 3530:4 3546:1,4	<b>640-pound</b> 3539:27 3540:10,15,24 3542:14 3585:10 3722:23,25,28 3723:2,5,7,11,12,16,19,24	<b>91%</b> 3706:12	<b>accuracy</b> 3654:16 3668:25, 27 3669:1,3 3670:12 3671:14 3672:28
<b>47%</b> 3641:10	<b>640s</b> 3540:13,23 3541:5 3585:13	<b>91.2%</b> 3705:27	<b>accurate</b> 3506:14,19 3520:13,24 3521:3 3557:1 3568:16 3569:28 3612:19 3631:1 3646:2 3661:8 3662:23,26 3664:14 3667:21 3669:20,24 3670:4,11 3671:19,27 3672:2,4,17 3716:6 3724:19,24
<b>4:15</b> 3707:21	<b>67467</b> 3689:6	<b>92</b> 3635:16,17	<b>accurately</b> 3523:11 3729:2
<b>4th</b> 3708:15 3709:11	<b>687</b> 3493:25	<b>93%</b> 3726:16,26	<b>achieve</b> 3518:6 3527:10 3672:28 3726:26
<b>5</b>	<b>7</b>	<b>96</b> 3531:13	<b>achieved</b> 3563:1
<b>5</b> 3592:22 3605:3 3625:23 3639:4 3660:6 3697:9,10,11 3713:9 3714:13,27	<b>7</b> 3503:19 3555:7 3586:8 3588:17 3605:3 3613:16 3614:23,25 3627:18 3674:16 3677:6,20 3678:28 3720:3 3728:15 3730:18	<b>97</b> 3619:8	<b>acknowledge</b> 3526:3 3731:8,12
<b>5%</b> 3637:12 3674:20 3675:8, 12,14 3676:5,21,22 3677:8	<b>7%</b> 3509:27	<b>97.44%</b> 3653:23	<b>acknowledged</b> 3730:24
<b>5.07</b> 3507:26	<b>70%</b> 3716:27	<b>A</b>	<b>acknowledges</b> 3565:12 3720:12
<b>5.07%</b> 3506:28 3512:3	<b>70-plus</b> 3641:15	<b>A-3</b> 3685:7	<b>act</b> 3717:6 3731:6
<b>5.5%</b> 3559:19	<b>70.26%</b> 3641:13	<b>A-L-L-E-N</b> 3532:9	<b>acting</b> 3570:26
<b>50</b> 3541:15 3696:3	<b>71</b> 3689:6	<b>a11</b> 3636:7 3679:28	<b>action</b> 3508:14 3730:12,20, 24
<b>50%</b> 3497:16,20,27 3498:13, 19 3506:4 3545:19 3588:15 3589:6 3598:28 3648:16,22 3654:7,10 3710:9	<b>72%</b> 3641:15	<b>a31</b> 3636:28	<b>actual</b> 3494:27 3504:17 3510:18 3512:1,18 3519:9 3524:17 3570:16 3631:11 3633:10 3634:7 3635:13,16, 21,27,28 3636:2,3,25 3639:4,6,13 3640:26 3641:27 3654:19 3655:16,28 3656:9,13,19,28 3657:3,6,17 3662:5,13,16 3669:16 3672:7,21 3674:1 3677:10, 13 3678:23 3680:26 3694:2, 21 3706:21 3713:13 3714:4 3729:24
<b>50-kilogram</b> 3542:16	<b>72.2%</b> 3641:5	<b>AA</b> 3727:9 3728:8	
<b>50.4%</b> 3641:5	<b>75th</b> 3561:11	<b>abandoned</b> 3568:28	
<b>50.8%</b> 3706:25	<b>77</b> 3678:22	<b>abbreviations</b> 3679:1	
<b>500-pound</b> 3541:6 3585:10 3721:11,12	<b>77%</b> 3678:24	<b>abilities</b> 3729:26	
<b>50th</b> 3561:12	<b>8</b>	<b>ability</b> 3514:18 3520:17 3572:15 3584:11 3587:15 3658:9,20 3675:4 3695:11 3701:11 3721:27	
<b>51</b> 3650:14	<b>8</b> 3537:19 3615:1,3,7 3653:15 3711:17 3717:24	<b>absence</b> 3670:24	
<b>51.2%</b> 3641:5	<b>8%</b> 3558:24	<b>absolute</b> 3594:20	
<b>55</b> 3530:5,17	<b>80</b> 3545:25	<b>absolutely</b> 3495:9 3496:27 3500:27 3520:14 3528:19 3543:3 3546:22 3675:4 3697:24	
<b>55.6%</b> 3706:25	<b>80%</b> 3601:26 3641:17 3678:2	<b>abundantly</b> 3729:18	
<b>555.02</b> 3653:21	<b>80.1%</b> 3706:17	<b>academia</b> 3536:28	
<b>57</b> 3528:24 3529:8,9	<b>82</b> 3619:13	<b>academics</b> 3503:8	
<b>59.4</b> 3641:16		<b>accelerated</b> 3633:7 3640:18	





<b>add</b> 3517:3 3561:2 3697:23 3722:27 3723:6,10 3724:3 3727:11	<b>adopted</b> 3559:16 3593:9 3712:1	3586:14,16,18,28 3587:11, 15 3646:14 3667:2	3686:11 3690:5 3694:19 3698:23 3700:1 3712:18 3733:19
<b>added</b> 3512:2,17 3611:26,28 3625:9 3638:24 3643:28 3644:8	<b>advanced</b> 3618:14	<b>allocated</b> 3511:3,23 3512:8 3523:15 3553:9 3564:8 3586:19 3666:4	<b>amounts</b> 3714:9 3726:5
<b>adding</b> 3673:7 3678:7,12 3723:5 3726:12	<b>advantage</b> 3555:6 3715:24	<b>allocating</b> 3505:10 3664:6	<b>AMPI</b> 3543:18 3544:2 3641:9
<b>addition</b> 3514:16 3634:25 3639:21 3658:7 3712:13,15 3722:23,25 3724:1,26	<b>advantageous</b> 3556:11	<b>allocation</b> 3511:18,21 3523:9,14 3547:8 3563:11 3586:24 3587:7,8,24 3596:13 3602:5,10 3644:26 3666:6 3667:7	<b>AMPI's</b> 3543:23
<b>additional</b> 3494:26 3517:13 3518:2 3526:8 3531:18,21 3547:8 3552:25 3588:19 3597:25 3625:27 3651:27 3707:7 3718:28 3734:3	<b>advertised</b> 3535:15	<b>allocations</b> 3523:11	<b>AMS</b> 3522:26 3526:8 3549:24 3551:12 3570:26 3571:18,19 3584:20 3604:23 3605:3,4 3608:11 3642:25 3689:24 3702:6
<b>Additionally</b> 3717:3	<b>advice</b> 3604:18	<b>allowance</b> 3513:26 3515:9, 11,20 3516:12,18,19 3517:3, 12,19 3551:5,9,23 3555:12 3557:17 3558:11 3559:25 3593:8,24,28 3606:8 3625:5 3629:4 3643:14 3644:18 3650:23,26 3651:2,11,28 3652:5,16 3658:2 3663:11 3664:12,22 3670:23 3693:5 3695:3 3700:17 3701:25 3711:20,28 3712:13,15,21, 22 3714:28 3718:14 3719:24 3720:5,14 3721:8 3725:8 3728:4 3729:14 3732:6 3733:5 3734:20	<b>AMS's</b> 3608:8
<b>address</b> 3555:8 3708:13,15	<b>advisory</b> 3709:23	<b>allowances</b> 3501:4 3514:25 3518:28 3525:26 3533:23 3556:14 3557:10 3558:7 3559:13,17 3565:14 3592:25 3593:13 3605:7 3622:22,28 3641:23 3650:19 3662:23,25 3670:28 3671:2 3673:6 3681:18 3692:17,19,21,22, 24,25,27 3699:28 3700:24 3701:5 3705:2 3711:17 3712:7,23,24,26 3713:3 3714:7,16 3715:10,13,16,20 3716:4,6,8,13 3720:3,12,16, 17,24 3721:1 3724:27,28 3729:19,23,25 3730:14,15 3732:2,8,12,18	<b>analogy</b> 3701:19
<b>addressing</b> 3558:7	<b>advocacy</b> 3618:4,27,28	<b>allowed</b> 3515:14 3541:3 3569:28	<b>analyses</b> 3626:24 3641:22
<b>adds</b> 3588:27	<b>affect</b> 3606:28	<b>allowing</b> 3570:12 3700:20	<b>analysis</b> 3550:27 3563:15 3565:2,13,15,16,27 3566:8 3622:16 3623:16,18 3624:23 3637:24 3648:22 3659:19 3660:8 3665:7 3676:27 3694:20 3697:17 3709:15 3713:9,13 3714:10 3717:7 3718:21 3725:1 3728:3,25 3733:11
<b>adjust</b> 3701:4 3702:19 3731:14 3732:16	<b>age</b> 3558:27 3726:24	<b>alongside</b> 3642:4	<b>Analyst</b> 3709:23
<b>adjusted</b> 3634:3 3662:16 3676:12 3677:21,25 3678:3, 10,22 3692:24,27,28 3711:25	<b>aged</b> 3544:25	<b>alternative</b> 3675:10	<b>analyze</b> 3504:3
<b>adjustment</b> 3662:13,15 3671:18,19 3700:15 3718:15	<b>Agency</b> 3627:24	<b>altogether</b> 3590:21,22	<b>analyzed</b> 3714:12
<b>adjustments</b> 3533:23 3606:26 3651:27 3730:17	<b>ages</b> 3552:4	<b>ambiguous</b> 3544:8	<b>announced</b> 3713:6 3729:27
<b>adjusts</b> 3678:16	<b>aggregate</b> 3528:21	<b>America</b> 3710:12	<b>announcements</b> 3557:11
<b>administering</b> 3619:16	<b>aging</b> 3545:6,15	<b>American</b> 3709:26	<b>annual</b> 3622:12,18,20 3626:6 3645:3 3652:12 3682:17 3684:26 3730:2 3731:9
<b>administration</b> 3709:28	<b>agree</b> 3523:13 3571:8 3575:10 3580:19 3641:27 3643:2 3649:11,21,28 3654:15,20 3662:19,21 3670:26 3671:26 3672:3 3673:7 3678:21 3729:13	<b>American-style</b> 3710:18,28 3711:3 3716:16	<b>anomalies</b> 3673:28
<b>administrative</b> 3510:3,4,9 3587:13 3589:24 3590:5 3591:7 3596:5 3600:7 3612:9 3629:5	<b>agreed</b> 3550:16	<b>amount</b> 3496:9 3497:14 3523:18 3607:28 3644:17	<b>anomalous</b> 3562:3
<b>Administrator</b> 3576:8 3619:13 3620:4	<b>agreement</b> 3533:13 3576:17,18 3577:6 3578:18 3579:1,2 3583:3		<b>ANOVA</b> 3676:27
<b>admissible</b> 3573:8,10 3581:6	<b>Agri-mark's</b> 3544:22		<b>answering</b> 3694:23
<b>admission</b> 3569:4,16,26 3572:21	<b>agricultural</b> 3619:5 3620:16 3709:22,23,25		<b>answers</b> 3581:14 3584:27 3693:25
<b>admit</b> 3575:25 3577:16 3580:25 3581:3	<b>Agriculture</b> 3614:22 3621:13,17 3703:17 3711:25 3720:26		<b>anticipation</b> 3533:22
<b>admits</b> 3578:3	<b>ahead</b> 3532:3 3542:10 3546:28 3557:22 3581:10 3617:24 3632:6		<b>anymore</b> 3567:28 3619:20 3621:25 3686:24 3699:24 3702:2
<b>admitted</b> 3570:7,9 3574:13 3575:14,21,22 3576:22 3577:3,4,5,10 3578:28 3579:10 3580:24 3581:23	<b>AI</b> 3659:13		<b>anyone's</b> 3578:16
<b>adopt</b> 3721:7	<b>aid</b> 3571:4		<b>anyplace</b> 3646:4



<b>apparently</b> 3593:19	<b>assessment</b> 3557:11	<b>attorneys</b> 3510:12,13 3569:27	<b>averaged</b> 3567:16 3643:25 3713:17,19,23,25
<b>appears</b> 3532:22 3720:20 3726:2	<b>asset</b> 3507:11,20,26 3508:19,20 3511:3 3512:3	<b>attract</b> 3719:2	<b>averages</b> 3516:21 3595:1 3604:4 3611:26 3684:26
<b>appendix</b> 3534:22 3546:13 3714:19	<b>assets</b> 3491:19 3506:28 3507:8,14,23,25 3508:9,11, 24 3511:6 3523:28 3524:16 3562:6,17 3591:1,3	<b>attractive</b> 3553:19	<b>avoid</b> 3544:19
<b>apples</b> 3500:8 3521:18	<b>assign</b> 3489:21,23 3503:4 3508:19 3669:3,19	<b>attributable</b> 3695:2	<b>awarded</b> 3725:18
<b>application</b> 3534:15	<b>assigned</b> 3489:18 3512:10, 17 3513:25 3549:21 3599:2 3728:10	<b>attribute</b> 3594:17	<b>aware</b> 3490:12 3544:11,13 3560:22 3568:3,5 3609:13 3689:5 3704:20
<b>applied</b> 3512:6 3564:20 3570:4 3579:6 3620:6,18	<b>assigning</b> 3505:9 3669:25	<b>audited</b> 3524:10 3548:23 3600:20 3621:4 3646:19,20	<b>awful</b> 3700:3
<b>applies</b> 3586:5 3686:10	<b>assignments</b> 3523:27	<b>auditable</b> 3522:22	<b>awkward</b> 3531:12
<b>apply</b> 3570:6 3577:22 3685:24 3698:25 3731:28	<b>assist</b> 3643:13	<b>audited</b> 3520:18 3544:12,19 3603:2 3621:6 3622:7,20 3623:9 3639:9 3645:7,15,17 3646:5,11,27 3647:2,6,7,9 3652:10 3656:13 3670:25,27 3671:15 3672:3,27 3688:21, 25 3689:10,12,17,19,20 3711:25 3720:25 3721:2 3725:11 3726:20 3729:1	<b>B</b>
<b>applying</b> 3570:2,21 3579:4	<b>assistant</b> 3619:5	<b>auditing</b> 3689:15	<b>b11</b> 3636:9 3680:4
<b>appreciated</b> 3546:14	<b>association</b> 3618:3 3641:17 3711:18,19,21,22 3720:6,7 3729:17 3730:23	<b>auditors</b> 3646:12	<b>Baa</b> 3508:3
<b>approach</b> 3527:27 3528:2,4, 5 3531:24 3563:22 3623:7 3626:4 3643:7 3652:26 3667:5 3672:11,13 3694:16 3720:14,19 3721:8 3734:20	<b>assume</b> 3500:23 3533:28 3551:25 3567:21 3578:9 3588:15 3601:20 3610:14 3620:28 3648:15 3682:19 3705:14,26 3706:4,15,23 3723:10	<b>audits</b> 3621:21 3622:12	<b>Bachelor's</b> 3619:14 3620:6
<b>approached</b> 3643:16	<b>assumed</b> 3675:2 3685:18	<b>August</b> 3619:7	<b>bachelor's</b> 3709:27
<b>approaches</b> 3528:4	<b>assumes</b> 3727:4	<b>authentic</b> 3569:13	<b>back</b> 3489:6 3491:13 3492:1,3,16,19,21,25 3493:1 3495:28 3496:28 3498:3,21 3499:9 3505:1,2,8 3511:12, 28 3516:20 3525:25 3526:18 3527:4 3529:14 3539:19 3540:27 3542:8 3546:5,8 3547:7 3550:25 3556:22 3560:4 3576:13 3577:10 3582:19,28 3588:8 3593:14 3596:12 3599:27 3600:2 3603:25 3613:13,24 3618:11 3619:2 3621:26 3626:10 3636:27 3638:10 3640:11 3642:8 3647:21 3653:19 3659:6 3661:18 3668:18,20 3677:6,20 3682:26 3689:1, 19 3696:24 3701:1,12 3707:21,24 3719:18
<b>approximate</b> 3514:8 3664:12	<b>assuming</b> 3515:19 3641:20 3694:16 3695:6	<b>authenticate</b> 3571:16,20 3574:3 3579:17,24	<b>back-and-forth</b> 3581:14
<b>approximately</b> 3530:10 3545:19	<b>assumptions</b> 3558:13,20	<b>authentication</b> 3577:19 3578:27 3580:1,21	<b>backdrop</b> 3495:6
<b>April</b> 3535:24 3582:15,21 3713:22	<b>assure</b> 3522:27 3527:13 3539:11 3556:24 3557:11 3574:10 3600:22	<b>authority</b> 3570:11,27 3600:20	<b>backed</b> 3644:19
<b>arbitrage</b> 3731:16,24 3732:4,15,25 3733:17	<b>assuring</b> 3531:18	<b>automatic</b> 3581:25	<b>background</b> 3617:28 3691:8 3710:2
<b>archive</b> 3626:10	<b>asterisk</b> 3674:21	<b>automation</b> 3499:18 3519:24 3718:19	<b>backwards</b> 3703:6
<b>area</b> 3493:15 3503:9 3522:21 3523:8 3555:4 3556:1 3645:28	<b>asterisks</b> 3637:9,12 3674:19 3675:25,26 3676:20	<b>av-</b> 3611:1	<b>backyard</b> 3554:15
<b>areas</b> 3520:21 3523:21 3592:5 3711:7 3714:18	<b>Atlantic</b> 3592:4	<b>Ave</b> 3709:11	<b>bad</b> 3527:17 3581:17 3700:20 3701:1
<b>arenas</b> 3619:1	<b>attachment</b> 3538:2	<b>Avenue</b> 3708:15	<b>bags</b> 3542:16
<b>argue</b> 3524:25 3712:17	<b>attempt</b> 3520:4 3540:25 3601:13 3690:10	<b>average</b> 3516:16,17 3551:6, 14,17 3561:9,25 3565:22,23 3584:14 3589:10,14,15,17, 18,20,24 3596:10 3610:18, 19,23,27,28 3611:2,7,23,25 3625:14,19,21 3644:9,16 3648:6 3650:20,22 3651:5, 12,15 3652:3 3673:9 3679:7 3682:13,17,19 3683:13 3684:14,17,21 3711:23 3713:12 3728:25	<b>bake</b> 3699:27
<b>argument</b> 3572:8 3574:18, 26	<b>attempted</b> 3556:28	<b>av-</b> 3611:1	<b>baked</b> 3691:10
<b>arguments</b> 3570:13,16,17	<b>attention</b> 3547:9	<b>av-</b> 3611:1	<b>bakery</b> 3710:17
<b>arise</b> 3717:3	<b>attest</b> 3676:1	<b>av-</b> 3611:1	<b>balance</b> 3547:23 3548:18
<b>artificially</b> 3715:21,22	<b>attesting</b> 3689:14	<b>av-</b> 3611:1	
<b>ascribe</b> 3550:4 3580:28	<b>attorney</b> 3576:15 3578:22, 24	<b>av-</b> 3611:1	
<b>aspects</b> 3646:13 3727:1	<b>attorney's</b> 3513:4	<b>av-</b> 3611:1	
<b>aspiration</b> 3563:4		<b>av-</b> 3611:1	
<b>assert</b> 3578:17		<b>av-</b> 3611:1	
<b>asserted</b> 3576:20		<b>av-</b> 3611:1	



3712:19 3720:15	<b>beginnings</b> 3540:8	<b>blends</b> 3710:23	<b>breaks</b> 3589:2
<b>balancing</b> 3552:19 3553:2,3, 5 3709:16 3722:3	<b>begins</b> 3688:15	<b>Blew</b> 3558:26	<b>bridge</b> 3573:16 3704:27
<b>baling</b> 3701:18	<b>behalf</b> 3618:4,15 3667:25	<b>blind</b> 3532:24,27	<b>briefly</b> 3628:22
<b>ball</b> 3700:8	<b>behaved</b> 3698:20,21	<b>blindfold</b> 3604:15	<b>briefs</b> 3572:23
<b>ballpark</b> 3501:27 3513:2 3666:24 3682:8 3696:19	<b>behavior</b> 3554:27	<b>block</b> 3539:27 3544:23,28 3545:14 3710:22 3711:1 3721:15,19 3722:12,21 3723:2,4,8,12,14,16,22	<b>bring</b> 3728:24
<b>bar</b> 3634:18	<b>beholden</b> 3577:8	<b>blocks</b> 3540:10,16,17,25 3541:5 3542:14 3544:21 3585:9,10 3722:24,25 3723:1,6,11,19,24	<b>broad</b> 3521:26 3628:28 3672:22 3724:22 3726:23
<b>barely</b> 3527:4	<b>behoove</b> 3573:26	<b>BLS</b> 3682:18 3693:14 3697:14	<b>broader</b> 3494:7 3652:8 3717:20 3734:9,17
<b>bargain</b> 3715:7 3726:2	<b>behooves</b> 3572:20	<b>blue</b> 3631:17	<b>broadly</b> 3583:20
<b>barrel</b> 3710:22 3721:15,21, 22,24,28 3722:1,7,10,12,19 3723:8	<b>belabor</b> 3581:3	<b>body</b> 3492:24 3499:28 3549:16 3550:21 3562:27	<b>broken</b> 3508:27 3529:7 3590:6 3626:14,16
<b>barrels</b> 3541:6 3585:10,16 3721:11,12,21 3722:6,13,20, 21 3723:20,26	<b>belief</b> 3647:8	<b>bold</b> 3582:14	<b>brokers</b> 3733:13
<b>based</b> 3490:7 3491:26 3492:16 3496:15 3505:11 3511:2,3,16,18,20,23 3512:3,8 3523:19 3530:27 3545:28 3554:19 3564:12,14 3576:21 3583:15 3599:5 3602:3 3603:27 3604:2 3608:2 3623:1 3637:24 3644:24 3647:9,13 3656:2, 18,27 3662:5,25 3664:28 3669:27 3671:8 3673:27 3685:4 3692:28 3702:19 3703:17,24,25 3710:3 3721:22 3726:9,10,23	<b>believed</b> 3654:6,7	<b>bond</b> 3508:3,4,7,15 3559:6, 18	<b>brought</b> 3502:19 3558:23 3580:11 3720:5
<b>basic</b> 3623:15 3674:23,24 3710:8	<b>believes</b> 3581:1 3712:24	<b>bootstrapped</b> 3665:9,10	<b>Brown</b> 3574:28 3681:12 3705:13
<b>basically</b> 3571:11 3595:3 3618:27 3619:16 3622:2 3623:12,16 3628:13 3629:28 3634:1,9,27 3636:26 3638:6 3639:25 3676:17 3699:13 3701:19 3723:19	<b>bell</b> 3571:24 3588:4	<b>bother</b> 3567:9	<b>bucket</b> 3498:7 3685:18
<b>basis</b> 3521:6 3559:17 3560:11 3596:13,28 3607:15 3622:20,21 3639:1 3650:18 3652:12 3667:3 3722:2 3723:1 3730:2	<b>benchmark</b> 3492:23 3521:10 3540:9 3650:20 3722:5	<b>bottom</b> 3517:4 3529:28 3587:5 3612:3 3631:15,19 3657:21 3674:18 3697:10,11	<b>build</b> 3517:1,12,20 3553:26, 27 3695:24 3717:24
<b>Bauer</b> 3524:20	<b>benefits</b> 3734:1	<b>bought</b> 3562:11 3731:23	<b>built</b> 3491:8 3513:12 3515:8 3516:15 3517:27 3553:12 3717:28 3725:9
<b>bear</b> 3513:18	<b>bet</b> 3690:3	<b>bounds</b> 3491:9	<b>built-in</b> 3517:18
<b>beat</b> 3517:11,20	<b>betterment</b> 3496:22	<b>boxes</b> 3491:17 3613:13	<b>bulk</b> 3597:12 3598:11 3641:11 3725:21,24
<b>began</b> 3541:3 3589:3 3622:20 3731:2	<b>beverage</b> 3624:7	<b>boy</b> 3521:21 3527:3 3696:20	<b>bullet</b> 3635:14 3653:17,20
<b>begin</b> 3535:3 3565:19 3581:13 3602:14 3661:16,17 3670:5 3691:27	<b>bid</b> 3725:17	<b>Bozic</b> 3549:28 3550:14 3553:11	<b>bumped</b> 3632:10
<b>beginning</b> 3622:9,21 3644:12 3675:20 3732:6	<b>big</b> 3498:9 3508:25,26 3525:17,26 3557:4 3572:10 3578:11,15 3630:12 3661:15 3682:4 3699:2,4	<b>branch</b> 3647:5	<b>bumping</b> 3714:2
	<b>bigger</b> 3594:10 3607:3 3693:4	<b>branch's</b> 3646:18	<b>bunch</b> 3549:4
	<b>biggest</b> 3517:7 3550:5	<b>brand</b> 3658:21 3725:27	<b>bunched</b> 3651:4
	<b>bill</b> 3559:6	<b>brands</b> 3710:5	<b>burden</b> 3521:1
	<b>bimodal</b> 3550:15,17 3551:4, 7 3588:3	<b>break</b> 3511:7,10 3536:22 3546:2,5,7 3561:17,18,19,21 3588:21,24,26 3589:6 3598:23 3599:5 3610:22 3613:8,25 3668:16,17,19 3707:10,23 3734:26	<b>Bureau</b> 3628:7,10
	<b>binary</b> 3633:14	<b>break-even</b> 3559:1,4	<b>business</b> 3494:10 3507:11 3551:28 3563:8 3620:7 3649:8,25,27 3708:13 3710:4,5,20 3717:18 3722:10 3731:11,12
	<b>binding</b> 3576:27	<b>breakdown</b> 3494:6 3626:8, 11,13	<b>businesses</b> 3649:24
	<b>bioactive</b> 3710:15	<b>breaking</b> 3599:8	<b>butter</b> 3495:20 3497:13,20 3501:22,25 3502:6,21,28 3503:2,22 3504:18,20 3505:27 3506:4,6,8,13 3511:8 3519:22 3529:3 3545:25 3560:24 3562:12 3566:12,14 3587:18 3594:23,28 3596:19,21 3597:8,11,12,17 3598:3,5,8
	<b>biogas</b> 3718:16 3727:15	<b>breakouts</b> 3590:17 3610:22	
	<b>bit</b> 3491:7 3501:24 3502:15 3506:21 3525:16 3535:28 3537:11 3545:7 3550:11 3556:21 3562:8 3563:26 3589:3 3594:15 3602:10 3617:26 3641:11,25 3656:24,25 3668:15 3690:8 3692:2 3694:8 3703:10		
	<b>blank</b> 3489:24 3491:24 3590:20		
	<b>blending</b> 3681:17		



<p>3600:9 3606:18,28 3608:19,                  26 3609:3,6,9,11,17 3625:19                  3626:19 3632:5,17,21                  3633:24 3636:19 3641:5,14,                  15 3653:1 3661:1 3666:16,                  26 3668:2 3673:19 3687:2                  3688:22 3691:18,25 3692:6,                  9 3702:2 3705:18 3706:15,                  17,22 3727:9 3728:2,4,9,10                  3731:17,21 3733:6,28</p> <p><b>butter/nonfat</b> 3730:6</p> <p><b>butter/powder</b> 3666:24</p> <p><b>butterfat</b> 3514:9 3558:19                  3564:11 3726:15,18</p> <p><b>buy</b> 3559:27 3574:18 3618:6                  3687:14 3701:16</p> <p><b>buy/sell</b> 3722:3 3732:5</p> <p><b>buyer</b> 3603:19</p> <p><b>buyers</b> 3723:13,15</p> <p><b>buying</b> 3629:10 3697:26,27,                  28 3698:23 3733:27</p> <hr/> <p style="text-align: center;"><b>C</b></p> <hr/> <p><b>c11</b> 3636:10 3680:12</p> <p><b>Cabot</b> 3544:25</p> <p><b>calculate</b> 3506:28 3514:6                  3516:3 3526:28 3695:11                  3705:19</p> <p><b>calculated</b> 3492:12 3526:26                  3527:19 3593:22 3606:3                  3663:18</p> <p><b>calculating</b> 3513:21 3591:2                  3662:27,28 3663:4 3703:17                  3705:17</p> <p><b>calculation</b> 3511:2 3513:16                  3516:6,7 3547:23,24                  3561:25 3599:6 3605:12                  3638:17 3664:3 3677:3</p> <p><b>calculations</b> 3492:16 3527:8                  3548:2 3605:5 3705:14</p> <p><b>calendar</b> 3592:12,16,19                  3622:12,18,21 3623:13</p> <p><b>California</b> 3614:21 3618:2,6,                  7,9,17 3620:22 3621:12,16,                  20,23 3622:9 3627:28                  3628:1,2,5 3632:5,12                  3637:28 3645:5 3647:13,15,                  17,25,26 3648:9,23,24,27                  3649:3,13,17,21,25,26                  3651:25 3652:28 3653:24                  3662:17,18 3669:8,11,12,15,                  23,26 3679:4,10,13,22                  3681:23,26 3682:12,17                  3683:10,22 3684:2,3,6,16,</p>	<p>18,20 3685:3,24,28 3686:12,                  14,18 3687:12,19,22                  3688:15,28 3690:16,21,26                  3692:14,21 3693:3,8,14                  3695:6 3699:3,20 3701:25,                  27 3703:12,14,16 3704:26                  3705:1 3709:25,28 3711:24                  3720:26</p> <p><b>California's</b> 3682:22,27                  3683:13 3684:27 3686:6,9                  3687:15</p> <p><b>call</b> 3614:3 3634:3 3636:6                  3665:9 3675:2 3677:14                  3708:2</p> <p><b>called</b> 3510:14 3602:21                  3634:2,22 3637:17 3647:7                  3656:4 3678:28 3728:8                  3731:16</p> <p><b>calls</b> 3500:22</p> <p><b>candid</b> 3520:7</p> <p><b>candidates</b> 3545:12</p> <p><b>capacities</b> 3494:9</p> <p><b>capacity</b> 3499:18 3552:24                  3554:26 3618:25 3718:28</p> <p><b>capital</b> 3490:5 3600:28                  3601:5,16</p> <p><b>capture</b> 3495:26 3497:20                  3504:2 3509:14,15 3518:2                  3519:27 3533:25 3545:10                  3551:20 3552:21 3560:10                  3597:9 3601:14 3658:16,18,                  20,27 3659:4,5</p> <p><b>captured</b> 3495:20 3497:13,                  27 3505:27 3506:3 3601:11                  3628:15 3659:1,17 3704:14</p> <p><b>captures</b> 3623:28 3624:5                  3630:23</p> <p><b>capturing</b> 3597:11 3601:27                  3602:13 3603:16 3632:1                  3659:10 3660:6 3661:27                  3704:4,5</p> <p><b>carbon</b> 3717:10</p> <p><b>careful</b> 3536:9 3556:21</p> <p><b>carried</b> 3590:3</p> <p><b>carry</b> 3518:26 3599:7</p> <p><b>carrying</b> 3552:24</p> <p><b>case</b> 3490:13 3509:26                  3551:28 3555:4 3558:18                  3561:17 3566:23 3571:19                  3573:27 3580:13,23 3589:27                  3590:2 3599:28 3605:11                  3608:18,25 3623:21 3631:28                  3632:2 3633:4 3639:14                  3649:14 3651:17,18 3659:7</p>	<p>3675:6 3677:28 3683:19                  3699:18 3711:9 3715:2,15,                  26 3719:20 3724:21 3727:14                  3732:4,22</p> <p><b>cases</b> 3563:24 3572:10                  3596:17 3630:4 3651:7,11                  3685:16</p> <p><b>casting</b> 3519:3</p> <p><b>catching</b> 3554:1</p> <p><b>categories</b> 3521:26 3524:14                  3587:18,25 3590:20,28                  3611:27 3646:1 3654:5,9                  3685:14</p> <p><b>categorization</b> 3594:21</p> <p><b>categorizing</b> 3685:13</p> <p><b>category</b> 3498:8 3521:28                  3522:2 3554:25 3585:26                  3589:11 3590:26 3600:14                  3601:13 3602:17,19                  3610:18,20,23 3612:15,16                  3628:28 3629:1 3685:10</p> <p><b>cattle</b> 3519:19</p> <p><b>caught</b> 3547:9</p> <p><b>caused</b> 3667:7 3721:16</p> <p><b>CC'D</b> 3575:1</p> <p><b>CC'ED</b> 3533:9</p> <p><b>CC's</b> 3532:24</p> <p><b>CDFA</b> 3508:2 3509:18,19                  3510:1 3524:3 3565:17                  3602:23 3603:2 3621:24                  3622:3,5,8,25,27 3623:2,9                  3624:12 3625:14,20,24                  3626:9,17 3631:11 3638:16                  3639:6,8 3640:8 3643:17                  3645:3,15,19 3647:1,24                  3650:2 3651:11 3655:9                  3656:13 3663:5 3664:5                  3667:2 3670:14 3685:14                  3688:25 3689:2,3,8,12,14,                  18,20 3700:14 3720:26                  3721:2,4 3724:27 3725:12</p> <p><b>CDFA's</b> 3651:21 3663:1                  3685:9</p> <p><b>CDI</b> 3730:12</p> <p><b>CDI...</b> 3730:16</p> <p><b>cease</b> 3621:20</p> <p><b>ceased</b> 3622:5 3624:20                  3692:11 3693:7</p> <p><b>census</b> 3499:15 3520:16                  3609:26 3706:7,9,12</p> <p><b>cent</b> 3670:18,19 3682:9                  3683:14</p>	<p><b>center</b> 3503:7 3509:26</p> <p><b>centers</b> 3509:16 3561:26</p> <p><b>cents</b> 3594:16 3640:12</p> <p><b>CEO</b> 3568:22</p> <p><b>certainty</b> 3734:14</p> <p><b>certificate</b> 3526:23</p> <p><b>chain</b> 3603:8 3697:15                  3699:24</p> <p><b>challenge</b> 3572:22 3573:1                  3729:25</p> <p><b>challenges</b> 3722:13,15</p> <p><b>challenging</b> 3725:5</p> <p><b>chance</b> 3532:27 3546:25                  3572:5 3637:17 3675:12,17                  3676:23 3681:11</p> <p><b>chances</b> 3677:13 3732:19</p> <p><b>change</b> 3509:19 3514:28                  3525:11 3526:3 3537:11                  3552:22 3554:27 3556:14                  3560:9 3564:7,24 3571:10                  3593:21,23,25 3605:6,18                  3606:7 3624:4,5 3628:15                  3632:25 3633:3,5,8 3639:2                  3661:15 3682:4 3692:19                  3701:3 3704:9,17,20                  3714:28 3731:3,12,15                  3732:2,4,5 3734:13</p> <p><b>changed</b> 3499:20 3504:25                  3523:2 3531:20 3551:9                  3592:27 3602:25,27 3603:18                  3671:8,10 3690:22 3691:18                  3692:1 3713:14 3716:13,18                  3730:27</p> <p><b>changing</b> 3494:9 3502:13                  3519:8,16 3520:4,25                  3682:13,14 3698:7 3724:15                  3731:7</p> <p><b>chaos</b> 3724:25 3726:13</p> <p><b>characteristic</b> 3528:19                  3561:23</p> <p><b>characterization</b> 3550:15                  3586:4</p> <p><b>characterize</b> 3518:18,19                  3595:19</p> <p><b>characterizing</b> 3532:21</p> <p><b>charging</b> 3734:6</p> <p><b>chart</b> 3509:24 3510:5</p> <p><b>check</b> 3529:14 3605:15                  3725:10</p> <p><b>checkoff</b> 3714:9</p>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



<b>cheddar</b> 3495:22,24 3496:10 3498:18 3513:20 3539:27 3541:2,14 3544:23 3548:11 3567:4,5 3585:9 3586:21 3625:16,17 3626:19 3637:2 3640:8 3653:1 3669:5 3673:16 3686:28 3688:22 3690:26 3691:4,7 3692:10, 12 3702:1 3705:17 3706:24, 25 3711:11 3712:8,9 3716:17 3719:16 3721:10 3722:23,28 3723:2,3,4,7,8 3724:8,13 3725:1,8,12 3726:8,26	<b>churning</b> 3502:21	<b>clued</b> 3731:3	<b>commingled</b> 3598:12 3599:11
<b>cheddar-based</b> 3724:12	<b>circulate</b> 3536:10	<b>clusters</b> 3550:18	<b>commissioned</b> 3498:24 3533:24,28 3564:28 3565:1, 13 3569:1
<b>cheese</b> 3494:5 3495:22,24 3496:10 3497:25,26 3498:18,25 3511:8 3513:17, 19,20 3515:10 3536:5,13 3541:2,14 3544:26 3545:18 3548:21 3554:21 3556:5 3560:18 3564:28 3584:8 3585:9 3586:19,21,25,26 3587:18 3600:9 3601:24 3602:13 3606:10 3625:16,17 3626:19 3631:12,24 3633:24 3635:16 3636:4 3637:2 3638:10 3639:13,18 3640:8 3641:3,4,11 3653:1 3660:14 3666:21,22 3669:2,5,12 3673:17 3675:20 3676:28 3678:20,23 3679:27 3682:26 3683:1 3686:18 3688:22 3690:25,26 3691:7 3692:10 3693:6,7 3705:18 3706:24, 25 3709:17,19 3710:7,22 3711:1,3,11,18,21 3712:9,19 3716:16 3717:25 3718:6,25, 27,28 3719:5,10,16,17 3720:6 3721:3,5,10,21 3722:10,23,26 3724:8 3725:1,17,27 3726:3,6 3727:4,7,10,22 3728:7,20 3730:6 3731:17 3732:28 3733:1,27 3734:2	<b>circulated</b> 3536:8,12,13,17	<b>CME</b> 3713:1 3719:17,22 3721:22,24 3722:19 3723:1, 6,7,9,10,12,14,16,19 3731:9, 14 3732:28 3733:4,16,20 3734:1,6,7	<b>commissioning</b> 3731:1
<b>cheese/whey</b> 3710:7,10	<b>claim</b> 3688:26 3726:12	<b>CME's</b> 3733:18 3734:15	<b>commodities</b> 3539:25 3608:21 3625:15 3633:24 3653:28 3673:25 3697:16 3732:21 3733:10,15 3734:3
<b>cheeses</b> 3710:18	<b>clarification</b> 3490:26 3547:8 3557:23 3558:1 3585:20 3605:1,28 3644:14 3672:14	<b>co-ops</b> 3671:11	<b>commodity</b> 3544:25 3596:9 3597:6 3607:22 3627:26 3709:15,20 3725:24 3732:26 3733:12
<b>Chicago</b> 3731:8	<b>clarify</b> 3611:18 3645:11 3697:16	<b>coalesce</b> 3618:13	<b>commodity-based</b> 3517:7
<b>chief</b> 3647:5	<b>class</b> 3513:27 3515:6,14 3516:14 3517:26,28 3556:6, 11,15,20,27 3610:17 3711:10,12 3713:6 3714:25 3715:3,8,16,20,21,22,23,25, 26,28 3716:3,13 3719:18,23 3720:1,22 3721:16,17,19,23, 26 3722:3,5,8,12 3723:6,18, 20,23,25 3724:4,6,9,26 3725:4 3726:13,16 3727:1,2, 3,6,28 3728:6,13,16,22,28 3731:15,18,22,23,28 3732:14,21,24 3733:10,26, 27	<b>coalition</b> 3729:16,17	<b>common</b> 3650:22 3715:12 3719:13
<b>Chip</b> 3582:6 3688:1	<b>classes</b> 3650:9	<b>coefficients</b> 3634:22 3635:5	<b>commonly</b> 3522:13 3623:18
<b>choose</b> 3496:16 3732:8	<b>clean</b> 3605:25	<b>cogently</b> 3677:25	<b>community</b> 3733:17
<b>chose</b> 3651:11	<b>clean-outs</b> 3727:26	<b>cold</b> 3718:18	<b>companies</b> 3491:21 3643:9
<b>chosen</b> 3679:9	<b>clear</b> 3489:11 3570:18 3592:21,28 3594:3 3596:3 3599:20 3602:16 3610:15 3623:8 3626:25 3634:18 3653:10 3656:7 3691:19 3704:11 3729:18 3730:10	<b>collapse</b> 3714:15	<b>company</b> 3553:24 3710:2,3, 8,14
<b>Chris</b> 3532:9	<b>cleared</b> 3733:22	<b>collapsing</b> 3714:14	<b>company's</b> 3533:2
<b>chunk</b> 3644:11	<b>clearer</b> 3694:9	<b>collect</b> 3534:15 3552:7 3553:3 3585:22 3624:12	<b>comparable</b> 3693:26
<b>churn</b> 3502:28 3597:23	<b>clerk</b> 3549:17,25 3590:11	<b>collected</b> 3510:19 3514:8,10 3521:5 3525:2 3533:12 3585:27 3592:10 3622:8,10 3624:14,15,16 3628:6 3647:12 3651:23 3652:17, 19,20 3655:4 3689:9 3725:22	<b>compare</b> 3496:14 3499:7 3500:7 3593:27 3602:22 3634:7 3660:26 3716:15,20
	<b>clicked</b> 3534:21	<b>collecting</b> 3492:9 3552:6 3603:25 3647:23	<b>compared</b> 3499:10 3550:2,3 3566:16 3597:7 3649:17 3654:22 3703:1 3724:7
	<b>client</b> 3578:4,17	<b>collection</b> 3491:8 3492:8 3547:17 3731:2	<b>compares</b> 3681:27
	<b>close</b> 3524:23 3556:5 3582:12 3592:18 3606:21 3607:17 3657:18 3660:21,27 3661:1,4,12 3662:1 3670:18 3691:22	<b>collectively</b> 3706:17	<b>comparing</b> 3521:18 3565:21 3600:4 3635:12 3669:23 3678:3,14
	<b>closed</b> 3536:9 3690:17 3692:4	<b>colloquy</b> 3605:8	<b>comparison</b> 3493:7 3500:8 3502:24 3605:6,12,20 3606:4,8 3610:1 3640:15 3683:20
	<b>closely</b> 3588:22 3602:25	<b>column</b> 3510:16 3511:1 3561:28 3593:21,24 3605:5, 21 3606:6,8,24 3607:7,8 3625:17,20 3637:6,7 3660:26 3661:1 3664:25	<b>compel</b> 3600:20
	<b>closer</b> 3491:10 3667:4 3669:24	<b>combination</b> 3528:28 3698:22 3731:20	<b>compete</b> 3693:11 3711:12 3719:4 3721:27
	<b>Clovis</b> 3556:4	<b>combined</b> 3506:14 3641:13 3710:21,27 3711:2 3716:24 3728:22	<b>competes</b> 3719:1
		<b>comfort</b> 3607:18	<b>competition</b> 3717:22
		<b>comfortable</b> 3497:17 3504:28	<b>competitive</b> 3528:20 3594:22 3694:4 3714:21 3718:12 3722:5 3725:16
		<b>commensurately</b> 3719:20	<b>compile</b> 3655:13
		<b>comment</b> 3566:21 3588:8 3599:27 3600:1 3604:21	<b>complete</b> 3495:23 3497:4 3514:10 3535:18 3536:4 3573:17 3579:10 3587:9 3602:5 3606:18
		<b>comments</b> 3532:13 3557:8 3570:14	



<b>completed</b> 3490:20 3491:16 3534:18 3546:20 3717:26 3726:21 3729:2	3654:26 3661:7 3734:11	<b>constantly</b> 3724:15	<b>copies</b> 3531:26 3532:25 3613:18
<b>completely</b> 3547:5 3551:13 3727:27	<b>conclusions</b> 3528:10 3568:16	<b>constants</b> 3676:2	<b>coping</b> 3701:7
<b>completeness</b> 3490:24 3491:3	<b>condensed</b> 3503:1	<b>constraint</b> 3676:9	<b>copy</b> 3532:27 3537:22,28 3538:3,9,23 3613:15
<b>completion</b> 3491:17	<b>condition</b> 3633:15 3731:11	<b>construct</b> 3524:3	<b>core</b> 3618:5 3652:9
<b>complex</b> 3504:4 3726:22	<b>conditions</b> 3519:9 3649:3,5 3662:5,7 3673:13	<b>constructed</b> 3554:22 3657:12 3658:11,26 3659:1 3677:12 3695:20	<b>Cornell</b> 3553:23 3562:18 3619:14 3620:8 3622:24
<b>complexity</b> 3728:26	<b>conduct</b> 3494:25 3620:23 3655:9	<b>constructing</b> 3705:2	<b>corner</b> 3612:3
<b>compliance</b> 3649:23	<b>conducted</b> 3621:18 3646:15 3652:12 3672:8 3673:3	<b>consumer</b> 3597:21,25 3598:9,11 3599:10 3710:5 3725:17,21,24	<b>corporate</b> 3709:11
<b>complicate</b> 3721:20	<b>conducting</b> 3522:26 3650:2	<b>consumption</b> 3490:4	<b>correct</b> 3490:22 3494:23 3505:14 3508:22 3510:21 3512:12,20,25 3529:18 3534:23,24 3535:23 3543:24,25 3544:1,6,7 3545:20,25 3550:17 3558:5 3559:13 3563:15 3565:8,15 3568:12,15,17,19,23,26,27 3574:20 3583:3,4 3585:14 3586:1,7,14 3588:4,5 3589:12 3592:11 3593:2 3594:12 3596:14 3599:18 3605:13 3606:9,11,12,22,26 3607:15 3608:19,20,23,24 3609:1,11,18 3612:15 3614:13,14 3618:19,20 3621:22 3623:3,4 3636:16, 17,20,21,22 3642:12 3647:10 3650:13,15 3652:11 3655:18 3659:12 3660:13, 17,23,28 3661:3,6 3662:18 3663:16 3665:15,17 3670:9 3672:19 3674:22 3675:28 3676:28 3677:1,8,9,19,22 3678:26 3679:4,5,7,11,12, 14,18,19,23,24 3680:1,2,5,6, 8,11,14,16,17 3681:4,7,8,10 3684:13 3685:11 3686:19 3687:16,20,21,23,24,26,27 3689:3,4,20,21 3690:14 3693:22 3702:17,18,20,25 3703:3,4,18,19,20,21,27 3704:14,28 3705:10,11,14 3716:8
<b>complicated</b> 3558:18	<b>confidence</b> 3526:27,28 3655:8 3671:9 3695:17,20, 22,27 3696:5 3725:13 3732:16	<b>Cont'd</b> 3489:4	<b>correction</b> 3644:13
<b>comply</b> 3521:2	<b>confident</b> 3670:21 3673:12	<b>contact</b> 3490:26 3533:3,6,15	<b>corrections</b> 3520:2
<b>component</b> 3557:25 3558:1, 13 3627:15 3631:9,23 3637:4 3685:17,21	<b>confidentiality</b> 3533:18 3542:27 3580:27 3583:1	<b>contacted</b> 3533:28 3534:2, 13	<b>correctly</b> 3528:25 3543:22 3651:20 3692:25 3695:26
<b>components</b> 3502:24 3504:12 3505:13 3511:16 3547:25 3563:26 3607:15 3631:10,14 3633:23 3713:12,15 3714:10 3718:17 3728:1 3732:1	<b>confirm</b> 3607:6	<b>contained</b> 3646:18	<b>correlate</b> 3733:3
<b>compositions</b> 3724:21	<b>conformity</b> 3646:16	<b>contemplated</b> 3491:23	<b>correlated</b> 3627:1,4,9
<b>comprehensive</b> 3652:7,20, 26 3731:10	<b>confounding</b> 3728:21	<b>contemporaneous</b> 3623:3	<b>correlation</b> 3634:14,22 3635:5,15,17
<b>comprise</b> 3593:4 3610:4	<b>confused</b> 3610:16	<b>contends</b> 3726:27	<b>correlations</b> 3633:26 3635:14,26 3733:9
<b>compute</b> 3657:4	<b>confuses</b> 3510:1	<b>context</b> 3492:26 3577:8,9,10 3579:10	<b>correspond</b> 3530:17
<b>conceivable</b> 3535:11	<b>confusing</b> 3537:13	<b>continue</b> 3490:14 3519:10 3558:25 3573:3	
<b>concentrate</b> 3503:24,26 3710:18,23 3711:1	<b>Congratulations</b> 3526:21	<b>contract</b> 3630:14 3648:2 3733:26,27	
<b>concept</b> 3563:16 3628:23	<b>conjectures</b> 3552:22	<b>contracts</b> 3648:1	
<b>conceptually</b> 3551:19	<b>consequence</b> 3699:17	<b>contrast</b> 3720:10	
<b>concern</b> 3570:1 3576:2 3577:11,13	<b>consequences</b> 3729:23	<b>contribute</b> 3678:12 3719:7	
<b>concerned</b> 3501:10 3526:1 3533:11 3576:24	<b>conservative</b> 3507:27 3508:7	<b>control</b> 3715:5 3718:13	
<b>concerns</b> 3570:9,21 3576:15 3666:16,19 3734:12,15,16	<b>considerable</b> 3524:16	<b>controversy</b> 3613:20	
<b>concert</b> 3638:3 3643:8	<b>considerably</b> 3597:9 3716:12,26	<b>conversation</b> 3491:7,26 3588:1	
<b>conclude</b> 3539:17 3682:5 3721:7	<b>considered</b> 3538:15 3560:8	<b>conversations</b> 3647:9 3696:17	
<b>concluded</b> 3543:22 3664:28 3667:18 3682:6 3689:19 3735:3	<b>consistency</b> 3490:25 3491:3 3573:22 3576:2,10 3578:26	<b>conversion</b> 3519:19	
<b>concludes</b> 3734:23	<b>consistent</b> 3494:20 3518:25 3572:11 3573:24 3576:3 3579:26 3607:13	<b>conveyed</b> 3499:27	
<b>concluding</b> 3557:8	<b>consistently</b> 3552:18 3703:9	<b>convince</b> 3556:26	
<b>conclusion</b> 3515:26 3635:20	<b>consolidation</b> 3691:24 3692:2,5 3712:18	<b>cook</b> 3501:19	
	<b>constant</b> 3636:7 3637:3 3639:27 3675:21,23,24,25, 26 3679:28 3680:7,20,21 3681:3,6,9 3683:16 3731:27	<b>cool</b> 3718:18	
		<b>cooler</b> 3523:6	
		<b>cooperative</b> 3556:10 3619:15,17 3730:11	
		<b>cooperatives</b> 3715:5	
		<b>copied</b> 3538:22	



<p><b>corresponds</b> 3632:11</p> <p><b>corridor</b> 3554:16</p> <p><b>corroboration</b> 3642:6 3643:11</p> <p><b>cost</b> 3492:12 3494:27 3499:4 3505:10 3506:26 3507:17,20 3509:16,23,25 3512:14,17,19,21,22,27,28 3513:6,11,12 3515:16,19,25 3517:23 3522:12,14 3523:11 3524:21,27 3525:17,22 3526:20 3527:21,25 3528:11,16,18 3532:11 3533:25 3540:16 3550:18, 19,22,23 3551:14,17,18,21 3552:26 3555:5 3561:8,20, 22,23,26,28 3562:1,13 3566:16,17 3567:4 3585:27 3586:19 3588:13,20,22 3589:10,11,13,22,24 3590:2, 17,20 3593:7 3594:21 3596:19 3597:18,19 3598:24,25 3599:15 3601:28 3603:7,24 3604:2 3610:22, 25 3611:6,7,27 3621:17,24 3622:7,8,27 3623:22 3624:2, 13,16,26,28 3625:8,10,15,21 3626:6,8,15 3627:7,16,21 3628:28 3629:24,27 3630:1, 26 3631:9,15,19,21,23 3632:26,28 3633:8,23 3634:7 3635:6,7,8,9,10,11, 13,15,16,18,26 3636:4,6 3637:4 3639:1,22,26 3640:17 3641:10,13,18 3642:4 3643:3,25,27 3645:3, 19,22 3646:1,17,19 3647:20 3649:12,23,26 3650:3,21,23 3651:5,19,21 3652:4,10,21 3654:5,19 3655:9 3656:5,13 3657:24 3661:13,17,21 3665:6,7,8,24,26 3666:6,11, 12,26 3669:8,10,13,14,15,16 3670:25,27 3672:3,7,16,27, 28 3673:24,26 3675:20,21 3676:19 3678:1,20,23,24 3682:3 3684:1 3685:22 3686:4 3688:18 3689:9,10 3691:7 3693:9 3694:17,18, 21 3695:7 3696:8 3698:7,19, 28 3702:26 3703:6,9,18,20 3705:7 3706:16 3711:25,26 3712:10,13,14,20 3716:24 3717:2,17,23,24 3720:25,28 3721:5 3725:2 3726:20 3729:1,24 3730:14 3731:1</p> <p><b>costly</b> 3631:27</p> <p><b>costs</b> 3489:25 3490:7 3493:3 3494:28 3495:4,8 3499:20 3502:17,23,25 3503:27 3504:8 3506:23,25 3509:10,13,15,17 3510:3,5,</p>	<p>7,9,19 3511:15 3512:1,18 3513:10 3516:27 3517:1,9, 16 3518:22,23 3519:5,14,17 3521:24 3523:9,14 3524:17, 22 3525:1,3,18,19,28 3526:2 3531:20 3540:9,15,18,22,26 3541:9 3542:5,12 3543:11, 23,24 3545:9 3549:8,11 3550:1,15 3551:21,26 3552:24 3553:6,8,9 3560:8, 9,24 3562:4 3563:18 3564:2, 5,8 3565:20,25,27 3566:8 3567:6,14,17,21 3585:12,13, 16,21 3586:5,14,16,18,28 3587:11,13,20,21 3593:1,5, 16 3594:20 3595:17,21 3596:2,3,4,5 3597:1,23 3598:10 3599:3,5,8,11,15 3601:10,21 3603:6,10,13,16 3607:20,21 3608:1,19 3611:22,25,28 3612:9,13 3620:23 3622:3,4,24 3623:10,24,25 3624:2,10,11, 19 3625:3,19 3626:12,13,14, 15,18,21,27,28 3627:11,12, 13,14 3628:9 3629:1,2,3,5,7, 12 3630:7,9,14,24 3631:3, 12,13,14,17,27 3632:4,10, 13,22 3635:2,27,28 3636:12, 16 3638:1 3639:18,23 3640:8,26 3641:4 3642:3,7 3643:9,12,17 3645:6,9 3647:24 3648:25 3649:9,22 3651:3,4,14,16 3652:17 3656:9 3657:9 3658:2 3661:19 3662:10,16,22,26 3664:6,11,21 3666:4,9,23 3667:2 3668:5 3669:5,12 3670:1 3671:9,22 3673:16, 22 3675:7 3679:21 3681:23, 26,27 3682:6,12,14 3683:24, 25,28 3685:11,13,19,23,24, 27,28 3686:4,6,9,12 3688:21,25 3694:13 3698:7, 23 3700:16,28 3702:17,23 3703:16,24,25 3706:21 3712:16 3714:9 3716:11,12, 15,23,28 3717:3,5,8,19 3718:3,7,8,10,13,20 3719:13,26</p> <p><b>counsel</b> 3573:2</p> <p><b>counted</b> 3529:3</p> <p><b>countless</b> 3718:5,15</p> <p><b>country</b> 3554:1 3591:21,25 3592:1 3629:10 3647:16,27 3649:10,12,18 3686:10,19 3698:4 3705:28</p> <p><b>country's</b> 3649:5</p> <p><b>counts</b> 3733:16</p> <p><b>couple</b> 3489:8 3508:14 3509:19 3526:24 3536:1</p>	<p>3547:3 3551:10 3568:10 3600:16 3605:1 3632:9,11 3640:19 3681:14 3691:22 3692:3</p> <p><b>coupon</b> 3559:19</p> <p><b>court</b> 3489:2 3526:8 3531:25,28 3532:2,7,14 3537:25 3538:6,8 3546:1,3,8 3569:6,8,17,21 3570:17,23 3572:4 3573:4,6,19 3575:7, 13,18,24 3577:12,23 3578:1, 7 3579:14 3580:16 3581:7, 25 3582:1,5 3584:19 3604:26 3605:28 3610:8 3612:26 3613:2,8,18,20,23 3614:2,8,17,25 3615:3,9,14, 18,22,26 3616:3,8,13,18,23, 28 3617:5,15,20 3620:17,19 3642:22 3646:22 3655:23 3668:12,17,20 3672:14 3689:23 3702:9 3707:6,9,20, 24 3708:4,8,23 3709:1 3734:28</p> <p><b>cover</b> 3489:8 3622:13 3688:7 3705:6 3706:9</p> <p><b>covered</b> 3526:14 3551:22,23 3608:28 3651:2,16 3655:7 3705:20</p> <p><b>covering</b> 3551:26 3622:18</p> <p><b>CPI</b> 3700:5</p> <p><b>crawl</b> 3535:11</p> <p><b>cream</b> 3502:20,22,24,25 3503:16,21 3727:8,10 3728:8,12</p> <p><b>create</b> 3556:18 3644:9 3704:3 3716:9 3721:18 3722:14 3725:12 3726:13</p> <p><b>created</b> 3571:28 3573:27 3574:2 3576:15 3577:18,26 3578:19,24 3579:1 3661:8 3715:17 3722:12 3725:2 3731:21 3733:12</p> <p><b>creates</b> 3627:1 3719:15</p> <p><b>creating</b> 3559:18 3715:21,22 3718:28</p> <p><b>criteria</b> 3539:20</p> <p><b>critical</b> 3533:20 3728:28 3730:16,19</p> <p><b>criticism</b> 3504:17</p> <p><b>criticisms</b> 3504:15 3505:16</p> <p><b>crops</b> 3709:25</p> <p><b>cross</b> 3493:7 3526:8 3573:28 3689:23</p>	<p><b>cross-checks</b> 3491:7 3547:16,18,20,21 3548:8,17 3549:7,14</p> <p><b>cross-examination</b> 3489:4 3526:10 3549:27 3571:4 3578:14 3582:8 3584:21 3598:19 3600:25 3642:21, 24,26 3674:8 3688:3 3689:26 3697:1 3699:7 3735:1</p> <p><b>cross-examine</b> 3526:19</p> <p><b>cross-examining</b> 3580:3</p> <p><b>crossed</b> 3704:28</p> <p><b>crush</b> 3731:14,16 3733:23</p> <p><b>crushing</b> 3733:24,26</p> <p><b>crystal</b> 3700:8</p> <p><b>CSC</b> 3732:28</p> <p><b>cubic</b> 3684:12</p> <p><b>cull</b> 3491:13</p> <p><b>cumulative</b> 3511:11</p> <p><b>curiosity</b> 3496:20</p> <p><b>curious</b> 3541:20 3596:15 3597:14</p> <p><b>current</b> 3553:17 3558:11 3592:25 3593:23 3622:22 3625:4 3662:23,25 3663:11 3664:22 3671:22 3673:13 3684:25,27 3692:22 3700:27,28 3723:4,7,21 3724:8,12,26 3727:3,6 3728:3,16</p> <p><b>curve</b> 3588:4</p> <p><b>cushion</b> 3732:10</p> <p><b>custom</b> 3710:15</p> <p><b>customers</b> 3553:25 3724:18</p> <p><b>cut</b> 3575:8</p>
<b>D</b>			
<p><b>daily</b> 3730:2</p> <p><b>dairies</b> 3717:14 3733:15</p> <p><b>dairy</b> 3493:25 3494:14,19 3503:7,9 3506:23 3514:21 3519:19 3539:13 3548:9 3554:5,7 3562:21,22 3563:1 3583:16 3618:2,3,6,8,10,22, 27 3619:3,4 3620:3,11,23 3622:3 3626:17 3629:9 3641:17 3646:18 3649:24 3650:6 3669:14 3686:17,21 3693:21,27 3694:5 3696:15 3697:3,25,27 3698:26</p>			



3699:4,19 3701:7,13 3709:8,15,19,20,24 3710:11,19,20 3711:13,19,22 3715:2,9 3717:23 3719:14 3720:1,2,7 3722:4 3723:8,17 3726:22 3729:17 3730:11 3732:20,22 3733:10,24 3734:1,9,14	<b>days</b> 3527:17 3618:11,17	<b>deflation</b> 3702:25,26	<b>describe</b> 3518:20 3536:21 3669:20 3682:16 3697:12
<b>Dakota</b> 3554:24	<b>deadline</b> 3535:28 3582:14,20,23	<b>degree</b> 3500:28 3502:17 3503:13 3563:9,10,14,19 3564:6,20 3565:1,27 3566:7,12,26,28 3568:25 3587:8,19,24 3607:17 3608:6 3619:15 3620:6 3709:27 3712:3	<b>description</b> 3532:8 3537:3 3591:14 3683:7
<b>Dallas</b> 3556:7	<b>deal</b> 3535:15 3539:7 3553:2 3568:8 3580:21,22 3627:8 3630:20 3701:28 3731:15	<b>degrees</b> 3620:5	<b>descriptions</b> 3549:20
<b>danger</b> 3551:24	<b>dealing</b> 3671:16	<b>Dejong</b> 3708:3,5,11,14,17 3709:5,7	<b>desegregate</b> 3602:1
<b>data</b> 3490:24 3491:2,8,25 3492:1,8,10 3493:5,6,11 3494:25,27 3499:13,14 3501:9,19,20,23 3504:6,22 3505:4,25 3506:21 3514:7 3515:4 3520:17 3521:3 3522:23 3524:6 3533:12,26 3534:15,27 3535:4 3537:10,12 3540:22 3542:26,27 3547:1,2,11,12,13,16 3548:6,11,17 3549:13 3550:6,8 3551:1 3552:6,7,16,20 3553:3 3558:10,11 3561:21 3562:27 3565:6 3568:15 3582:14,21,25 3584:12,13 3585:27 3589:5 3590:8,15 3592:10,16 3593:14 3599:28 3600:21 3603:3,7,11,12,24 3604:2,8 3607:25 3622:4,8,10,17,25,26,27 3623:2,9,27 3624:12,13,15,19 3625:18 3626:6,8,16,23 3627:20,23 3628:6,10,15 3629:28 3630:3,18 3631:11 3634:7 3638:4,6 3639:9,25 3641:27,28 3642:2 3643:3,8,17,18 3645:15,19,21,23,24,28 3646:2,3,13 3648:27 3651:22,26 3652:19 3655:4,16 3656:9,13 3657:14 3658:18 3660:6 3663:1,5 3664:5 3667:2,9,10 3669:9 3670:15 3671:9 3672:10,21,25 3684:2,25 3688:7 3689:2,3,9,12,15,17,18,20 3690:12 3691:11 3692:28 3693:16 3696:4,22 3703:12,14 3704:1,3,26 3705:1,8,9 3706:3 3711:27 3712:2,6 3713:7,23 3714:2 3716:9 3721:8 3724:28 3725:8	<b>dealt</b> 3624:9	<b>delay</b> 3701:11 3729:11 3734:11,18	<b>design</b> 3718:24
<b>decades</b> 3574:9 3730:28	<b>debug</b> 3547:5	<b>delayed</b> 3730:20	<b>designations</b> 3544:9
<b>December</b> 3585:3 3653:22	<b>decade</b> 3549:8,11	<b>delaying</b> 3716:9	<b>designed</b> 3509:14,15
<b>deceptive</b> 3549:8,11	<b>decide</b> 3544:24 3551:4 3555:5	<b>delegated</b> 3570:27	<b>detail</b> 3518:14 3548:4 3625:27 3626:2
<b>decided</b> 3540:7	<b>decided</b> 3540:7	<b>deliver</b> 3708:18	<b>detailed</b> 3688:21
<b>decider</b> 3575:27	<b>decides</b> 3734:18	<b>delta</b> 3668:3	<b>determination</b> 3496:13 3545:14 3570:25 3576:22 3650:7
<b>decimal</b> 3590:3 3670:11,14,16	<b>decision</b> 3546:18 3551:12,13 3562:8 3573:8 3604:3 3689:5,16 3712:22 3724:27 3725:6 3730:4 3731:5	<b>demand</b> 3709:16 3730:1,8	<b>determinations</b> 3604:9 3641:23
<b>decision</b> 3546:18 3551:12,13 3562:8 3573:8 3604:3 3689:5,16 3712:22 3724:27 3725:6 3730:4 3731:5	<b>decisions</b> 3553:22 3572:21 3604:11,14 3651:10 3688:13 3692:20 3693:4 3695:1 3712:5,28	<b>demonstrative</b> 3574:11,12	<b>determine</b> 3501:4 3506:18,20 3513:27 3603:27 3609:2 3718:21
<b>declared</b> 3620:15	<b>declining</b> 3568:6 3691:7 3713:8	<b>Department</b> 3580:28 3614:21 3619:5 3620:10 3621:13,16 3627:23 3628:7 3703:16 3711:24 3720:26	<b>determined</b> 3524:17 3634:4
<b>decline</b> 3692:8	<b>declined</b> 3565:21 3568:7 3594:15 3597:1 3690:26 3691:6	<b>Department's</b> 3671:16	<b>determines</b> 3539:14 3556:10
<b>declined</b> 3565:21 3568:7 3594:15 3597:1 3690:26 3691:6	<b>decrease</b> 3566:9,19 3728:22	<b>depend</b> 3553:22 3732:9	<b>developed</b> 3646:16 3649:17
<b>decreasing</b> 3568:6 3691:7 3713:8	<b>decreased</b> 3565:28 3566:15	<b>depended</b> 3627:26	<b>devised</b> 3636:15
<b>deeper</b> 3495:7 3656:24	<b>deemed</b> 3540:19	<b>dependent</b> 3623:21 3634:11 3675:5,12 3677:28 3678:18	<b>DFA</b> 3583:26 3584:2
<b>defer</b> 3701:20	<b>deffering</b> 3604:18	<b>depending</b> 3508:23 3544:23 3647:28 3650:27 3655:4 3669:27 3716:3 3724:13 3732:10	<b>differ</b> 3515:1 3732:13
<b>deferring</b> 3604:18	<b>deficient</b> 3502:8	<b>depends</b> 3673:12 3685:12	<b>difference</b> 3543:4 3545:5 3563:5 3578:11,15 3579:15 3595:2 3597:14 3602:16 3607:3 3645:10 3663:10 3664:12 3665:19 3668:4,8 3683:3,8,11 3685:23 3694:15 3705:9
<b>deficit</b> 3555:2,28	<b>define</b> 3592:2	<b>deploy</b> 3507:21	<b>differences</b> 3552:28 3578:5 3588:12 3602:14 3647:20,21 3654:24 3667:16 3681:25 3725:23 3728:27
<b>definition</b> 3621:1	<b>defining</b> 3668:28	<b>deployed</b> 3518:15	<b>differentials</b> 3556:15,20,27 3557:3
<b>definitively</b> 3673:24	<b>definition</b> 3621:1	<b>depool</b> 3555:13	<b>differently</b> 3540:20 3575:16 3600:19
		<b>depooling</b> 3555:17,22	<b>difficult</b> 3494:8 3499:7 3514:10 3520:1 3589:5 3627:5 3629:6 3716:20 3717:15 3724:5
		<b>depreciated</b> 3524:21 3601:17	<b>difficulty</b> 3627:2
		<b>depreciating</b> 3524:27	<b>dilute</b> 3624:27 3665:25
		<b>depreciation</b> 3489:18,27 3490:1 3523:26 3524:4,15,23 3602:18 3629:2	<b>diminishing</b> 3693:9
		<b>derivative</b> 3733:4	
		<b>derivatives</b> 3731:18,25 3732:21 3733:28 3734:2	
		<b>derived</b> 3733:21	





<b>direct</b> 3533:15 3614:9 3708:9 3716:25 3732:27	<b>dissertation</b> 3696:3	<b>double-digit</b> 3525:7 3558:21	3633:6,10,11,12 3637:7		
<b>directed</b> 3565:6	<b>distance</b> 3556:8,13 3680:25	<b>doubled-checked</b> 3605:27	<b>duplicative</b> 3594:25		
<b>direction</b> 3556:19,26 3557:4 3627:4 3694:25 3716:3	<b>distinct</b> 3543:5,6	<b>download</b> 3536:19	<b>Dykes</b> 3532:23 3575:1 3582:19		
<b>directions</b> 3557:2 3607:1	<b>distinction</b> 3656:22 3665:12	<b>Doz</b> 3679:25	<hr/> <b>E</b> <hr/>		
<b>directly</b> 3491:28 3533:4,6 3555:8 3586:14,15 3652:17 3719:1 3732:26,28	<b>distinguish</b> 3545:4,5	<b>dramatically</b> 3632:10	<b>E-CONSTANTS</b> 3680:19		
<b>director</b> 3514:21 3618:1,21, 23 3709:8	<b>distorted</b> 3612:21 3716:4	<b>drastically</b> 3721:26	<b>e-mail</b> 3491:15,26 3532:8, 23,27 3533:1,21,27 3534:4 3535:22 3565:12 3568:22,23 3569:4,11 3570:2 3571:14 3572:27 3575:1 3579:4,15, 20 3580:21 3581:3 3582:19 3584:6		
<b>disadvantage</b> 3719:8	<b>distortions</b> 3713:5	<b>draw</b> 3515:26 3527:7 3528:10 3551:8 3656:22	<b>e-mails</b> 3500:23 3533:5		
<b>disaggregate</b> 3602:3	<b>distribute</b> 3712:27	<b>drawing</b> 3659:26	<b>e11</b> 3680:18,20,21		
<b>disaggregation</b> 3587:19	<b>distributed</b> 3588:24 3617:8 3715:18	<b>dream</b> 3520:23	<b>earlier</b> 3508:17 3516:6 3534:5 3538:23 3539:20 3544:22 3571:22,23 3577:11 3583:15 3588:1,9 3594:27 3595:28 3600:17 3602:28 3622:10 3639:7 3641:25 3646:7,9 3650:24 3656:20 3661:18 3666:15 3682:1		
<b>disagree</b> 3658:6	<b>distribution</b> 3550:15,16,21, 26 3551:3,4,7 3588:3 3715:14,15	<b>drew</b> 3660:10	<b>early</b> 3689:19 3714:27 3717:27		
<b>disagrees</b> 3574:6	<b>diverted</b> 3715:4	<b>driven</b> 3712:6 3721:8	<b>earned</b> 3518:11		
<b>disbanded</b> 3621:24	<b>districts</b> 3698:28 3699:5	<b>drivers</b> 3629:7	<b>earnest</b> 3731:2		
<b>disconnect</b> 3721:23,25	<b>dive</b> 3495:7 3550:25 3564:17 3656:23	<b>driving</b> 3667:15	<b>earnings</b> 3682:17		
<b>disconnected</b> 3722:8	<b>divergence</b> 3661:14	<b>dropped</b> 3624:21 3703:1	<b>eased</b> 3661:23		
<b>discounts</b> 3559:28 3728:11	<b>divergent</b> 3600:11	<b>dry</b> 3495:21,22,25 3496:10 3497:13,21 3498:18,26 3502:20 3509:6,13 3510:27 3511:13,23,26 3512:15 3513:10 3516:10 3529:3 3541:23 3542:2,6,20 3543:2, 4,15,17 3544:3,4,15,16 3565:20,24 3566:8,13,15 3567:16 3568:6,7 3585:22, 23,27 3586:2 3587:28 3589:22 3594:9 3595:11,16 3601:25 3602:9 3606:21 3607:1 3624:12,13,20 3625:5,8,10,18,21 3626:19 3632:15,17,20 3633:24 3636:21 3638:22,23 3641:5, 14,16 3653:1,6,21,23 3661:4 3662:28 3663:3,4,9,10,11, 12,14,17,18,23 3664:11 3665:8,24,27,28 3666:1,2,9, 11,12,27 3668:3,5,7 3673:18,19 3680:28 3686:11 3687:7,8 3688:22 3691:24, 26 3692:3 3702:2 3705:18, 26,28 3716:17 3730:6 3733:6,27	<b>diversified</b> 3710:14	<b>drying</b> 3624:26,28 3625:1 3664:10,21 3665:6,26	<b>easier</b> 3521:8 3566:5 3725:10 3728:17
<b>discourages</b> 3729:28	<b>divided</b> 3511:25,26 3606:12, 16,19,22 3607:10 3609:16 3611:22 3612:1 3644:1,8,17	<b>Duct</b> 3701:18	<b>easily</b> 3536:19 3629:25 3723:15 3728:13 3733:14		
<b>discover</b> 3513:22,24	<b>division</b> 3588:15,18 3709:23	<b>due</b> 3712:16 3728:12 3729:11 3732:24 3733:19 3734:12	<b>easy</b> 3561:24 3634:18 3695:20		
<b>discovered</b> 3537:9	<b>divisions</b> 3588:14	<b>duly</b> 3614:6 3708:6	<b>EBITA</b> 3560:20		
<b>discredited</b> 3574:19	<b>doctor</b> 3569:10 3708:1	<b>dumb</b> 3640:22	<b>econometric</b> 3629:20 3641:26 3642:1 3643:4,28 3652:14 3655:13 3672:13, 16,23		
<b>discreet</b> 3622:17	<b>document</b> 3531:22 3532:2, 15,16,21 3537:8 3538:2,17 3569:10,13 3571:9 3572:2 3573:1,8,12,26,27,28 3574:12,23 3575:4 3576:12 3577:2,20,25,26,27 3578:18, 24,28 3579:8,9,23,27 3581:15 3582:16,17 3621:11	<b>dummies</b> 3679:20	<b>econometrics</b> 3622:16		
<b>discrepancy</b> 3728:13	<b>documentation</b> 3645:25	<b>dummy</b> 3628:22 3629:19 3630:15,20,22 3631:4,28	<b>economic</b> 3489:27,28 3527:27 3553:17 3622:4 3623:23 3626:28 3662:7 3706:9		
<b>discuss</b> 3584:3 3586:8	<b>documents</b> 3529:26 3569:26 3571:3 3575:20 3576:26 3580:4 3581:19,22 3592:7 3613:12		<b>economical</b> 3715:18		
<b>discussed</b> 3588:2 3594:24	<b>dollar</b> 3511:25 3598:24 3715:13		<b>economically</b> 3556:11		
<b>discusses</b> 3596:9 3712:5	<b>dollars</b> 3715:24 3718:16		<b>economics</b> 3619:6 3620:6, 11,16,18 3709:8,24,25,26		
<b>discussing</b> 3594:26 3636:23 3723:26	<b>domestically</b> 3712:19				
<b>discussion</b> 3524:2 3525:27 3545:7 3575:28 3581:10 3584:4 3593:12 3650:24 3694:28 3700:26 3722:18	<b>door</b> 3582:12				
<b>discussions</b> 3519:13 3558:2 3585:11 3586:10 3651:10	<b>double-check</b> 3605:24				
<b>disorderly</b> 3716:10 3719:7 3729:20	<b>double-checked</b> 3606:2				
<b>dispersion</b> 3651:3,13					
<b>dispersions</b> 3519:3					
<b>disposal</b> 3567:21 3631:25					
<b>dispose</b> 3631:26					
<b>dispute</b> 3648:20					
<b>disruptions</b> 3603:8					



<b>economist</b> 3618:11 3619:22 3670:10 3706:2 3709:20	<b>encouraged</b> 3499:2	<b>equals</b> 3608:18 3675:21 3713:20,26	3635:24 3637:10 3638:24 3640:7 3643:25 3656:8,27, 28 3661:11 3662:2,3 3669:11 3673:19,24,26 3682:4 3691:6 3695:7,12,23 3696:18 3698:19 3721:8
<b>economists</b> 3518:21	<b>end</b> 3551:23 3552:2 3557:16 3558:13 3571:17 3582:11,23 3588:25,26 3602:23 3603:13 3638:21 3644:10 3653:20 3692:15 3716:5	<b>equation</b> 3591:10 3624:2 3633:27 3636:6 3639:28 3675:1,21 3676:11,17,18,28 3677:18 3678:20 3679:26,27 3680:3 3683:16 3686:13 3698:17	<b>estimating</b> 3631:10 3642:3 3655:15 3658:17 3685:15
<b>economy</b> 3661:25 3717:21	<b>ended</b> 3501:28 3643:2 3689:2	<b>equations</b> 3627:14,21 3633:23,25 3635:13 3636:19 3639:22 3675:19 3679:1,22 3685:15	<b>estimation</b> 3627:2
<b>Ed</b> 3619:20,21 3647:6	<b>ends</b> 3550:18 3727:25	<b>equipment</b> 3524:4,12,28 3567:22 3601:16 3698:1 3701:14,16 3717:23 3718:3, 5,13,20 3727:20,25 3728:27	<b>etcetera</b> 3603:9
<b>edge</b> 3553:20	<b>energy</b> 3519:23 3608:4 3623:24 3627:22,24 3628:2 3629:16,26 3631:2 3635:2 3640:17 3661:21 3662:10 3679:21 3681:23 3709:20 3716:23,24	<b>equitably</b> 3569:25 3716:7	<b>evaluated</b> 3647:12
<b>edges</b> 3604:10	<b>enforce</b> 3717:14	<b>erred</b> 3637:17	<b>evaluation</b> 3659:22
<b>Edison</b> 3699:3	<b>engage</b> 3618:4	<b>error</b> 3538:24 3544:18 3549:17,25 3636:11,14 3657:10,11 3676:23 3677:14 3680:19,22,23,25	<b>event</b> 3573:15 3577:9 3630:10 3632:1
<b>editing</b> 3538:23	<b>engaged</b> 3568:4 3703:22	<b>errors</b> 3634:5 3657:13	<b>eventually</b> 3597:13
<b>effect</b> 3612:21 3669:12	<b>engineering</b> 3527:27	<b>escape</b> 3719:28	<b>everyone's</b> 3581:7 3582:2
<b>effective</b> 3733:3,11	<b>engines</b> 3535:11	<b>escaping</b> 3555:20	<b>evidence</b> 3570:26 3574:1 3577:3,5 3580:24 3588:5 3613:1,7 3617:10,13 3707:4, 12,19 3725:18
<b>efficiencies</b> 3517:1 3694:10, 22 3703:8,22,24,26	<b>English</b> 3574:7,8 3575:8,15, 19 3576:19 3580:5,25 3581:21 3582:4,6,9 3584:18 3688:1,4 3689:22	<b>essence</b> 3575:19	<b>evidentiary</b> 3576:21 3613:5
<b>efficiency</b> 3517:24 3519:18 3658:27 3659:2,16 3678:8 3704:7,12,17 3716:24 3718:23 3719:27	<b>ensue</b> 3724:25	<b>essentially</b> 3561:11 3623:19 3629:11 3664:25 3669:11 3678:11 3721:23 3722:7	<b>evolve</b> 3519:10
<b>efficient</b> 3521:8 3658:11 3659:13 3665:27 3727:20	<b>ensure</b> 3646:1,2 3659:9 3716:6	<b>establish</b> 3652:4 3663:12 3712:7	<b>exact</b> 3584:1 3644:21 3705:12
<b>effort</b> 3502:11 3638:21	<b>enter</b> 3492:1 3535:2 3547:2, 11 3582:25	<b>established</b> 3504:27 3622:23	<b>examination</b> 3574:17,20 3575:5 3579:11 3604:27 3614:9 3702:10 3708:9
<b>efforts</b> 3618:27 3717:17 3731:2	<b>entered</b> 3538:1 3707:17	<b>establishes</b> 3705:24	<b>examine</b> 3630:2 3681:28
<b>EIA</b> 3684:25	<b>entering</b> 3535:3 3548:11 3727:27	<b>establishing</b> 3650:18 3730:13	<b>examined</b> 3614:6 3708:6
<b>eightfold</b> 3597:10	<b>entire</b> 3511:7 3537:2 3591:17 3642:10 3686:10 3727:17	<b>estimate</b> 3528:5 3587:23 3622:3 3625:3,10 3626:21 3627:5 3635:7,12 3637:11 3638:9,11 3640:9,12,13 3643:17 3656:14 3657:7,8 3664:9 3665:3 3671:22 3673:16,17 3676:4,28 3698:12 3717:24	<b>examining</b> 3514:27
<b>elaborate</b> 3553:16 3601:1	<b>entirety</b> 3681:15	<b>estimated</b> 3497:3 3626:17 3627:8,10,11 3628:14 3631:5 3633:22,25 3634:12, 28 3635:8 3636:3,26 3637:3 3638:2,25 3639:22,24 3665:7,8 3672:17 3674:19 3675:4 3676:17 3682:1,2 3684:2 3699:14	<b>examples</b> 3502:18 3513:15 3522:16 3554:13 3651:9
<b>electric</b> 3637:6 3684:8,15, 16,18 3699:3 3718:4	<b>entities</b> 3583:2	<b>estimates</b> 3498:7 3527:25 3625:8 3631:1 3634:26	<b>exceed</b> 3730:8
<b>electrical</b> 3607:20 3718:5	<b>entitled</b> 3581:1		<b>exceeded</b> 3563:3
<b>electricity</b> 3519:21 3525:28 3627:25 3679:13 3684:8 3686:6 3698:12,24 3699:15, 19	<b>entries</b> 3491:17 3535:24 3547:10		<b>exceedingly</b> 3508:6
<b>element</b> 3521:15	<b>entry</b> 3548:17		<b>excess</b> 3637:8 3725:19 3727:4
<b>elevation</b> 3661:17	<b>environment</b> 3553:18 3554:9 3649:7,8		<b>exchange</b> 3527:16 3543:18 3579:8 3718:17
<b>eliminate</b> 3726:16	<b>equal</b> 3518:9 3627:16 3644:12 3728:5		<b>Exchanges</b> 3731:9
<b>eliminating</b> 3722:19	<b>equalization</b> 3554:19 3556:18		<b>exclude</b> 3540:5 3542:12 3553:7
<b>elimination</b> 3721:10,12 3726:19	<b>equally</b> 3520:6 3607:22 3681:18		<b>excluded</b> 3545:9 3581:19,23 3591:4 3631:4
<b>empirical</b> 3720:24			<b>excluding</b> 3543:26 3580:26 3591:24
<b>employ</b> 3587:2			<b>exclusively</b> 3543:15
<b>employed</b> 3555:10 3619:10, 12 3623:16 3672:24			<b>excuse</b> 3490:10 3545:23
<b>employment</b> 3607:2			
<b>encompass</b> 3672:22 3694:1			
<b>encourage</b> 3533:3			



<p>3599:14 3615:7  <b>execute</b> 3731:24  <b>executed</b> 3733:22  <b>executive</b> 3618:1,21,23  <b>exhibit</b> 3489:11 3493:14,19                      3532:4,5 3537:17,21,23,28                      3538:17 3539:26 3541:23                      3557:7 3560:23,26,27,28                      3561:3 3571:27 3574:24                      3575:11,20 3576:14 3580:7                      3582:11,13,17 3585:3                      3589:22 3592:22 3595:27                      3596:7 3605:2 3608:12,13                      3613:6 3614:12,16,18,23,24,                      25,27 3615:1,2,5,7,8,10,12,                      13,15,17,19,21,23,25,27                      3616:1,2,4,6,7,9,11,12,14,                      16,19,21,22,24,26,27                      3617:1,3,4,6,9,10,11,12,18,                      19,21 3621:9,11 3636:25                      3642:8,9,14 3646:3,6,10                      3653:7,11,15 3655:21,26                      3659:21 3660:1,2,3 3674:17                      3676:24 3688:5,17 3697:12                      3707:14,18 3708:21,22,23,                      24,25,27,28 3709:2,6                      3729:5,6  <b>exhibits</b> 3569:27 3570:1,6,                      10,22 3572:19 3574:11                      3575:17 3578:27 3579:13                      3580:25 3581:28 3612:28                      3613:4,16 3621:8,9 3625:25                      3707:4,5,11  <b>exist</b> 3692:17 3716:2  <b>existed</b> 3704:22  <b>existence</b> 3692:15 3731:4  <b>existing</b> 3562:14 3622:3  <b>exists</b> 3514:13  <b>expansions</b> 3716:19  <b>expect</b> 3491:20 3544:19                      3554:27 3587:10 3596:17                      3648:5 3657:21 3668:6                      3674:1 3698:17,22 3707:1                      3713:5 3723:2  <b>expected</b> 3496:12,14                      3501:11,23 3521:25 3554:19                      3555:10 3560:2 3563:7                      3567:12 3667:28 3726:10                      3727:22 3731:5  <b>expenditures</b> 3646:14  <b>expense</b> 3521:28 3522:3,8  <b>expenses</b> 3521:27  <b>expensive</b> 3542:9 3703:2  <b>experience</b> 3524:26 3530:28</p>	<p>3542:5 3604:2 3673:27                      3692:13 3722:28 3726:9,25                      3727:21  <b>expert</b> 3545:14 3603:24                      3620:15  <b>explain</b> 3538:19 3562:7                      3589:5 3596:18 3633:28                      3634:24 3675:4,11 3676:19                      3677:23 3678:17 3679:3                      3699:12  <b>explained</b> 3503:10 3511:15                      3531:2 3573:13 3629:25                      3630:1 3634:7 3678:1,25                      3700:3  <b>explaining</b> 3630:26 3634:11,                      12,17 3635:18  <b>explanation</b> 3728:17  <b>explanatory</b> 3630:19,24                      3631:2 3635:4 3638:4                      3661:15 3662:7 3669:9                      3678:5,7,13 3696:1  <b>explicit</b> 3552:10  <b>explicitly</b> 3559:3 3593:5                      3624:1  <b>explore</b> 3578:4  <b>explored</b> 3722:16  <b>exploring</b> 3500:15  <b>express</b> 3602:14  <b>extend</b> 3535:27  <b>extended</b> 3700:17  <b>extensive</b> 3626:7  <b>extent</b> 3567:3 3574:17,19                      3596:22 3601:9 3602:2                      3640:18 3647:17 3691:9                      3703:25  <b>external</b> 3492:23 3665:5  <b>externally</b> 3521:12  <b>extra</b> 3537:12 3561:20                      3626:23 3659:13 3678:11                      3715:3,27  <b>extract</b> 3639:3 3717:16  <b>extraordinarily</b> 3525:4,20  <b>extrapolate</b> 3649:1  <b>extreme</b> 3507:13 3718:9                      3726:4  <b>extremely</b> 3714:16 3715:6                      3717:15</p>	<p style="text-align: center;"><b>F</b></p> <p><b>F-STAT</b> 3634:25 3674:28  <b>F-STATISTIC</b> 3634:16                      3676:12,13,14 3677:4,7,10,                      12,16  <b>F-STATISTICS</b> 3635:23  <b>face</b> 3611:12  <b>faced</b> 3607:21  <b>facilities</b> 3552:5 3729:27  <b>facility</b> 3552:19 3583:8  <b>fact</b> 3525:1 3527:6 3528:14                      3533:9 3538:28 3549:15                      3580:19 3584:2 3605:19                      3606:4 3621:6 3622:28                      3635:2,22,25 3637:20                      3638:22 3649:6 3661:20,22                      3665:26 3666:10 3677:15                      3686:3 3689:14 3723:13                      3728:28 3732:27  <b>factor</b> 3514:6 3560:6                      3568:26 3593:2,7 3608:6                      3624:5 3629:15 3636:9                      3648:21 3658:3,8,9 3675:24                      3694:17,18  <b>factories</b> 3629:9  <b>factors</b> 3514:2,11,24,28                      3518:25 3519:6,25 3520:4                      3557:10 3558:17,19 3586:9                      3607:21 3610:22 3611:6                      3650:28 3652:4 3669:14                      3675:26 3679:2 3684:8                      3702:27 3714:8 3728:4,21                      3729:3 3731:7  <b>Failing</b> 3716:8  <b>fair</b> 3496:10,24,27 3497:7,                      19,26 3498:27 3499:14,22                      3500:10 3504:4,5 3508:25                      3515:7,27 3516:22 3520:9                      3522:17 3524:14 3537:3                      3557:26 3580:16 3587:12                      3608:2 3610:3 3652:1                      3654:2 3659:7,8,23 3660:24                      3661:7 3663:2 3664:24,27                      3669:26 3671:25 3672:9                      3674:2 3685:28 3704:18                      3715:18 3720:15  <b>fairly</b> 3497:8,9 3504:18                      3530:22 3546:24 3547:27                      3567:1 3660:21 3661:11,12                      3695:20  <b>faith</b> 3664:20  <b>fall</b> 3589:11 3602:21                      3610:18 3711:6</p>	<p><b>fallen</b> 3590:27  <b>falling</b> 3719:22  <b>falls</b> 3498:18 3588:19                      3708:15 3709:11 3716:14,22  <b>familiar</b> 3541:12 3559:1,3,9                      3667:2  <b>farm</b> 3519:14,16 3562:19,21                      3701:13 3727:17,24  <b>farm-to-plant</b> 3726:16,19,27                      3727:16 3728:20  <b>farmer</b> 3562:22  <b>farmers</b> 3710:11 3722:4                      3734:2  <b>farms</b> 3554:5,11 3555:5                      3563:2,4,6  <b>fast</b> 3577:1 3661:26 3705:5  <b>faster</b> 3674:25  <b>fat</b> 3724:7 3726:23,26                      3727:4,6,7,10,24,27 3728:1,                      7,11,13,17,20  <b>father</b> 3701:12  <b>favor</b> 3563:18,22 3675:10  <b>favored</b> 3564:5  <b>favours</b> 3561:22  <b>February</b> 3532:8,23 3533:27                      3534:1 3583:25  <b>fed</b> 3508:15 3559:2 3560:12                      3661:23 3719:18  <b>Fed's</b> 3559:7  <b>federal</b> 3548:23 3555:3,9,23,                      25 3618:18 3619:18 3621:23                      3622:22 3648:16 3650:14                      3689:6 3692:14 3702:19                      3710:24 3719:2 3730:15  <b>Federation</b> 3564:27 3720:4,                      11 3729:16  <b>fee</b> 3733:19  <b>feed</b> 3519:14,17,18,20                      3723:22  <b>feedback</b> 3696:25 3719:15  <b>feel</b> 3490:25 3497:17                      3498:10,13 3504:28 3506:5                      3521:3 3527:17 3570:5                      3573:2 3575:24 3589:3                      3604:13  <b>fees</b> 3733:21  <b>feet</b> 3684:12  <b>fell</b> 3654:9</p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



<b>Fellows</b> 3619:25	<b>five-year</b> 3559:1,4,6	<b>forest</b> 3709:26	<b>fully-owned</b> 3711:2
<b>felt</b> 3497:19,22 3499:3 3501:9,14 3502:7,10 3505:26 3506:3 3520:18 3539:11 3566:27	<b>fix</b> 3492:1	<b>forever</b> 3558:25	<b>fumbling</b> 3559:10
<b>fewer</b> 3691:9	<b>fixed</b> 3553:6,8,9	<b>forewarn</b> 3580:2	<b>function</b> 3695:28 3696:2
<b>fierce</b> 3717:22	<b>fixing</b> 3490:13	<b>forget</b> 3569:19 3581:26 3641:15 3693:20	<b>functioning</b> 3711:8 3716:7
<b>fighths</b> 3718:7	<b>flag</b> 3491:9 3547:14	<b>forgive</b> 3489:16	<b>funded</b> 3620:3
<b>figuratively</b> 3733:24	<b>flagged</b> 3549:13	<b>forgotten</b> 3671:7	<b>future</b> 3577:2 3702:20 3723:23
<b>figure</b> 3529:9 3654:27 3679:4,16,18 3685:7 3721:24 3728:5,14,15	<b>flags</b> 3547:13 3549:9	<b>form</b> 3542:10 3548:17 3549:23 3731:9 3733:20	<b>futures</b> 3731:21,22,23 3732:24,28
<b>figured</b> 3558:25	<b>flavor</b> 3728:10	<b>formula</b> 3515:14 3557:16 3636:15 3677:4 3682:26 3686:10 3711:12 3722:14 3723:23 3724:6,9,11,13,15, 19 3725:4 3727:1,3,7 3728:6,28 3731:27	<b>futures/options</b> 3733:12
<b>figures</b> 3625:23 3663:5,7 3713:9,10 3714:12,27 3733:8	<b>flavored</b> 3710:16	<b>formulas</b> 3514:23 3557:9 3558:17 3650:8 3675:19 3684:8 3692:16,19 3695:4 3704:4 3724:20,23 3730:15, 28 3732:5	<b>fuzzy</b> 3692:26
<b>filing</b> 3731:9 3733:20	<b>flex</b> 3726:7,10	<b>forward</b> 3518:26 3532:22 3576:1,28 3577:1 3580:14 3625:9 3633:1 3636:18 3638:5 3640:3,23 3656:14 3659:26 3676:24 3698:23 3700:8 3704:2	<b>G</b>
<b>fill</b> 3549:23,24 3642:5	<b>flip</b> 3599:24	<b>foul</b> 3581:16	<b>G&amp;a</b> 3510:18 3600:10,13,17
<b>filling</b> 3489:20	<b>flipped</b> 3509:3	<b>found</b> 3554:4 3573:13 3633:25 3638:26 3698:18	<b>gain</b> 3704:7,10
<b>final</b> 3490:19 3505:13 3535:20 3536:14 3537:1,7 3538:26,28 3539:4 3593:12 3644:5 3712:21 3725:6 3730:3 3731:5	<b>Florida</b> 3619:12 3620:9	<b>foundation</b> 3724:9	<b>gained</b> 3671:14 3694:10 3719:21
<b>financially</b> 3715:27	<b>flow</b> 3715:24	<b>four-year</b> 3644:11 3734:20	<b>gains</b> 3624:6 3658:14
<b>financials</b> 3504:3 3523:20	<b>fluctuate</b> 3724:24	<b>frame</b> 3526:23	<b>Gallagher</b> 3619:20
<b>find</b> 3528:15 3620:19 3626:10 3641:28 3691:5 3693:27	<b>fluid</b> 3494:5 3556:25	<b>frankly</b> 3572:6 3574:22	<b>gas</b> 3525:28 3627:25 3637:6 3679:9,10 3684:11,20 3685:23 3686:7 3699:3 3716:24
<b>finding</b> 3554:10 3732:23	<b>FMMO</b> 3532:10 3710:25,26, 27 3711:7,9,14,16 3712:4, 22,24,25 3714:3,5,14,20,24 3715:3,7,15 3716:6 3718:27 3719:3 3720:1,20 3722:2,17 3729:11 3730:4,27	<b>frequency</b> 3587:4	<b>gather</b> 3613:18 3646:13
<b>finds</b> 3603:27	<b>FMMOS</b> 3714:13 3721:28	<b>frequent</b> 3560:11	<b>gathering</b> 3604:19
<b>fine</b> 3509:4 3536:2 3548:3	<b>FOB</b> 3725:21	<b>frequently</b> 3547:6 3722:2	<b>gauge</b> 3560:19
<b>finer</b> 3548:21	<b>focus</b> 3528:22 3532:21 3711:10 3726:28	<b>fresh</b> 3558:5,10	<b>gave</b> 3502:18 3511:10 3546:27 3564:22 3600:16 3665:23 3666:4 3695:12 3732:9
<b>finish</b> 3628:24	<b>focused</b> 3531:18	<b>Friday</b> 3574:25	<b>gee</b> 3505:21
<b>finished</b> 3542:9 3602:4	<b>folks</b> 3492:21 3504:26 3517:10 3535:22 3547:10 3549:19 3580:2 3604:9 3608:1 3618:5 3645:22,24 3666:5 3674:14	<b>front</b> 3601:15 3660:1 3663:26 3664:1 3668:10 3686:20 3688:5 3717:4	<b>general</b> 3510:3,4,5,9 3525:18 3540:21 3587:13,17 3589:23 3590:5,7 3591:6 3594:6 3596:5 3600:7 3607:21 3612:9 3624:3 3629:5 3641:20 3649:7,27 3672:10 3698:5 3700:4 3702:28 3706:26 3709:24
<b>firm</b> 3507:10,12 3533:18 3534:20 3553:24	<b>follow</b> 3491:11,13 3515:21 3521:22 3551:20 3726:6	<b>frontier</b> 3539:21	<b>generalizing</b> 3603:7
<b>firms</b> 3529:23 3530:4	<b>follow-up</b> 3497:1	<b>fuel</b> 3700:3	<b>generally</b> 3512:9 3528:17 3594:28 3633:26 3646:16 3690:23 3698:19 3701:10 3702:3 3703:2,5
<b>first-year</b> 3644:1	<b>follow-ups</b> 3702:12	<b>full</b> 3624:18 3626:22 3644:17 3674:16 3687:23 3708:12 3727:21	<b>generate</b> 3492:5 3733:20
<b>fiscal</b> 3592:13,18	<b>food</b> 3614:21 3620:11,16 3621:13,17 3624:6,7 3679:18 3703:16 3709:22 3717:5	<b>fullest</b> 3602:2	<b>generated</b> 3715:8
<b>fit</b> 3623:18 3633:26 3634:1, 4,13 3640:2 3657:4,5,14,25 3667:28 3677:26 3678:14,16 3698:20 3699:16	<b>Foods</b> 3711:19,22 3720:7 3729:17	<b>fully</b> 3524:20 3549:22 3568:18 3710:20	<b>generates</b> 3719:5
<b>fits</b> 3639:25	<b>forecast</b> 3637:28 3639:10 3658:16 3695:17 3696:6		<b>generic</b> 3499:12 3725:27
	<b>forecasted</b> 3659:3		
	<b>forecasts</b> 3628:18 3640:3 3670:16		



<b>genetics</b> 3519:18	<b>graduated</b> 3619:14	<b>Hancock's</b> 3574:5	3667:14,18 3705:3
<b>geogra-</b> 3591:15	<b>grain</b> 3500:6,9	<b>hand</b> 3537:24 3708:4 3712:16,17	<b>heard</b> 3505:17 3513:15 3517:10 3543:22 3562:22 3583:19 3595:28 3600:27 3601:3,5 3641:24 3645:14 3654:11,14,25 3655:1 3658:1,5 3664:9 3667:17,20 3671:10 3694:27 3699:21
<b>geographies</b> 3527:11 3592:2	<b>granular</b> 3548:19	<b>handed</b> 3537:22	
<b>geography</b> 3527:7 3539:20 3591:17	<b>gray</b> 3631:15 3688:7	<b>handing</b> 3532:2	
<b>give</b> 3491:18 3492:20 3495:2,3 3498:9 3503:13 3513:17 3538:4 3546:14 3554:13 3556:2 3575:23 3576:10 3590:24 3594:6 3609:8 3619:28 3639:1 3640:1 3678:19 3683:7 3699:16 3732:15	<b>great</b> 3523:18 3538:25 3556:12 3700:8 3730:20	<b>handle</b> 3545:2	
<b>glad</b> 3582:2	<b>greater</b> 3498:13 3517:28 3541:16 3546:14 3601:18 3654:1 3721:18	<b>handled</b> 3538:8 3544:27 3701:14	<b>hearing</b> 3490:15 3501:2,4,5 3525:25 3533:22 3537:21 3558:2,8 3569:15 3572:9 3577:1 3580:24 3583:27 3586:10 3600:27 3605:2 3613:5 3614:16 3615:2,8,12, 21,25 3616:1,6,7,11,16,21, 26 3617:10,11,19 3621:9,11 3622:1 3642:9 3651:9 3692:27 3701:3,6 3708:22, 28 3709:5 3720:9 3729:5 3730:18 3731:4
<b>Glanbia</b> 3709:9 3710:3,4,5	<b>greatly</b> 3721:20	<b>handler</b> 3715:28 3733:13	
<b>glance</b> 3518:13 3547:11	<b>grew</b> 3701:13	<b>handlers</b> 3715:23,26 3722:4 3730:9	
<b>global</b> 3525:3 3710:3	<b>groanings</b> 3564:21 3565:5	<b>handling</b> 3540:23	
<b>GN</b> 3709:9,13 3710:2,4,9,14, 20 3711:20 3712:12,14,24 3716:11 3718:7 3720:5 3721:12 3722:25 3724:3 3726:18 3734:19	<b>grossly</b> 3490:4	<b>handy</b> 3537:16	
<b>GN's</b> 3716:12 3732:27	<b>grounds</b> 3572:3	<b>happen</b> 3547:4 3567:26 3574:27 3587:10 3591:2 3701:11	<b>hearings</b> 3526:25 3572:13 3574:10 3576:26 3618:14 3689:1 3700:14 3723:23
<b>GN'S</b> 3709:10	<b>group</b> 3503:8 3582:7 3688:2	<b>happened</b> 3582:26 3583:22 3588:25 3637:25 3658:21 3659:16 3695:8 3704:21	<b>hearsay</b> 3576:21
<b>goal</b> 3517:16,18 3518:4 3527:10,12 3535:28 3582:24 3662:24	<b>grouping</b> 3697:16	<b>happening</b> 3504:10 3552:1 3553:28 3568:3 3633:7,15 3658:17	<b>heat</b> 3543:19 3544:3,5,14,16 3718:17
<b>good</b> 3489:6,7 3495:20 3497:13,14,23 3498:14 3499:3 3501:22 3505:27 3514:4 3519:12 3520:16,28 3521:3 3522:25,28 3526:12, 13 3545:24 3553:2 3558:1 3566:12 3568:8 3581:7 3582:10 3584:23,24 3590:24 3601:12 3603:7 3604:16 3609:24,25 3617:15 3620:1 3633:26 3635:21,28 3642:28 3643:1 3654:6 3674:10,11 3680:27 3689:28 3690:1 3697:5 3699:18 3708:11 3714:15	<b>groupings</b> 3528:16	<b>happy</b> 3501:16 3571:17,23 3575:5	<b>heavily</b> 3504:12 3713:1 3718:12
<b>gooding</b> 3722:1	<b>groups</b> 3600:11 3732:19	<b>hard</b> 3521:19 3522:20 3582:23 3584:25 3633:2 3665:23 3692:23 3729:7 3732:23	<b>heavy</b> 3699:1
<b>goodness</b> 3634:4	<b>growth</b> 3525:21 3553:28 3628:17,18 3669:18,19 3718:27	<b>harden</b> 3546:25	<b>hedge</b> 3732:20,25,28 3733:6,15 3734:15
<b>goods</b> 3629:9 3697:13,20	<b>guess</b> 3507:4 3509:16 3520:15 3527:10 3532:7 3535:6 3559:9 3571:12 3572:6 3576:8 3580:2 3588:16 3592:1 3593:15 3599:27 3602:6 3607:16 3622:11 3641:19 3643:4,11 3645:11 3670:13 3672:22 3676:26 3685:13 3693:21 3706:10	<b>harder</b> 3572:5 3719:4	<b>hedges</b> 3733:3,11
<b>gosh</b> 3693:20	<b>guessing</b> 3571:22	<b>harken</b> 3516:20	<b>hedging</b> 3698:23 3709:15 3733:10
<b>govern</b> 3649:27	<b>guest</b> 3535:1	<b>harm</b> 3581:15	<b>helped</b> 3546:14
<b>grabbed</b> 3606:6	<b>guidance</b> 3494:2 3576:1 3581:10 3733:14	<b>hate</b> 3573:21 3729:4	<b>helpful</b> 3573:14,15 3585:7 3679:25 3693:17 3723:17
<b>Grade</b> 3727:9 3728:8,10,12	<hr/> <b>H</b> <hr/>	<b>haul</b> 3556:12	<b>helping</b> 3538:11
<b>gradual</b> 3632:28	<b>half</b> 3560:13 3594:26 3644:22 3670:17 3676:26 3682:9 3687:23	<b>hauling</b> 3555:5 3693:10 3714:8	<b>helps</b> 3517:12 3522:25 3582:1 3630:24 3642:5
<b>graduate</b> 3619:11 3620:2	<b>Hancock</b> 3489:5 3490:17 3526:5,14 3546:13 3565:5 3569:20,22,23 3570:19 3571:23 3575:8 3576:2,9 3577:13,28 3578:6,20 3579:14 3580:19 3581:13 3613:21,22 3642:27 3646:23,25 3655:24,25 3668:15,22,23 3672:18 3674:6 3681:22 3688:6 3693:2	<b>head</b> 3491:22 3495:27 3498:2 3574:5 3598:22 3611:19 3647:6	<b>hemorrhaging</b> 3551:27



<p>3687:8,9,11 3702:14,16                  3706:19 3710:18,22 3711:1                  3712:6 3714:6,7,23 3715:10,                  21,22</p> <p><b>higher</b> 3498:26 3501:24,28                  3508:16 3516:24 3517:22                  3519:17 3551:17,23 3552:2,                  23 3562:6 3568:9 3570:2                  3584:8 3597:9 3624:16,28                  3628:18 3630:9,15 3638:28                  3640:13 3647:26 3649:23,26                  3651:17 3652:23 3653:19                  3668:6,7 3673:20 3677:13,                  16 3683:25,27 3684:16,20                  3686:7,8 3692:21,24 3693:9                  3697:18 3700:18 3703:25                  3712:3 3714:8 3716:11                  3717:3,19 3719:13,26                  3720:16</p> <p><b>highest</b> 3518:6 3551:18                  3562:4 3600:10</p> <p><b>highlights</b> 3642:16,17</p> <p><b>highly</b> 3503:11 3563:28                  3627:1,4 3651:5 3706:5                  3727:20</p> <p><b>Hill</b> 3569:7,9 3580:10,11                  3581:27</p> <p><b>Hilmar</b> 3709:17,19</p> <p><b>historically</b> 3492:20 3551:6                  3714:25</p> <p><b>history</b> 3572:10 3705:3                  3725:9</p> <p><b>hit</b> 3541:12 3642:14 3657:6,                  22</p> <p><b>hobgoblin</b> 3573:23</p> <p><b>hold</b> 3604:15 3714:26</p> <p><b>hole</b> 3580:12</p> <p><b>home</b> 3555:2 3599:28</p> <p><b>honestly</b> 3531:6</p> <p><b>Honor</b> 3531:22,26 3532:12,                  20 3537:24 3545:27 3546:10                  3569:20 3573:13 3574:10                  3575:17 3576:9 3581:21                  3582:4 3612:27 3613:9,19                  3614:3,15,20 3620:14                  3642:20 3646:23 3688:2                  3707:3 3708:2,20,27                  3734:24</p> <p><b>hoops</b> 3580:9</p> <p><b>hope</b> 3499:27 3521:14                  3584:28 3596:17 3701:21</p> <p><b>hoped</b> 3501:11 3530:23                  3535:23 3555:24</p>	<p><b>hoping</b> 3545:16</p> <p><b>host</b> 3510:2 3693:3</p> <p><b>hour</b> 3546:1,4,12 3648:10                  3668:13 3684:9</p> <p><b>hourly</b> 3682:17</p> <p><b>hours</b> 3497:4</p> <p><b>huge</b> 3726:5</p> <p><b>hugely</b> 3704:21</p> <p><b>humble</b> 3520:6</p> <p><b>hundred</b> 3519:20 3556:8</p> <p><b>hundredweight</b> 3713:18,19,                  20,24,26,28 3728:5,14,22,23                  3731:22,24,25 3732:13,14</p> <p><b>Hunter</b> 3647:7</p> <p><b>hypothesis</b> 3637:18 3667:13                  3675:2,3,10,13,18 3676:18,                  22 3677:15 3682:11</p> <hr/> <p style="text-align: center;"><b>I</b></p> <hr/> <p><b>I-29</b> 3554:16</p> <p><b>Idaho</b> 3708:16 3709:11                  3710:20,24 3716:14,22                  3722:1,5,10 3732:27</p> <p><b>idea</b> 3495:2,4 3498:15                  3502:17 3519:5 3523:1                  3552:7 3589:4 3595:18                  3635:17 3639:1</p> <p><b>ideal</b> 3520:23</p> <p><b>ideas</b> 3562:12</p> <p><b>identification</b> 3528:16                  3532:3,6,11 3614:19,26,28                  3615:6,11,16,20,24,28                  3616:5,10,15,20,25 3617:2,                  7,22 3707:15 3708:24,26                  3709:3</p> <p><b>identified</b> 3519:26 3532:15                  3555:14 3568:22 3629:26                  3724:19 3728:21</p> <p><b>identify</b> 3494:16 3524:12                  3535:12</p> <p><b>identifying</b> 3509:17 3524:22                  3545:12 3548:8</p> <p><b>IDFA</b> 3498:23,25 3499:2                  3500:19 3501:13 3502:1                  3531:7 3533:6,23 3534:1,8                  3536:5,13 3538:27,28                  3560:27,28 3564:25,26,28                  3565:12 3569:1 3572:25                  3576:17 3583:24,26 3613:16                  3614:12,23,25 3615:1,7,12,                  17 3616:1,7,11,26 3617:3,8,</p>	<p>18 3618:3 3636:24 3642:8                  3643:13,15 3660:3 3667:25                  3681:16,19 3687:22 3693:13                  3708:21,23,27 3711:22,23                  3712:15 3721:9 3729:13,17                  3732:6,9,12 3734:19</p> <p><b>IDFA's</b> 3533:10 3568:22                  3583:5 3712:5</p> <p><b>IDFA-12</b> 3615:21</p> <p><b>IDFA-13</b> 3615:25</p> <p><b>ignore</b> 3720:19</p> <p><b>ignoring</b> 3727:2</p> <p><b>III</b> 3513:27 3515:6,14                  3516:14 3517:26,28 3556:11                  3711:10,12 3714:25                  3715:16,20,21,28 3716:3,13                  3719:18,23 3720:1,22                  3721:16,17,19,23,26 3722:3,                  5,8,12 3723:6,18,20,23,25                  3724:4,6,9,26 3725:4                  3726:13,16 3727:1,2,3,6,28                  3728:6,13,16,22,28 3731:18,                  28 3732:14,21,24 3733:10,                  26,27</p> <p><b>III/IV</b> 3731:15</p> <p><b>illustrate</b> 3713:13</p> <p><b>imagine</b> 3569:21,23</p> <p><b>impact</b> 3524:16,19 3543:27                  3566:28 3584:15 3623:23                  3627:7 3628:12,19 3631:1                  3632:13 3633:16,18,19                  3669:10 3683:17 3684:5                  3693:4 3716:11 3720:16                  3727:28</p> <p><b>impacted</b> 3506:5</p> <p><b>impactful</b> 3596:16</p> <p><b>impacting</b> 3623:20,26</p> <p><b>impacts</b> 3601:9 3734:15</p> <p><b>implement</b> 3651:11 3671:24</p> <p><b>implementation</b> 3644:6                  3716:9 3734:12,19</p> <p><b>implemented</b> 3644:10                  3659:14</p> <p><b>implementing</b> 3601:4</p> <p><b>implication</b> 3584:10</p> <p><b>implied</b> 3567:25 3731:21</p> <p><b>imply</b> 3720:18 3725:14</p> <p><b>importance</b> 3715:13 3730:4,                  16</p> <p><b>important</b> 3498:3 3499:3                  3533:17 3539:11 3570:20</p>	<p>3662:21 3665:11 3734:8</p> <p><b>impose</b> 3589:4</p> <p><b>imposed</b> 3589:28</p> <p><b>imprecise</b> 3522:4</p> <p><b>improve</b> 3516:28 3517:1                  3521:20 3522:24 3523:22                  3630:24 3678:6</p> <p><b>improvement</b> 3659:1</p> <p><b>improvements</b> 3520:11</p> <p><b>impute</b> 3560:2</p> <p><b>imputed</b> 3559:22</p> <p><b>in-plant</b> 3548:19</p> <p><b>inaccurate</b> 3714:7</p> <p><b>inaction</b> 3730:20</p> <p><b>inadequate</b> 3701:5,8                  3729:25</p> <p><b>include</b> 3494:28 3510:2                  3522:5 3523:18 3540:5,8                  3543:8 3554:25 3568:25                  3593:16 3599:13 3618:28                  3630:22,26 3645:27 3699:15                  3709:14 3710:7</p> <p><b>included</b> 3489:24 3495:21                  3506:24,26 3514:20 3515:20                  3516:18 3520:8 3522:13                  3534:16,22 3539:13 3540:22                  3542:17 3543:12 3544:3                  3549:19 3558:3 3565:2                  3570:13 3584:12 3585:12                  3586:20 3593:1,6,8 3597:18,                  22,27,28 3599:12 3600:22                  3624:1 3628:11 3629:13                  3635:6 3662:7 3667:11                  3686:14 3687:19 3706:16                  3712:21 3728:15</p> <p><b>includes</b> 3495:1 3629:1                  3653:19 3710:4 3712:11                  3717:21 3718:10</p> <p><b>including</b> 3522:2 3543:26                  3602:26 3627:20 3628:14                  3697:12</p> <p><b>inclusion</b> 3545:2</p> <p><b>inconsistent</b> 3622:11</p> <p><b>incorporate</b> 3599:8 3724:5</p> <p><b>incorporates</b> 3718:23</p> <p><b>incorrect</b> 3535:22</p> <p><b>incorrectly</b> 3727:4</p> <p><b>increase</b> 3517:18 3595:17                  3607:14 3632:28 3641:4,10,                  13,15,18 3643:14 3644:18,                  23 3716:28 3718:2 3719:19,</p>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



21 3721:26 3726:15,18 3728:23	<b>industry's</b> 3583:16	<b>instructions</b> 3646:18	<b>introduced</b> 3502:16 3646:7, 9
<b>increased</b> 3494:10 3517:8, 23 3550:1,4 3565:25 3566:14 3596:2 3684:18 3718:9	<b>industry-wide</b> 3722:14	<b>insufficient</b> 3555:11	<b>introducing</b> 3613:11
<b>increases</b> 3525:27 3595:18 3640:22 3641:3 3656:18 3669:15 3696:9 3700:7 3701:26 3717:6 3719:24 3720:15 3729:13	<b>inflating</b> 3519:15	<b>insurance</b> 3596:2 3716:27	<b>invest</b> 3507:15 3694:13 3695:1 3720:1,2
<b>increasing</b> 3519:17 3595:13 3628:12 3682:13	<b>inflation</b> 3525:7,9 3558:21 3559:8 3603:8 3607:21 3629:11 3661:16 3699:25 3700:9,10,12 3702:14,20,28 3711:26 3712:17 3717:20 3721:6	<b>integrate</b> 3724:10 3725:5	<b>invested</b> 3608:5 3717:9
<b>incremental</b> 3624:26 3625:3 3664:10,21 3665:6	<b>inflationary</b> 3525:21 3670:3	<b>integrated</b> 3725:3	<b>investing</b> 3718:12
<b>incurred</b> 3506:25 3519:6	<b>influence</b> 3584:11 3692:20	<b>integrity</b> 3533:19 3570:5,9 3576:24	<b>investment</b> 3507:15,18,25 3509:1,6 3511:1 3512:3,16, 19,23,27 3513:10,14 3515:8, 16 3516:14 3552:8 3553:22 3559:22 3561:27 3562:4 3563:7 3590:26 3601:20 3629:4 3685:3 3692:20 3701:20 3712:28 3717:13 3726:5 3730:1
<b>independent</b> 3623:19 3626:26 3630:25 3635:1	<b>influenced</b> 3508:10 3669:13	<b>intelligence</b> 3709:14	<b>investments</b> 3499:18 3554:17,19 3600:28 3601:3, 5,6 3608:4 3694:11,28 3695:5 3700:21 3716:19
<b>index</b> 3506:27 3508:3 3535:13 3560:4 3629:8,13 3640:16 3662:8 3680:16 3697:13	<b>influences</b> 3647:20	<b>intend</b> 3553:26 3593:25	<b>investors</b> 3718:25
<b>indexes</b> 3711:26	<b>influencing</b> 3626:27,28 3632:20 3669:14	<b>intended</b> 3501:3 3555:25 3605:11,19,22 3607:9	<b>invitation</b> 3531:13,14 3534:10 3583:16,24
<b>indexing</b> 3518:23 3519:27 3694:16	<b>inform</b> 3551:8 3601:2	<b>intent</b> 3605:11	<b>invitations</b> 3531:4
<b>Indiana</b> 3619:7	<b>information</b> 3492:7 3493:2 3495:7 3521:16 3523:19 3533:18 3546:16 3547:12 3552:4 3558:11 3560:17 3583:17 3585:27 3604:8 3622:6 3627:19,24 3637:24 3646:27 3647:2,11,23 3651:24,28 3654:16 3655:3, 13 3665:3 3686:21 3698:10 3705:24 3722:27	<b>intention</b> 3593:27 3605:14	<b>invited</b> 3496:16,18 3530:28 3534:6
<b>indication</b> 3559:10 3564:22 3633:10	<b>ingredients</b> 3506:23 3597:19 3602:18 3629:3 3698:1 3710:16,17	<b>intentionally</b> 3549:8,11	<b>involve</b> 3733:26
<b>indicator</b> 3637:10 3731:6	<b>inherent</b> 3517:18	<b>inter-week</b> 3553:3	<b>involved</b> 3572:14 3598:8 3734:4
<b>indicators</b> 3629:6	<b>inherently</b> 3642:1	<b>interaction</b> 3514:25 3558:19	<b>Ireland</b> 3710:3
<b>indirectly</b> 3586:18	<b>initially</b> 3544:3	<b>intercept</b> 3636:7	<b>island</b> 3722:8
<b>individual</b> 3492:14 3522:12 3528:28 3535:3 3559:25 3598:26 3599:7 3607:25 3611:28 3629:7 3634:26 3635:10,23 3643:9 3658:14 3695:21 3732:20,26 3733:9	<b>innocent</b> 3549:17	<b>interest</b> 3508:5,6,12,13,15, 16 3525:10,12,13,15,17 3558:22 3563:28 3599:17 3600:5 3661:24 3710:10	<b>isolated</b> 3628:19
<b>industrial</b> 3627:22,25 3628:2 3684:15,16,23,24 3698:24	<b>innovation</b> 3582:6 3659:10 3688:1	<b>interested</b> 3541:10 3621:1	<b>isolating</b> 3684:1
<b>industries</b> 3624:8 3719:12	<b>innovations</b> 3658:20	<b>interesting</b> 3552:17 3600:10	<b>issue</b> 3574:23 3580:21 3693:8 3722:16 3725:20,26 3726:22 3730:13,21
<b>industry</b> 3496:23 3504:14, 28 3505:19 3523:13 3526:1 3534:11 3560:18 3563:8 3564:18,21 3583:7 3604:14, 17 3630:5 3649:24 3664:10 3666:5,16 3667:4 3673:28 3690:25 3697:19,27 3699:1 3709:14,24 3712:18,27 3714:22 3720:2 3721:17 3722:13,18 3723:17 3725:13 3726:23 3730:19 3732:19,20 3734:8,10,13,17	<b>input</b> 3512:7 3525:18 3587:16 3659:2,25	<b>interests</b> 3734:9	<b>issued</b> 3493:6
	<b>inputs</b> 3629:10 3697:26	<b>intermediate</b> 3629:9,12 3697:13,20	<b>issues</b> 3546:21 3631:25 3667:7 3699:24 3728:26
	<b>inputting</b> 3521:17 3534:27	<b>internal</b> 3521:23 3709:16	<b>item</b> 3522:7 3601:12
	<b>inquiring</b> 3533:15	<b>internally</b> 3521:10,13	<b>items</b> 3519:28 3521:18 3522:5,19 3716:25,26 3717:21
	<b>inside</b> 3714:13	<b>International</b> 3711:19,22 3720:7 3729:17	<b>IV</b> 3715:16,22,23,26 3716:3 3720:22 3724:26 3731:18, 22,23 3732:14,21,24 3733:10
	<b>insight</b> 3546:15	<b>Internet</b> 3626:11	
	<b>instance</b> 3549:12 3571:2 3576:7	<b>interpret</b> 3507:8,9 3634:13 3699:12,13	
	<b>instances</b> 3549:10 3590:15	<b>interpretation</b> 3523:19	
	<b>Institute</b> 3618:2,9,10,16,22, 27 3619:3,4 3650:6 3686:21 3696:15 3701:7	<b>interpreting</b> 3634:9	
		<b>interrupt</b> 3557:23	
		<b>interrupting</b> 3490:11,16	
		<b>interruptions</b> 3552:13	
		<b>interval</b> 3526:27,28 3695:17, 21	
		<b>intervals</b> 3695:11,22,27 3696:5	
		<b>intervening</b> 3531:20	
		<b>introduce</b> 3729:9	



<b>January</b> 3560:5 3618:23 3653:22	3521:17 3583:7,10,12 3630:12 3669:18	<b>latest</b> 3718:23 3725:8	<b>limitation</b> 3580:13 3659:19
<b>Jersey</b> 3619:12,18 3620:4	<b>knowing</b> 3667:9	<b>latitude</b> 3523:18	<b>limited</b> 3577:4 3624:14 3728:12
<b>jive</b> 3666:1	<b>knowledge</b> 3560:18 3583:25 3630:5	<b>lavish</b> 3725:14	<b>linear</b> 3623:19 3657:2,5,8 3660:11 3661:9 3691:23
<b>job</b> 3549:20 3619:19,21 3630:26 3634:17 3635:21,28 3657:26	<b>knowledgeable</b> 3664:15	<b>laws</b> 3649:26	<b>lines</b> 3547:15 3561:26 3703:5 3726:6
<b>joined</b> 3621:23	<b>Kroger</b> 3725:28	<b>lawyer</b> 3578:18 3579:17	<b>link</b> 3534:14,20,21 3535:5,9, 15 3536:10 3693:16 3698:8
<b>joining</b> 3619:4	<hr/> <b>L</b> <hr/>	<b>lay</b> 3699:9,11	<b>linked</b> 3711:16 3723:17
<b>Joint</b> 3710:6,10,11,26 3711:2 3712:11 3717:25 3718:22	<b>lab</b> 3679:6 3680:15	<b>lead</b> 3498:1,5	<b>liquid</b> 3542:10 3723:14
<b>joke</b> 3562:24	<b>labeled</b> 3708:21	<b>leads</b> 3630:28	<b>liquidity</b> 3732:23,25 3733:19 3734:7,15
<b>jump</b> 3559:11 3580:8 3631:21,22	<b>labor</b> 3509:21,22 3510:2,8, 17 3519:24 3590:9,16 3595:21 3597:25,28 3598:7, 11 3599:10,11 3607:20 3623:25 3624:2,4,6 3626:12, 21 3627:11,14,15 3628:3,4, 7,9,10,11,14 3629:14,16,26 3630:14 3631:2,15 3632:26, 28 3635:8 3636:6,10,12 3637:4,5 3638:9,11 3647:28 3675:7,21,24 3676:19,28 3677:28 3678:20,23,24 3679:6,21,26 3680:16 3681:23,25,26,27 3682:26 3683:3,8 3685:16 3694:4,5, 7,10,12,13 3703:6,9 3716:25 3717:21 3718:20	<b>leaves</b> 3574:28	<b>list</b> 3493:24,27 3514:19 3530:27 3542:19 3585:9 3693:14 3707:13
<b>jumped</b> 3603:15	<b>laboring</b> 3599:11	<b>leaving</b> 3566:13	<b>listed</b> 3510:10 3593:21 3599:3 3631:13 3639:8 3685:20
<b>jumping</b> 3505:4 3557:24	<b>lack</b> 3567:21 3698:27 3732:24	<b>led</b> 3661:24	<b>listener</b> 3699:9,11
<b>June</b> 3535:20 3536:2 3605:18 3606:2 3607:8 3608:14 3619:13	<b>lacking</b> 3502:8	<b>ledger</b> 3489:13 3510:5 3511:5 3540:21 3587:17,22 3590:7,8 3601:13	<b>listening</b> 3641:8
<b>junk</b> 3508:4	<b>lacks</b> 3720:11	<b>left</b> 3489:24 3491:24 3584:26 3590:19 3651:16 3668:12 3690:11	<b>lists</b> 3625:13 3682:18
<b>justice</b> 3604:15	<b>lactose</b> 3542:8 3710:24	<b>legend</b> 3674:18 3678:28	<b>live</b> 3573:19
<b>justifiable</b> 3562:16 3715:19	<b>Lafayette</b> 3619:7	<b>legislative</b> 3618:4,28	<b>living</b> 3623:1
<hr/> <b>K</b> <hr/>	<b>Land</b> 3641:12	<b>legit</b> 3572:8	<b>loaded</b> 3553:6
<b>Karl</b> 3730:22	<b>landed</b> 3489:22 3643:6	<b>legitimate</b> 3505:24 3515:26 3517:15 3576:2	<b>loads</b> 3727:21
<b>key</b> 3534:26 3547:16	<b>large</b> 3499:24 3525:11 3529:15 3541:14 3554:21 3556:5 3586:20 3597:14 3610:1 3649:15 3685:21 3698:26 3714:7 3725:23	<b>lengths</b> 3718:9	<b>local</b> 3725:28
<b>kid</b> 3558:23	<b>larger</b> 3528:18 3584:16 3594:17,20 3595:13 3631:24 3665:27 3687:4 3723:17 3732:10	<b>letting</b> 3576:4 3577:23	<b>locally</b> 3556:12 3711:12
<b>kilowatt</b> 3684:9,28	<b>largest</b> 3576:14 3630:6 3685:10,17 3711:3,4 3712:8	<b>level</b> 3519:14,17 3522:12 3548:19 3553:4 3603:4 3629:12 3637:12,13,15,16 3659:16 3672:6 3673:26 3674:20,21 3675:8 3676:5,7, 10,21 3697:18 3725:9,12 3730:8 3732:16 3734:13	<b>locate</b> 3535:8 3626:7 3680:20
<b>kind</b> 3491:8 3499:11,12 3507:16 3509:22 3513:16 3519:21 3522:3 3525:8,10 3544:18 3545:5 3547:27 3549:21 3554:3 3584:25 3587:5 3591:15 3594:6 3595:15,25 3597:14 3598:22 3604:4 3607:22 3628:16 3629:6,11 3630:21 3633:2 3635:17 3638:28 3639:1,2 3640:14 3641:1 3643:11 3648:2,3 3659:19 3664:17, 19,21 3666:8,23 3667:11 3670:2 3672:1 3673:21 3674:18 3677:2 3678:13,27 3691:10 3696:12,16 3698:5 3699:21 3700:21 3701:12,13 3704:17	<b>lastly</b> 3617:16 3725:14	<b>levels</b> 3526:2 3592:25 3640:16 3669:16 3700:11 3706:26 3714:21 3724:7 3734:22	<b>located</b> 3555:28 3556:4 3637:9 3683:1 3685:27 3693:7
<b>kinds</b> 3494:7 3514:26 3527:25 3535:12 3548:16 3601:14 3604:13	<b>late</b> 3661:24 3674:15 3707:21 3717:26 3731:5	<b>lies</b> 3570:26	<b>location</b> 3494:12,15 3686:3
<b>knew</b> 3500:21 3501:3		<b>life</b> 3562:12 3651:23	<b>locations</b> 3554:23
		<b>light</b> 3497:6	<b>lock</b> 3731:25
		<b>lighter</b> 3496:12,14	<b>logical</b> 3585:2
		<b>lightly</b> 3502:22 3563:26 3566:24	<b>long</b> 3525:13 3545:28 3560:3,7 3568:1 3575:12 3586:9 3618:8 3622:13 3650:5 3671:1 3672:21 3700:15 3701:17 3704:11 3731:17,27
		<b>likelihood</b> 3706:20	<b>long-term</b> 3545:6,8,13 3563:7
		<b>likewise</b> 3540:20 3560:12	<b>longer</b> 3622:7 3626:9
		<b>limit</b> 3560:1	<b>lookback</b> 3657:17





<p><b>looked</b> 3501:18 3504:7,18                  3505:18 3507:6 3508:20                  3511:4 3515:8 3518:14                  3520:3 3527:5 3550:10                  3551:11 3556:17,20 3568:1                  3602:26 3611:12 3625:7                  3626:17 3628:4 3639:2                  3644:7 3661:10 3663:28                  3666:20 3667:13,14 3681:25                  3682:5 3686:24 3688:11                  3701:13 3717:17</p> <p><b>loop</b> 3719:15</p> <p><b>lose</b> 3642:22 3727:13,22</p> <p><b>losing</b> 3551:26 3678:8</p> <p><b>loss</b> 3548:20 3728:4</p> <p><b>losses</b> 3548:19,20 3719:11                  3727:16,17</p> <p><b>lossless</b> 3727:13</p> <p><b>lost</b> 3718:16 3727:27</p> <p><b>lot</b> 3502:28 3504:11 3507:11                  3535:15 3550:10 3551:15                  3574:22 3575:3 3596:2                  3607:24 3622:9 3626:2                  3627:2,9 3635:18,23                  3637:20 3647:18,19                  3649:21,22 3664:20 3684:18                  3685:2 3691:27 3694:27                  3698:25 3700:4 3701:26                  3718:23 3722:10</p> <p><b>Louis</b> 3559:2,7</p> <p><b>lovely</b> 3593:17 3603:26</p> <p><b>low</b> 3502:6 3504:18 3508:6                  3512:14,17 3524:21,27                  3528:16,18 3544:5 3550:18,                  22 3551:21 3561:8,20,22,28                  3562:11 3588:13,20,22                  3589:9,11 3596:18 3598:23,                  27,28 3599:25 3600:17                  3610:17 3651:14 3714:23,24                  3715:21,23 3718:7,10                  3726:27 3729:23 3732:19</p> <p><b>lower</b> 3490:6 3504:20                  3508:7 3516:25 3555:3                  3556:13 3594:20 3601:20                  3628:18 3639:15 3640:10                  3651:18 3661:19 3665:26                  3673:17 3675:15 3682:7,9,                  10 3683:24,27 3684:4                  3685:27 3686:4 3703:24                  3706:25 3716:24 3721:2</p> <p><b>lowest</b> 3600:8 3715:24</p> <p><b>lucrative</b> 3726:12</p> <p><b>lunch</b> 3613:8,10,22,23</p> <p><b>luncheon</b> 3613:25</p>	<p><b>M</b></p>	<p><b>machine</b> 3550:26</p> <p><b>made</b> 3499:18 3502:20                  3505:11 3515:17 3520:4                  3525:25 3529:2 3534:17                  3538:27 3541:18 3551:13                  3552:10 3566:21 3569:28                  3572:21 3576:18 3588:8                  3595:25 3599:5 3601:1,14,                  20 3613:4 3643:23 3695:1,5                  3724:17 3729:18</p> <p><b>magnitude</b> 3682:10</p> <p><b>mailbox</b> 3713:8,10,16,23                  3714:3,17,28 3733:4,7,8</p> <p><b>mailing</b> 3708:12,13,14</p> <p><b>main</b> 3709:13</p> <p><b>maintain</b> 3493:24 3494:8                  3524:3 3533:18 3570:14                  3716:6</p> <p><b>maintained</b> 3536:15 3565:26                  3566:7 3712:23,25 3713:4</p> <p><b>maintains</b> 3721:13</p> <p><b>maintenance</b> 3629:2 3698:1                  3701:20 3711:8</p> <p><b>major</b> 3509:25 3524:4                  3592:3 3716:19 3722:9                  3732:18</p> <p><b>majority</b> 3499:24 3587:20                  3733:2</p> <p><b>make</b> 3496:13 3500:7,12,15                  3501:4 3513:26 3514:25                  3515:9,11,20 3516:12,18,19                  3517:2,3,12,19 3518:11,28                  3519:20 3520:2,11,12,24                  3521:7,15,24 3522:1                  3523:11,16 3525:26 3531:16                  3533:23 3535:7 3537:6                  3538:1 3542:7 3544:24                  3545:4,14 3546:25 3551:5,9,                  23 3553:26 3554:6 3555:12                  3556:14 3557:6,10,17                  3558:7 3559:13,17,25                  3561:19 3565:14 3567:19,22                  3569:25 3570:18 3571:18                  3573:7 3576:7 3578:1                  3581:5 3587:24 3592:20,25,                  28 3593:5,8,13,24,28                  3594:3,7 3604:3 3605:7                  3606:8 3610:12,15 3622:22,                  28 3625:5 3638:5 3640:3                  3641:23 3643:14 3644:18                  3645:12 3650:19,23,26                  3651:2,11,25,26,28 3652:5,                  16 3655:3 3656:6 3658:2,24                  3662:20,23 3663:11                  3664:12,22 3666:7 3670:11,</p> <p>23,28 3671:2 3673:6                  3681:18 3682:4 3688:7                  3692:17,19,21,22,24,25,27                  3693:5,17 3694:8 3699:28                  3700:17,21,24 3701:5,25                  3705:2,9 3711:11,17,20,28                  3712:7,15,21,22,23,24,26,28                  3713:3 3714:7,16,28                  3715:10,13,16,20 3716:4,6,                  8,13,20 3718:14 3719:24                  3720:3,5,12,16,17,24                  3721:1,8,21 3724:27,28                  3725:8 3728:4,17 3729:14,                  19,23,25 3730:6,10,15                  3732:2,6,8,12,18 3733:5                  3734:20</p> <p><b>makers</b> 3536:5,13 3565:1                  3711:18,21 3720:6 3726:3,7</p> <p><b>makes</b> 3499:7 3552:17                  3554:1 3566:5 3591:16                  3627:5,13 3664:16 3693:10                  3711:3 3716:16 3725:10                  3733:16</p> <p><b>makeup</b> 3690:16,21</p> <p><b>making</b> 3500:5 3507:4                  3515:1 3520:15,23 3522:21                  3542:13 3545:1 3553:21                  3554:18 3565:19 3567:20                  3571:1 3602:13 3604:9,13                  3607:23 3640:14 3647:19                  3649:8 3671:18 3676:23                  3677:14 3719:4 3727:4,7</p> <p><b>mammoth</b> 3541:7,13</p> <p><b>managed</b> 3547:10</p> <p><b>management</b> 3620:7,8                  3646:12 3709:8 3711:15                  3713:1 3729:12 3733:9,13                  3734:12</p> <p><b>manager</b> 3590:14 3709:20</p> <p><b>managing</b> 3734:2</p> <p><b>mandatory</b> 3495:17 3520:25                  3620:26 3652:10 3670:27                  3672:3,9,26</p> <p><b>manipulate</b> 3524:8</p> <p><b>manner</b> 3542:14 3547:11                  3622:11 3715:19</p> <p><b>manual</b> 3646:19</p> <p><b>manufacture</b> 3543:7 3686:5                  3702:24</p> <p><b>manufactured</b> 3548:12                  3646:15 3686:12</p> <p><b>manufacturer</b> 3544:28                  3711:4 3719:20,25</p> <p><b>manufacturers</b> 3560:19                  3630:6 3698:3 3711:13</p> <p>3717:22 3719:1,10,16                  3721:20,28 3722:7 3726:10</p> <p><b>manufacturing</b> 3533:25                  3543:11 3553:1 3620:23                  3621:24 3622:3,8,24                  3623:21,24 3624:7,8,10,11,                  13 3625:15,19,21 3626:18                  3628:5 3629:9 3631:12                  3632:5 3636:4,8 3637:5                  3638:1,10,12 3639:18,23,26                  3640:7,17 3641:10,13,18                  3645:3,6,22 3650:3,9,21,23                  3652:3 3653:2 3656:5                  3662:22,25 3664:16 3666:12                  3669:5,14 3673:16 3675:20,                  23 3676:4 3678:20 3680:8                  3682:18 3683:17 3690:21                  3691:17 3693:11,22,27                  3695:3 3700:16 3711:25,26                  3716:11 3718:7,8 3719:26                  3720:25,28 3721:5 3727:13,                  17 3729:24,26 3730:14</p> <p><b>margin</b> 3498:11 3513:12                  3517:20 3560:20 3715:3                  3721:26 3731:26 3732:10</p> <p><b>margins</b> 3517:13 3719:5</p> <p><b>mark</b> 3532:3 3533:24                  3711:27</p> <p><b>marked</b> 3531:28 3532:5                  3569:5 3574:24 3614:12,18,                  22,24,25,27 3615:4,5,9,10,                  14,15,18,19,22,23,26,27                  3616:3,4,8,9,13,14,18,19,23,                  24,28 3617:1,4,5,6,11,18,19,                  20,21 3621:8,11 3625:25                  3653:7 3707:14 3708:22,23,                  25,28 3709:1,2</p> <p><b>market</b> 3491:18 3508:11,19,                  24 3511:6,17,20,22 3512:6                  3523:28 3524:15 3556:7                  3562:6 3567:18 3591:1                  3619:13 3620:4 3662:5                  3694:4 3709:14 3713:5                  3714:4,25 3715:11 3717:16                  3719:22 3722:19,22 3723:7,                  9,12,14,16,19 3728:25                  3730:1,10 3731:3,6,26,28                  3732:3 3734:7</p> <p><b>market-clearing</b> 3730:5</p> <p><b>marketability</b> 3728:12</p> <p><b>marketing</b> 3506:25 3555:25                  3556:9 3593:1,4,7,16                  3618:18 3620:3,8,12,22                  3646:18 3710:25 3711:7                  3712:12,14,16,20 3716:10                  3719:7 3729:20</p> <p><b>marketplace</b> 3568:3 3673:14</p> <p><b>markets</b> 3723:8,9 3726:9                  3728:2 3733:22,24</p>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



<b>marks</b> 3501:10	<b>members</b> 3498:25 3500:20 3501:14 3533:6 3534:8 3564:25 3618:5,13 3701:7 3702:3 3730:11	3497:14,21 3502:19,20 3503:1 3509:6,13 3510:27 3511:13,23,26 3512:15 3513:11 3515:28 3516:10 3519:20 3526:17 3529:3 3541:23 3542:3,5,6,13 3543:17 3544:3,4,15,16 3553:28 3554:6,18,28 3555:1,25,28 3556:11,19,25, 26 3557:2,18,24 3558:14 3559:18,27 3563:20 3564:1, 7,9,13,27 3565:20,24 3566:8,13,15 3571:26 3576:17 3578:3,17 3582:6 3587:28 3594:9 3595:16 3606:21 3607:1 3617:12 3618:6,18 3619:1,13 3620:4, 22 3624:27 3625:1,5,8,22 3626:19 3632:15,18,20 3633:24 3636:21 3638:23 3641:5,14,16 3650:9 3653:1, 6,21,23 3661:4 3662:28 3663:10,17 3664:11 3665:28 3666:2,9,12,27 3668:4,7 3673:19 3681:1 3686:11 3687:15 3688:1,6,22 3691:24,26 3692:3 3693:9 3702:2 3704:27 3705:18,26, 28 3709:15 3710:12,21,22, 25,28 3711:10,14 3713:1,8, 10,12,14,15,16,18,24 3714:8,10,14,20,23,24 3715:5,6,9,10,23,25,28 3716:15 3717:24 3718:17,18 3719:3,19 3720:4,10,22 3721:20,24,26,27 3722:3,4,7 3725:22 3727:2,14,18,21,23, 26 3728:5 3729:1,16,27 3730:5,6,7,9,23 3731:18,27 3732:3,14,15,21,24 3733:2, 7,8,10,13,26,27	<b>minimum</b> 3559:27 3648:9, 13,16,22 3704:26 3712:26 3714:5,6 3718:21 3720:20, 22 3729:26 3730:5
<b>mass</b> 3547:23 3548:18	<b>membership</b> 3531:8 3568:22 3702:4	<b>minimum-regulated</b> 3604:3	<b>minimums</b> 3555:4 3719:3
<b>massive</b> 3579:15 3717:6	<b>memory</b> 3527:4 3577:9 3692:26	<b>minus</b> 3557:17 3606:12,16, 19,22 3607:9	<b>minute</b> 3555:21
<b>Master's</b> 3620:10	<b>mentally</b> 3606:6	<b>minutes</b> 3545:28 3546:4 3582:18 3668:14 3707:20,21	<b>mischief</b> 3535:16 3571:12
<b>master's</b> 3709:27	<b>mention</b> 3628:21	<b>missed</b> 3594:26 3704:18	<b>missing</b> 3491:10 3589:25
<b>match</b> 3674:1	<b>mentioned</b> 3524:3,20 3535:25 3547:22 3558:21 3563:23 3567:7 3594:19 3597:17 3602:28 3621:10 3648:8 3676:13	<b>mix</b> 3505:11	<b>model</b> 3494:15 3546:21,23, 25 3547:5 3559:16 3560:13 3624:22 3627:8,10 3628:14, 17 3630:20,25 3631:5 3633:18,21 3634:12,16,18 3635:4,7,8,9,10,19,21,27 3636:5 3638:14,23,25 3639:5,6,12,18 3640:7,9,12, 13,15,20,24,27 3641:3,6,26 3642:1 3643:3,4 3655:15,17 3656:5,8,10,12,14,27,28 3657:4,5,9,12,14,16,25 3658:12,13 3660:15,21 3661:7,9,11,19,26 3662:1,2, 3,6,12 3669:25 3672:16,23 3675:3,20 3677:27 3678:2, 25 3682:2,3,14 3683:21 3690:12,15 3691:6,10 3694:14 3695:10,20 3696:1, 11 3698:19 3699:14 3731:13
<b>material</b> 3549:4 3572:28 3573:1 3623:25 3662:9	<b>mentally</b> 3606:6	<b>modeled</b> 3669:4	<b>modeling</b> 3518:12,22 3519:10 3636:19 3652:15 3655:14 3656:2 3657:28 3659:3,10 3664:24 3665:1,4, 14 3668:26 3670:8,22 3673:3,8,18
<b>materials</b> 3494:13 3629:16 3661:21 3663:1 3669:4 3697:28 3698:7	<b>mention</b> 3628:21	<b>modelling</b> 3660:7	<b>models</b> 3626:21 3633:13 3635:11 3636:2,3 3639:21 3678:3,15 3695:21 3731:15 3732:9,16
<b>math</b> 3512:26 3513:3,5 3566:3,5 3567:1 3584:17 3593:18,26 3606:11,12 3609:20,21	<b>mentioned</b> 3524:3,20 3535:25 3547:22 3558:21 3563:23 3567:7 3594:19 3597:17 3602:28 3621:10 3648:8 3676:13	<b>moderated</b> 3699:26	<b>moderating</b> 3603:13
<b>mathematical</b> 3731:19	<b>Mercantile</b> 3731:9	<b>modern</b> 3726:25 3727:21	<b>modernization</b> 3717:5
<b>matter</b> 3553:13 3572:8 3576:20,21	<b>message</b> 3490:13,23	<b>moisture</b> 3724:7	
<b>matters</b> 3500:13 3566:21 3568:14 3595:26 3654:13, 16,28	<b>messages</b> 3490:11		
<b>maximize</b> 3726:8	<b>met</b> 3621:1		
<b>maximum</b> 3734:21	<b>method</b> 3492:9 3521:23 3523:10,14 3563:11 3665:9 3667:7		
<b>meaning</b> 3503:26 3505:2 3519:9	<b>methodologies</b> 3521:23		
<b>meaningful</b> 3685:24	<b>methodology</b> 3502:14,23 3504:10 3505:9 3508:2 3509:18 3518:15,20,21,27 3519:4,11,27 3520:7 3546:15 3564:19,25 3565:7 3623:15 3664:8 3720:13		
<b>means</b> 3507:16 3518:22 3633:28 3637:15 3674:19,21 3675:8 3676:3,21 3677:24 3678:20,22 3682:20	<b>methods</b> 3659:22		
<b>meant</b> 3499:24 3505:8 3539:22 3734:5,8	<b>metropolitan</b> 3698:27 3699:5		
<b>measure</b> 3528:9 3629:11 3634:1,4 3675:6 3677:26 3678:14,16 3679:10 3727:15,16 3729:2	<b>Mexico</b> 3554:23 3556:4,7 3710:26		
<b>measured</b> 3634:15	<b>MFG</b> 3679:3 3682:16		
<b>measurement</b> 3727:18	<b>Michael</b> 3532:23		
<b>measurements</b> 3658:9	<b>Michigan</b> 3682:28 3683:8, 23,25 3684:4 3710:27 3718:22 3730:22		
<b>measures</b> 3551:2 3589:1 3624:3 3680:25	<b>micronutrients</b> 3710:16		
<b>mechanism</b> 3555:24	<b>mid-february</b> 3583:25		
<b>mechanisms</b> 3555:14,15	<b>middle</b> 3550:22 3592:4 3631:16 3660:10		
<b>median</b> 3543:23 3561:16 3598:24 3682:19	<b>midpoint</b> 3598:24 3718:1		
<b>meet</b> 3645:23	<b>Midwest</b> 3554:16 3592:4 3683:1		
<b>member</b> 3533:10 3583:26 3696:14	<b>Mike</b> 3681:12		
	<b>miles</b> 3556:8		
	<b>milk</b> 3494:5 3495:21		



<b>moment</b> 3490:12 3556:1	<b>NASS</b> 3494:18 3545:23,24 3609:6,9,10,16 3686:18	<b>newest</b> 3718:22	<b>North</b> 3709:26
<b>Monday</b> 3574:26	<b>national</b> 3515:28 3539:13 3564:27 3571:26 3576:17 3578:3,17 3603:4 3617:12 3679:7,16,18 3682:3,7,13 3683:9,13 3684:21 3685:25 3688:6 3720:4,10 3729:16	<b>newly</b> 3658:10	<b>Northeast</b> 3592:3
<b>money</b> 3507:15 3551:26,27 3553:19 3554:10 3556:18 3619:28 3733:16	<b>nationally</b> 3711:13	<b>NFDM</b> 3731:18,21 3733:6	<b>Northwest</b> 3641:17
<b>monitor</b> 3717:14	<b>nationwide</b> 3648:3 3681:27	<b>nice</b> 3490:14 3492:20 3690:1,3 3697:4	<b>notable</b> 3696:25
<b>monitored</b> 3560:9	<b>natural</b> 3561:21 3588:21,26 3589:2 3627:25 3637:6 3679:9,10 3684:11,20 3685:23 3686:7 3716:24	<b>Nicole</b> 3559:21	<b>note</b> 3495:20 3510:14,15 3539:2 3571:25 3576:12 3622:25 3693:12
<b>month</b> 3552:14 3684:25,27 3700:7	<b>nature</b> 3533:12,14 3573:12 3583:5 3600:16 3626:1 3694:4 3705:10	<b>night</b> 3606:3	<b>noted</b> 3499:6 3504:14 3510:23 3523:17 3549:28 3550:14 3553:12 3557:6 3563:10 3568:14 3580:25 3601:17 3604:22 3625:2 3641:10,12,17 3730:13,17
<b>monthly</b> 3552:28 3603:12,16	<b>NDPSR</b> 3494:4,22,25,28 3495:21,25 3496:2,5 3497:21 3505:28 3529:2 3534:18 3539:8,14,22 3540:1 3545:19 3552:2 3567:15,27 3586:22 3597:7, 10,13 3719:14,23,25,27 3722:20 3723:2,4,8 3724:14 3725:22 3727:9 3728:8 3733:1	<b>NMPF</b> 3720:11 3721:1 3729:13,16,22 3730:3 3732:6,9,13	<b>notice</b> 3528:17 3599:23 3693:14 3698:10
<b>months</b> 3545:16 3548:12 3553:6,10 3567:15	<b>NDPSR-REPORTABLE</b> 3527:14 3539:25	<b>NMPF-18A</b> 3617:13	<b>noticed</b> 3603:17
<b>Moody's</b> 3506:27 3508:3 3560:4	<b>NDS-</b> 3586:21	<b>noise</b> 3714:10	<b>noticing</b> 3603:14
<b>morning</b> 3489:1,6,7 3526:12,13 3582:10 3584:23,24 3734:27	<b>nearby</b> 3555:2	<b>non-audited</b> 3720:27	<b>noting</b> 3500:3 3734:16
<b>motivation</b> 3572:19 3650:4	<b>necessarily</b> 3529:6 3542:15 3551:14 3561:13,20 3599:9 3608:3 3624:18 3648:5 3657:9 3662:4 3699:27 3700:11,20 3734:16	<b>non-cash</b> 3524:22	<b>November</b> 3689:7
<b>motivations</b> 3496:25	<b>needed</b> 3489:8 3506:21 3556:27 3557:2,5 3712:19 3718:21 3719:3 3724:20 3729:14 3730:1,10	<b>non-disclosure</b> 3533:13 3583:3	<b>null</b> 3637:18 3675:3,9,13,17 3676:18,22 3677:15
<b>motors</b> 3718:4	<b>needle</b> 3657:27	<b>non-farm</b> 3628:11 3680:16	<b>number</b> 3489:18,19,21,23, 27 3490:2 3491:14 3495:2 3497:23 3498:6 3502:6 3503:13 3504:19 3505:17 3507:2,6,8,27 3508:1,9,20, 27 3509:5 3511:11,21,25 3512:7,10 3515:28 3516:11 3521:17 3529:15,22 3530:23 3532:5,24 3535:26 3550:24 3562:7,14 3566:11 3571:7,8, 27 3576:14 3578:8,9,10 3587:6 3589:8,11,25 3595:1, 9,12 3596:27 3597:8 3598:27 3599:1 3606:9 3607:13 3608:27 3609:4,6, 17,20,22 3610:3 3612:2,12 3613:12 3614:16,18,27 3615:5,10,15,19,23,27 3616:4,9,14,19,24 3617:1,6, 14,21 3624:20,25 3629:4 3631:21 3632:27 3637:21 3646:10,22 3650:27 3653:27 3655:21,22 3663:12,18 3664:9,14,16,20 3665:5,20 3666:16,22 3669:7,20,24,25 3670:12 3671:7,13,15,27 3672:27 3673:28 3677:10 3678:5,16 3683:21,24,26 3686:25 3689:6 3690:25,27 3691:5 3692:8 3695:12 3696:2 3698:5 3699:12,14 3704:25 3708:22,25 3709:2 3720:21 3723:15 3730:18
<b>move</b> 3489:9 3556:26 3557:4 3569:4 3573:4,5,18 3575:5 3580:14 3612:28 3680:3 3705:5 3707:4 3734:21	<b>negate</b> 3722:20	<b>non-labor</b> 3509:28 3510:17	<b>numbered</b> 3621:9
<b>moved</b> 3535:28 3582:24 3619:21	<b>negative</b> 3567:25 3657:12 3665:20 3680:13 3698:13 3699:12 3713:27,28	<b>non-number</b> 3591:4	<b>numbering</b> 3538:3
<b>movement</b> 3691:9	<b>neglects</b> 3514:2	<b>non-reportable</b> 3586:21	
<b>movements</b> 3554:28	<b>negligible</b> 3543:27	<b>non-reporting</b> 3600:15	
<b>moving</b> 3556:19 3557:1 3627:3 3661:22 3720:3 3721:19	<b>negotiated</b> 3720:21	<b>non-supervisory</b> 3628:5 3682:18	
<b>mozzarella</b> 3724:1,3,5,6,10, 14,16,22 3725:2,11,16,17,27 3726:5,8,11	<b>negotiating</b> 3718:11	<b>non-transformed</b> 3565:22, 23 3596:10	
<b>multiple</b> 3630:13 3715:2 3717:12 3730:28 3733:23,25	<b>net</b> 3513:26	<b>non-union</b> 3648:1	
<b>multiplied</b> 3597:5 3680:7	<b>neurons</b> 3527:4	<b>nonetheless</b> 3719:21	
<b>multiply</b> 3608:25 3638:6,12 3680:15		<b>nonfat</b> 3495:21 3497:13,21 3502:20 3509:6,13 3510:27 3511:13,23,26 3512:15 3513:10 3516:10 3529:3 3541:23 3542:2,6,9 3543:17, 19 3544:3,4,15,16 3564:12 3565:20,24 3566:8,13,15 3587:28 3594:9 3595:16 3596:21 3606:21 3607:1 3625:1,5,8,21 3626:19 3632:15,17,20 3633:24 3636:21 3638:23 3641:5,14, 16 3653:1,6,21,23 3661:4 3662:28 3663:10,17,23 3664:11 3665:28 3666:2,9, 12,27 3668:3,7 3673:19 3680:28 3685:11,22 3686:11 3687:4 3688:22 3691:24,26 3692:3 3702:2 3705:18,26, 28	
<b>multiplying</b> 3608:26 3609:5		<b>nonlabor</b> 3602:22	
<b>MW</b> 3710:7		<b>norm</b> 3525:9	
<b>MWC</b> 3717:25 3718:22		<b>normal</b> 3525:21 3550:20,26 3551:3 3588:3 3699:24	
<b>N</b>			
<b>names</b> 3571:15			
<b>narrative</b> 3578:14			
<b>narrow</b> 3549:20			



<b>numbers</b> 3490:8 3492:26 3501:19 3503:15 3504:17 3508:25 3522:2 3524:15 3533:5 3548:13 3558:4 3561:3 3566:4 3574:2 3578:3 3579:18 3589:16 3590:5,8 3593:8,10,12 3594:14 3595:14 3596:26,27 3599:9 3600:21 3601:3,7,22 3605:18,27 3606:2,24 3607:4,7,8 3610:13 3612:10 3613:6 3622:7 3629:24 3633:3 3638:27,28 3639:9 3640:6 3643:24 3644:2,7,8 3647:22,24 3653:5,17 3654:22 3655:27,28 3656:7, 26 3657:1,3,18,19 3661:10, 20 3663:12,27,28 3664:5,7, 27 3665:18 3666:3,10,20 3667:8,13,16,27 3668:10 3669:3 3670:22 3673:8,9,13 3674:2,3 3678:4,5 3679:22 3682:3,7 3684:7 3685:5 3687:22 3691:7 3700:5 3705:23 3706:24 3707:14,18	<b>occasionally</b> 3587:5 3645:26 <b>occur</b> 3523:14 3586:27 <b>occurred</b> 3530:18 3544:9 3592:11 3632:22 3659:11 <b>occurring</b> 3554:14 <b>October</b> 3713:17 <b>odd</b> 3599:1 3667:13 <b>off-spec</b> 3549:4 <b>offer</b> 3571:1 3581:25 3604:6 3720:13 <b>offered</b> 3573:9 3576:20 <b>offering</b> 3569:26 <b>offerings</b> 3604:1 <b>office</b> 3619:22 3620:4 3709:11 <b>official</b> 3538:4 3621:12 3693:13 3698:10 <b>offset</b> 3522:14 3719:13 <b>oftentimes</b> 3594:19 3695:28 <b>omission</b> 3549:18 <b>on-farm</b> 3717:14 <b>one's</b> 3570:7 <b>one-half</b> 3709:18 <b>ongoing</b> 3525:22 3632:24 <b>online</b> 3534:14 3546:21 3554:26 3725:27 <b>ooh</b> 3504:7 3653:25 <b>Oops</b> 3617:5 <b>open</b> 3509:3 3632:19 3691:21 <b>opening</b> 3632:12 <b>opens</b> 3630:6,8 <b>operate</b> 3552:18 3666:1 3699:4 3710:24 3719:9 3729:27 <b>operates</b> 3552:23 <b>operating</b> 3551:21 3555:23 3595:21 3624:17 3649:6 3651:25 3701:9 <b>operation</b> 3490:7 3493:5 3507:12,16 3521:10 3552:13 3646:13 3692:11 <b>operations</b> 3497:24 3519:25 3528:11,19 3539:23 3590:1 3609:28 3610:1 3728:27	<b>operations'</b> 3729:26 <b>opinion</b> 3504:22 3556:3 3600:6 <b>opportunities</b> 3519:23 3563:25 3572:26 3583:18 3719:27 <b>opportunity</b> 3507:17 3517:3, 8 3520:15 3525:23 3526:19 3541:7 3556:25 3602:24 3603:21,23 3604:6 3610:12 3658:3 3670:26 <b>oppose</b> 3722:26 3723:5 <b>opposed</b> 3557:24 <b>opposes</b> 3721:12 3722:25 3724:3 3726:18 <b>opposite</b> 3607:1 3716:2 <b>Optimum</b> 3710:6 <b>option</b> 3507:13 <b>options</b> 3732:24 <b>orally</b> 3571:10 <b>orange-brown</b> 3631:16 <b>order</b> 3489:2 3534:26 3535:5 3555:3,23,25 3556:9, 12 3565:14 3570:13 3585:2 3618:18 3619:18 3621:23 3622:22 3650:10,11,14,17 3652:15 3673:5 3682:10 3692:15 3702:23 3710:25 3724:17 3730:15 <b>order's</b> 3713:11,12 <b>orders</b> 3555:9 3556:23 3702:19 3719:2 3733:5 <b>ordinary</b> 3623:17 <b>organization</b> 3497:10 3501:13 3583:28 3710:8 <b>organizations</b> 3505:19 <b>organized</b> 3492:9 3600:24 <b>orient</b> 3582:22 <b>orientation</b> 3517:7 <b>original</b> 3505:9 <b>originally</b> 3538:1 3717:28 <b>originate</b> 3656:28 <b>ounce</b> 3726:1 <b>outdated</b> 3671:13 3714:16 3729:19 <b>outlier</b> 3547:8 3549:15 3651:14 3699:23,27 <b>outliers</b> 3651:19	<b>output</b> 3711:2 3717:10 <b>outrageous</b> 3562:14 <b>overage</b> 3548:24 3719:22 <b>overages</b> 3719:17 <b>overallocated</b> 3502:25 3503:2 <b>overallocating</b> 3502:23 <b>overestimated</b> 3504:9 <b>overlap</b> 3506:10 3526:16 3530:23 <b>overlapped</b> 3499:23 3530:14,19 3599:21 <b>overlapping</b> 3530:11,18 3622:15 <b>overrepresented</b> 3591:26 <b>oversimplify</b> 3557:16 <b>overstated</b> 3730:7 <b>overstating</b> 3560:6 <b>overvalue</b> 3727:2 3728:13, 28 <b>overvalued</b> 3596:22 <b>ownership</b> 3530:4 3710:9 <b>owns</b> 3710:20
<b>O</b>			<b>P</b>
<b>O'LAKES</b> 3641:12 <b>obfuscated</b> 3567:3 <b>object</b> 3538:9 3569:8 <b>objected</b> 3571:19,26 3572:3 3573:2 <b>objecting</b> 3569:9 <b>objection</b> 3610:8 3707:7 <b>objections</b> 3564:23,24 3569:6 3581:7 3613:3 3707:11,27 <b>obligation</b> 3496:21 <b>observable</b> 3528:7 <b>observation</b> 3553:16 3678:23 <b>observations</b> 3528:14,27 3529:4,10,24 3530:6,14,15 3550:9 3552:3 3561:16 3565:19 3568:11 3591:5,23 3594:5 3596:8 3598:26 3696:2 <b>observe</b> 3523:7 3588:23 <b>observed</b> 3527:12 3562:27 <b>obvious</b> 3504:25 3549:26 3551:13 3555:17,22			<b>Pacific</b> 3699:3 <b>package</b> 3541:4,10 3548:9 3726:1 <b>packaged</b> 3725:17,21,25 <b>packages</b> 3597:21,25 <b>packaging</b> 3492:11,12 3509:27 3510:17 3522:11 3540:19,22 3541:9 3542:12, 18 3585:13,16 3597:13,26 3598:5,8,10,11 3599:10 3629:3 3697:28 3716:25 3717:10 <b>pages</b> 3489:9 3546:23,28 3674:16 3729:7 <b>pagination</b> 3538:5 <b>paid</b> 3506:23 <b>pandemic</b> 3525:3 <b>paper</b> 3507:24 3536:22,23 3537:1 3538:16,18 3539:3 3578:16 3636:25 <b>papers</b> 3537:14



<p><b>paragraph</b> 3495:10 3498:24                  3499:5 3530:3,5 3533:1,21                  3538:14 3557:13 3582:13                  3596:9 3688:11,12,14</p> <p><b>paragraphs</b> 3538:22</p> <p><b>parameter</b> 3514:22 3548:5                  3634:26,27 3635:24 3636:7                  3637:11,19 3638:9 3674:19                  3676:4 3680:21 3682:4                  3695:23 3698:12 3699:15</p> <p><b>parameters</b> 3514:24 3557:9                  3558:16 3627:5 3636:27,28                  3638:2,14 3698:28</p> <p><b>paraphrase</b> 3658:24</p> <p><b>Parmigiano</b> 3541:17</p> <p><b>part</b> 3492:21 3497:10                  3504:16 3508:15 3510:9                  3538:24 3543:8 3546:23                  3550:26 3551:24 3554:1                  3556:7 3562:8 3587:24                  3591:24 3613:4 3618:17                  3619:17 3620:3 3622:23                  3623:2 3626:8 3632:18                  3639:4 3643:5 3649:15                  3650:22 3685:9 3686:13                  3688:28 3691:8 3693:8                  3704:7 3710:2 3714:7                  3726:3</p> <p><b>participants</b> 3492:22 3499:2                  3505:19 3534:11 3546:19                  3560:17 3564:18 3583:10,12                  3731:3,7</p> <p><b>participate</b> 3496:16 3500:20                  3501:14 3530:25,28 3531:5,                  10 3534:7,8,11,16 3562:19                  3568:19,21 3583:13,14                  3609:27 3620:28</p> <p><b>participated</b> 3492:24 3495:5                  3552:5 3583:8,20 3584:8                  3608:23 3610:2 3705:27                  3706:28 3712:10</p> <p><b>participating</b> 3504:23                  3530:4 3531:15</p> <p><b>participation</b> 3495:11                  3498:25 3533:3,7 3600:20                  3620:25</p> <p><b>parties</b> 3576:25 3577:6                  3579:16 3603:6</p> <p><b>partitioned</b> 3509:16</p> <p><b>partly</b> 3572:18 3574:26</p> <p><b>partners</b> 3710:11 3717:26</p> <p><b>parts</b> 3591:21,25 3647:27                  3649:10,12 3698:3 3718:5                  3727:2 3728:28 3733:23</p> <p><b>party</b> 3576:16 3578:22</p>	<p><b>password</b> 3535:2</p> <p><b>past</b> 3494:1,13 3496:15                  3504:6 3508:3 3509:19                  3523:3 3537:9 3546:23                  3550:13,19 3552:11 3565:17                  3568:8 3572:11,12 3583:23                  3603:1 3624:25 3694:28                  3712:4,5 3725:12</p> <p><b>paste</b> 3538:23</p> <p><b>path</b> 3498:1</p> <p><b>patron</b> 3711:14</p> <p><b>pattern</b> 3714:13</p> <p><b>pause</b> 3665:23 3666:5</p> <p><b>pay</b> 3524:13 3649:25 3714:4                  3715:4 3719:6 3729:26                  3730:9 3733:2</p> <p><b>paying</b> 3555:5 3716:2</p> <p><b>payment</b> 3556:18 3559:18</p> <p><b>payments</b> 3554:20 3619:17</p> <p><b>peak</b> 3525:3</p> <p><b>peeking</b> 3546:28</p> <p><b>peg</b> 3551:5</p> <p><b>penalizing</b> 3678:11</p> <p><b>people</b> 3492:20 3503:7                  3504:25 3505:18 3510:1                  3525:7 3536:17 3537:13                  3546:26 3572:13,22 3576:1                  3581:11 3582:25 3583:7,14                  3584:4 3593:18 3603:2                  3645:13 3664:15 3673:23                  3674:24 3690:11 3696:12,                  19,23,24 3698:23 3706:7</p> <p><b>perceive</b> 3508:11</p> <p><b>percent</b> 3606:7</p> <p><b>percentage</b> 3491:12                  3495:24 3508:19 3512:28                  3515:16 3564:12 3592:27                  3593:20,23 3605:6,18                  3607:7,14,15 3609:2,8,17                  3641:3 3644:24 3652:23,28                  3656:17,18 3668:25,27                  3669:3,19 3687:4 3705:17,                  19 3706:27</p> <p><b>percentages</b> 3606:3                  3669:17</p> <p><b>percentile</b> 3561:12</p> <p><b>perfect</b> 3520:10 3523:8                  3635:16</p> <p><b>perfection</b> 3657:22</p> <p><b>perfectly</b> 3536:2 3573:10                  3575:5 3595:5 3723:3</p>	<p><b>perform</b> 3565:13 3569:1</p> <p><b>Performance</b> 3710:5</p> <p><b>performed</b> 3527:24 3586:24                  3638:17 3641:22</p> <p><b>performing</b> 3621:20</p> <p><b>period</b> 3525:5,14 3554:4                  3560:3,7 3593:15 3602:24                  3621:15 3622:13 3624:14,19                  3630:8 3641:19,20 3644:11                  3647:22 3653:22 3656:8                  3657:3,5,17 3658:17,19,22,                  23 3659:4,11,25 3662:16                  3690:23,27 3691:6,7,20,25                  3692:4 3700:18,19 3703:23                  3704:8,9 3714:1 3732:7</p> <p><b>periodic</b> 3557:10</p> <p><b>periods</b> 3622:5 3657:10</p> <p><b>persistent</b> 3717:20</p> <p><b>person</b> 3489:19 3497:9</p> <p><b>personally</b> 3573:14</p> <p><b>personnel</b> 3717:14</p> <p><b>perspective</b> 3696:15 3725:5</p> <p><b>pertain</b> 3523:26</p> <p><b>petition</b> 3701:2 3720:13                  3729:22</p> <p><b>petitioner</b> 3726:26</p> <p><b>petitioner's</b> 3728:3,24</p> <p><b>petitioners</b> 3723:24 3725:6,                  14 3726:12</p> <p><b>petitioning</b> 3732:19</p> <p><b>Petitions</b> 3729:15</p> <p><b>Ph.d.</b> 3620:10</p> <p><b>phase-in</b> 3734:20</p> <p><b>phenomenon</b> 3567:24                  3704:4,5</p> <p><b>phone</b> 3500:22 3533:4</p> <p><b>phrase</b> 3706:7</p> <p><b>physical</b> 3507:25</p> <p><b>pick</b> 3508:1 3531:17,21                  3640:21 3694:21</p> <p><b>picked</b> 3583:21 3631:28                  3695:7,8,9 3703:26</p> <p><b>picking</b> 3640:15,21 3661:20                  3694:14 3704:6,8</p> <p><b>picks</b> 3609:18</p> <p><b>pickup</b> 3725:27</p> <p><b>picture</b> 3642:6</p>	<p><b>pie</b> 3509:23</p> <p><b>piece</b> 3524:4,12 3574:1                  3595:16 3683:16</p> <p><b>pieces</b> 3495:6 3681:14</p> <p><b>place</b> 3521:7 3557:1 3587:7                  3591:22 3592:9 3602:14                  3606:10 3633:17 3668:26</p> <p><b>placeholder</b> 3664:25,28                  3665:3,10,11</p> <p><b>places</b> 3544:12 3546:22                  3548:1,7 3553:17 3554:16                  3562:7 3603:15 3670:16                  3715:6</p> <p><b>plan</b> 3558:26</p> <p><b>planned</b> 3538:1 3558:27</p> <p><b>Planner</b> 3709:21</p> <p><b>Planning</b> 3709:9</p> <p><b>plant</b> 3490:5,7 3491:21                  3492:5,7,13 3493:15,21                  3494:4,11,15 3497:27                  3499:19 3502:19 3505:12                  3506:22 3507:14,16,25                  3509:12,17 3510:8 3511:7,                  22,27 3512:17,22,27                  3513:11 3515:25 3516:13,                  16,17,27,28 3517:22                  3518:22 3521:7,13,16                  3522:12,28 3524:20,21,27                  3525:19 3527:7,12 3528:27                  3529:2,9,23 3530:5,13,15                  3534:17 3537:9,12 3539:10,                  21 3541:3,8 3543:18,24,26                  3544:2,14 3547:7,25,26                  3548:21,25 3549:24 3550:7,                  9 3552:8,12,14,18,23                  3553:2,5,13,26 3554:7,11,17                  3555:27 3556:6,12 3560:2                  3561:15,20,22 3562:9,10,12,                  13 3563:27 3584:14,16                  3586:27 3588:19 3589:14                  3590:12,14,27 3591:1                  3595:21,23 3598:26 3599:2,                  15 3601:15,21,24 3603:19                  3607:25,27 3612:9 3628:8                  3629:2 3630:7,8 3632:19,20                  3641:27,28 3645:9,23                  3646:12,13,14,15 3651:1,14                  3658:10,14,20,26,28                  3659:15 3669:2 3672:10,21,                  25 3678:23,24 3683:25                  3685:3,11 3689:10 3692:3,                  11,12 3693:6,11 3694:11,13                  3698:2 3703:8 3711:27                  3716:14,15,22,27 3717:10,                  13,25 3718:2,6,13,19,22,25                  3722:1,3 3726:20,24                  3727:20 3728:27 3730:1</p> <p><b>plant's</b> 3524:17 3584:13</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



<p><b>plant-based</b> 3710:16</p> <p><b>plants</b> 3491:4,13 3492:17, 24,27 3493:1,4,8,10,25,28 3494:3,9,10,16,19 3495:4 3496:3,5,15,18 3497:25 3498:26 3499:7,13,15,17,18, 23,25 3500:1,7,11 3503:14 3504:4,5,23 3506:7,9,11,13, 14,19,24 3509:5,26 3512:14 3513:6 3515:19,22 3516:2, 10 3517:8 3519:2,4,7,8,20 3520:17 3521:1,22 3522:5, 11 3523:1,2,15 3524:5 3526:27 3527:13 3528:5,10, 17,18,20,24,28 3529:7,8,9, 12,18,23 3530:4,11,13,25,27 3531:5,9,13,17,18,19,21 3533:10,15 3535:27 3539:11,22,24,27 3540:3,10, 13,15,18,24 3542:2,13,14, 19,21,27 3543:14,23 3544:10 3545:5,11 3546:15 3549:20 3550:19,23 3551:18,21,22,25 3552:1 3553:12,21 3554:4,18,21,25 3555:13 3556:26 3559:23, 24,25 3561:8,17,24,28 3562:1,3,5,14 3563:24 3565:11 3566:22,23,25 3567:19,23 3568:18,21 3584:8 3585:23 3586:13,15 3587:4,8,20,22 3588:22 3589:8,11,15,22 3590:1,5, 13,23 3591:13,19,28 3592:5, 15 3594:10,20,21 3595:1,3, 4,6,8,9,12,13,22,24 3597:20 3598:26,28 3599:1,7,12,21, 24 3600:12,14,18,28 3601:19 3603:3 3608:5,18, 22,28 3609:13,14,27 3610:1, 3,18,19,25,27 3611:3,8,20, 28 3612:12,20 3618:5,6 3620:27,28 3622:9 3624:16, 20 3629:10 3630:13 3631:24 3632:11 3645:5,20 3647:28 3651:6,16,24 3652:18,23 3653:20 3665:27,28 3666:1, 2 3667:10 3669:12,15 3685:27 3686:4,14 3690:16, 17,21,26 3691:1,4,8,10,17, 18,21,22 3692:9 3693:27 3694:3,6 3695:6 3696:14 3697:25 3698:25,26 3699:4, 20 3700:21 3701:27 3702:1 3705:27 3706:16,28 3710:7, 10,11,20,24,26 3711:3,6,11 3712:9,11 3716:18 3719:2,4, 7 3726:7,25 3727:13,22 3729:3</p> <p><b>plants'</b> 3584:10</p> <p><b>PLC</b> 3710:3,4</p> <p><b>plenty</b> 3549:12 3572:26</p>	<p><b>plug</b> 3545:13 3682:27,28</p> <p><b>plugging</b> 3684:3</p> <p><b>plugs</b> 3508:24</p> <p><b>point</b> 3492:8 3493:12 3500:12 3523:25 3525:27 3537:21 3540:19 3552:17 3560:13 3573:16 3574:25 3575:10 3578:21,26 3581:6 3587:6 3595:25 3601:17 3602:12 3609:23 3612:27 3620:15 3623:11 3628:24 3635:15 3642:2,20 3643:10, 11 3646:4 3653:20 3669:18 3688:12 3692:24 3693:13 3700:13 3701:21 3707:3 3716:5 3725:16 3734:8</p> <p><b>pointed</b> 3661:18 3693:2</p> <p><b>points</b> 3546:19 3590:4 3605:1 3653:17 3670:14</p> <p><b>policy</b> 3556:23 3604:11 3618:13 3619:1 3620:12 3671:24 3673:5</p> <p><b>polishers</b> 3717:11,13 3718:4</p> <p><b>politically</b> 3720:21</p> <p><b>pool</b> 3553:19 3554:11 3556:18 3712:27 3715:18, 24,27 3716:1,2 3719:9 3723:13</p> <p><b>pooled</b> 3553:13 3719:7</p> <p><b>pooling</b> 3554:18 3715:13,15 3716:7</p> <p><b>poorest</b> 3698:20</p> <p><b>popular</b> 3583:22</p> <p><b>populate</b> 3489:20</p> <p><b>populated</b> 3655:17</p> <p><b>population</b> 3600:11 3706:5 3707:2</p> <p><b>Portales</b> 3556:5</p> <p><b>portion</b> 3495:20 3497:13,15 3505:27 3559:26 3714:15</p> <p><b>portions</b> 3576:26 3592:1</p> <p><b>position</b> 3693:26 3715:7</p> <p><b>positions</b> 3618:9,14 3731:17</p> <p><b>positive</b> 3657:11 3705:21 3713:20</p> <p><b>possibilities</b> 3508:1</p> <p><b>possibility</b> 3518:3 3544:11 3598:7 3685:6 3686:5</p> <p><b>possibly</b> 3517:24 3543:8 3554:26</p>	<p><b>post</b> 3535:28 3540:21 3691:16</p> <p><b>posted</b> 3536:11,14 3538:26 3581:27</p> <p><b>posts</b> 3582:24</p> <p><b>potentially</b> 3705:4</p> <p><b>pound</b> 3509:7,9 3512:14,15, 23 3519:22 3565:20 3625:6 3638:28 3639:1,17 3683:4 3703:20 3712:12,14,20 3717:25 3719:18 3721:3,4 3725:18 3726:1 3728:2</p> <p><b>poundage</b> 3608:9,27</p> <p><b>pounds</b> 3495:2 3496:1,3,4 3502:24 3510:22 3511:16, 19,24,26 3512:8 3519:20 3541:15 3548:9,11 3553:10 3563:20 3564:7,9,11 3589:10,14,19 3597:4,6 3602:4,8 3608:26 3610:17 3611:2,23,24 3612:1,13 3625:28 3653:21 3703:18 3710:21,28 3716:15</p> <p><b>powder</b> 3502:26 3503:3,24, 27 3511:9 3512:15 3541:24 3542:3,6,13 3545:25 3564:1 3600:9 3625:1 3668:2 3691:18</p> <p><b>powders</b> 3587:18</p> <p><b>power</b> 3630:24 3675:11 3678:13 3696:1</p> <p><b>Powerpoint</b> 3617:17,25 3621:26 3642:13 3655:21,22 3656:20</p> <p><b>PPD</b> 3713:19,25</p> <p><b>PPFS</b> 3539:15 3729:25</p> <p><b>PPI</b> 3640:16 3679:15 3697:17,18,19</p> <p><b>PPIS</b> 3697:14</p> <p><b>practice</b> 3539:22 3572:9 3580:23 3645:19 3667:4</p> <p><b>practices</b> 3515:1 3528:7</p> <p><b>pre-mix</b> 3710:15</p> <p><b>precedent</b> 3576:27 3622:26 3712:4,5</p> <p><b>precise</b> 3522:16,20</p> <p><b>predecessor</b> 3618:24</p> <p><b>predict</b> 3656:11 3658:2 3682:15</p> <p><b>predicted</b> 3635:9,15 3636:13 3638:15,24 3639:6, 10,12,15,16,17 3640:1</p>	<p>3656:2,6,19 3660:7,15,22 3678:24 3680:23,26 3696:12</p> <p><b>predicting</b> 3635:21,28 3636:12</p> <p><b>prediction</b> 3633:18 3648:24 3670:11 3695:11</p> <p><b>predictions</b> 3635:26 3656:12</p> <p><b>predictive</b> 3677:18</p> <p><b>predicts</b> 3640:25 3641:3,6</p> <p><b>predilection</b> 3583:16</p> <p><b>predominance</b> 3530:21</p> <p><b>prefer</b> 3492:2 3672:21</p> <p><b>preferable</b> 3672:11,16</p> <p><b>preference</b> 3673:5</p> <p><b>premise</b> 3669:27,28</p> <p><b>premium</b> 3518:1</p> <p><b>premiums</b> 3559:27 3714:14, 20,25 3715:4,7,11 3717:16</p> <p><b>prepared</b> 3501:1 3527:23 3534:3 3614:11 3708:17</p> <p><b>present</b> 3573:1 3633:16 3681:12 3688:21</p> <p><b>presentation</b> 3617:17,25 3621:27 3642:13</p> <p><b>presented</b> 3573:28 3624:11 3670:4 3689:2 3725:6</p> <p><b>presenting</b> 3563:13</p> <p><b>presents</b> 3571:6</p> <p><b>preserved</b> 3581:8</p> <p><b>press</b> 3583:22</p> <p><b>pressures</b> 3669:13 3670:3</p> <p><b>pretty</b> 3496:17 3498:11,14 3548:25,27 3576:3 3592:18 3597:19,24 3609:15,24 3624:14 3634:18 3661:1,4 3670:18 3682:21 3696:5 3703:9 3706:23 3707:1</p> <p><b>previous</b> 3564:19 3567:8 3572:13 3577:26 3583:11 3591:20 3712:22</p> <p><b>previously</b> 3570:4,9 3579:7 3659:16</p> <p><b>price</b> 3506:21 3513:19,20, 22,23,24,27 3514:23 3515:6, 10,14 3516:14 3517:23,26, 28 3518:5 3552:2 3555:3 3557:9,11,17 3558:3,10 3588:21 3629:8 3640:16</p>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



3661:20,26 3662:8 3684:9 3692:19 3697:12 3698:24 3700:11 3709:15,20 3711:10 3713:11,15,16,18,21,23,24, 27 3714:3,5,6,18 3715:21,23 3719:5,6,17,19,23 3720:1 3721:11,13,17,22,26 3722:6, 9,24,26 3723:2,4,6,20,22,25 3724:2,4,5,6,10,14,22,25 3725:4,23,28 3726:13 3727:9 3728:9,16 3731:22 3733:1,2,4,7,9	<b>proceedings</b> 3735:3 <b>process</b> 3504:26,27 3520:8 3523:1 3530:24 3533:16 3543:6 3546:20 3547:28 3601:4,10 3602:8,13 3644:21 3710:21,27 3727:5, 26 3730:18 <b>processed</b> 3502:22 3504:12 3511:27 3563:20 3564:7,9 3566:24 3653:21,23 <b>processes</b> 3521:7 3549:14 3716:14 <b>processing</b> 3499:4 3503:9 3506:26 3509:6,13,21,28 3510:17,18,26 3511:13 3513:11 3516:10 3527:21,25 3533:25 3540:21 3541:2 3560:24,25 3563:18 3564:5 3565:25 3567:14 3596:19 3597:23 3598:5 3602:22 3688:21 3716:19 3717:23 3718:27 3726:24 <b>processor</b> 3515:13 3618:3 3712:8 3720:16 <b>processors</b> 3517:17 3559:18 3671:11 3715:2 <b>procuring</b> 3698:2 <b>produce</b> 3494:17 3519:22 3540:13 3554:7 3705:27 <b>produced</b> 3527:20 3529:1 3539:25,27 3540:10,14,24 3541:4 3542:22 3543:19 3544:23 3548:10 3553:10 3577:25 3586:26 3597:21 3651:1 3703:18 3705:28 3706:17 3717:6 3721:21 <b>producer</b> 3556:3,9 3629:8 3662:8 3697:12 3713:14 3720:15 <b>producer's</b> 3556:10 3733:13 <b>producers</b> 3526:17 3543:15 3564:27 3710:12 3716:7 3720:4,10 3723:17 3729:16 3730:23 3732:22,27 3733:5 3734:14 <b>produces</b> 3584:15 3686:18 3722:10 <b>producing</b> 3494:3,4,5 3513:10 3539:11,12 3540:15,16 3542:2,14,20 3544:2 3545:6 3553:7 3564:2 3566:8 3624:20 3706:21 <b>product</b> 3495:3 3502:18,22 3503:14 3504:8,9 3505:11 3510:22 3511:8,24 3512:9	3514:23 3515:17 3516:13,15 3517:2,7,23,28 3518:7 3523:6,12 3527:20 3528:27 3529:8,9,23 3530:6,13,15 3539:12,14 3540:1 3541:2 3542:9 3543:1 3544:9 3545:1,6,12 3548:9,12 3549:4 3552:2,28 3553:7,10, 25,26 3557:9,16,17,20 3558:3 3563:11 3564:3 3587:18,25 3589:10,14,19 3599:17 3602:8,9 3608:26 3610:17 3611:2 3621:1 3638:21 3639:1 3646:15 3651:1 3658:4,8 3665:24,25 3686:17 3694:12 3703:18 3724:21 3725:21,22 <b>production</b> 3510:26 3517:9, 16 3519:7,25 3520:5 3524:18 3553:28 3568:6,7 3601:4,9 3609:3,7,11 3647:13 3685:22 3687:16 3693:7 3705:18 3706:27 3725:15 3726:5,7,10 <b>productivity</b> 3623:26,28 3624:3,4,5,6 3628:11,12,15, 16,18 3629:13,14,15,16,27 3631:3 3636:10 3637:5 3658:9,14,27 3675:24 3679:6 3680:16 <b>products</b> 3494:4,7,16,22 3495:1,25 3496:2 3501:22 3503:12 3505:13 3506:22 3511:8,9,16 3515:2 3517:13 3524:18 3527:14 3529:1 3530:19,20,22 3534:17 3539:12,13 3540:26 3541:9 3554:7 3559:27,28 3563:19, 27,28 3564:6,12,13 3566:24 3567:22 3568:9 3585:8,12, 28 3586:5,20,25,26 3587:15 3597:24 3598:9 3599:22 3600:5,8 3602:4 3641:18 3647:19 3649:9 3709:26 3715:9 3719:14,25,28 3725:24,25 3730:7 <b>professor</b> 3619:5 <b>profit</b> 3513:12 3515:17 3517:4,20,22 3730:10 3731:19,26 <b>profitability</b> 3506:19,20 3513:16 3517:8 3560:20 3562:19 <b>profits</b> 3518:2 3725:15,19 3726:4,8 <b>program</b> 3560:25 3618:12 3685:25 3714:9 <b>Programs</b> 3514:21 3697:3 <b>project</b> 3537:2 3622:4	3623:10 3642:11 3704:1 <b>projected</b> 3640:3 3682:6 <b>projection</b> 3559:7 <b>projections</b> 3623:13 3625:7, 9 3638:5 3656:14 3702:20 <b>projects</b> 3619:22,23 3716:25 3718:16,19 <b>promise</b> 3526:24 3536:23 3680:27 <b>promote</b> 3519:18 <b>promoter</b> 3520:14 <b>prompt</b> 3549:9 <b>proof</b> 3571:2 3581:25 <b>proper</b> 3711:8 <b>properly</b> 3555:11 3657:16 <b>property</b> 3629:2 <b>proponent</b> 3560:10 <b>proportion</b> 3495:22 3496:18 3508:28 <b>proposal</b> 3643:14,15,22 3711:28 3712:15 3720:3,5, 11 3721:10,23 3722:23 3723:28 3724:1,3 3726:14 3730:18 <b>proposals</b> 3711:17,20,23 3726:15,28 3728:19,23 <b>proposed</b> 3711:18 3720:3 3721:1,3,9 3726:18 3732:12 3734:20,22 <b>proposing</b> 3644:2 3681:20 <b>proprietary</b> 3493:24,27 3530:27 3533:12 3710:23 <b>protected</b> 3534:28 <b>protein</b> 3503:24,26 3514:26 3542:10 3558:18,19 3568:9 3710:23 3719:19 3721:11, 13,18 3722:6,14,24,26 3723:23,25 3724:1,4,6,9,10, 11,12,14,19,20,23 3725:4 3726:13 3727:5 3728:1,16 <b>proteins</b> 3709:17 3710:18, 23 3711:1 <b>proved</b> 3574:4 <b>proves</b> 3716:5 <b>provide</b> 3492:10,15,25 3493:2,5 3514:18 3521:9 3522:26 3574:8 3576:1 3581:26 3587:19,21 3604:8 3608:4 3612:19 3625:27 3627:19 3642:6 3662:13
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



3693:15 3698:8 3708:12 3730:1 3733:14	3579:5,18 3604:15 3613:13 3617:12,24,25 3629:22 3631:28 3643:28 3663:13 3664:19 3669:7 3674:14,24 3677:6 3722:7 3730:20	<b>quotes</b> 3586:20 3730:3	<b>reaction</b> 3706:20
<b>provided</b> 3526:26 3528:12 3535:9 3546:16 3555:27 3655:27	<b>puts</b> 3693:13	<hr/> <b>R</b> <hr/>	<b>reactions</b> 3575:16
<b>providence</b> 3580:27	<b>putting</b> 3504:11 3572:25 3643:13,15	<b>R-SQUARE</b> 3634:2,3 3635:6 3676:12 3677:21,25,26 3678:2,3,7,10,15,22	<b>reacts</b> 3504:15
<b>provider</b> 3711:5		<b>R-SQUARED</b> 3527:19 3634:10	<b>read</b> 3520:3 3527:16 3544:17 3617:27 3688:14 3697:6 3709:5 3729:6
<b>providers</b> 3733:19		<hr/> <b>Q</b> <hr/>	<b>reads</b> 3533:2,21
<b>providing</b> 3490:8 3553:2 3601:18 3715:8	<b>qualified</b> 3620:19	<b>rabbit</b> 3580:12	<b>real</b> 3558:14 3580:17,27 3640:26 3651:23 3672:10 3683:20 3713:15 3726:21 3729:2
<b>provisions</b> 3619:17	<b>qualifier</b> 3500:5	<b>Rabobank</b> 3709:18,21	<b>real-world</b> 3713:5
<b>proxies</b> 3699:18,19	<b>qualify</b> 3515:24	<b>raise</b> 3547:12 3549:8 3578:26 3708:4 3719:10	<b>reality</b> 3574:23 3670:17 3700:23 3701:15 3712:25 3715:17
<b>proxy</b> 3628:8 3662:9	<b>qualities</b> 3551:1	<b>raised</b> 3576:2 3661:24 3719:16	<b>realize</b> 3504:11 3553:25 3722:11
<b>public</b> 3583:5 3709:28	<b>quality</b> 3544:24 3712:6	<b>raises</b> 3560:12	<b>realm</b> 3685:6
<b>publications</b> 3621:12	<b>quantify</b> 3727:28	<b>raising</b> 3719:12,13	<b>reason</b> 3537:8 3546:24 3555:12 3575:28 3580:26 3626:8 3630:16,22,28 3640:14 3648:20 3664:13 3688:27 3689:18 3705:22 3722:26 3723:5 3733:18
<b>publicly</b> 3731:10	<b>quarter</b> 3668:13 3677:2	<b>ran</b> 3683:17	<b>reasonable</b> 3506:8 3562:21 3579:18 3607:19,23 3682:24 3683:5 3684:14,21 3685:1,4 3687:5 3729:28 3732:15 3734:13
<b>publish</b> 3504:13	<b>question</b> 3491:22 3495:15 3501:9 3505:24 3514:4 3520:18 3522:8 3523:6 3525:16 3531:12 3535:7 3536:3 3542:1 3544:17 3547:9 3548:26 3553:11 3563:5 3565:4 3566:2 3579:22 3581:17 3582:11,28 3586:12 3588:16 3593:17 3603:9,20 3608:8 3610:6 3611:11,18 3641:24 3669:28 3671:12,16,24 3672:15 3686:2 3690:20,24 3691:14 3693:24 3694:23 3697:6 3698:11 3702:13 3704:6	<b>random</b> 3527:2,7	<b>reasons</b> 3542:28 3552:15 3556:16 3566:20 3609:14 3723:25 3724:4
<b>published</b> 3583:6 3628:4 3689:7 3713:7	<b>questioning</b> 3578:10 3581:11	<b>rank</b> 3561:15	<b>reblending</b> 3542:8
<b>publishes</b> 3559:2 3697:14	<b>questions</b> 3490:25 3501:21 3514:17 3526:14,25 3531:23 3532:17 3533:2 3538:4 3539:7 3541:4 3545:17,27 3546:18 3548:5 3549:2,9 3552:27 3554:3 3556:22 3564:16 3572:26 3573:11 3580:27 3581:14 3584:19,26 3585:5 3592:6 3593:3 3598:18 3603:5 3605:4 3608:9 3645:24 3681:22 3688:10 3689:22 3690:4,5, 10 3704:24,25 3705:8 3707:8,26 3734:25	<b>range</b> 3548:28 3550:9 3567:16 3628:17 3641:16 3695:16 3696:12	<b>recalculate</b> 3498:3
<b>publishing</b> 3622:6	<b>quick</b> 3491:15 3518:13 3580:17	<b>ranges</b> 3525:10 3726:23	<b>recall</b> 3495:27 3498:2 3523:23 3525:8 3530:9,21 3531:7,11 3534:6 3535:19 3540:27,28 3543:20 3545:7 3550:10 3553:14 3558:21 3579:6 3583:21,27 3584:5 3590:2,7 3592:14 3603:14, 17 3681:24
<b>pull</b> 3576:26 3645:28 3680:5	<b>quickly</b> 3535:26 3546:24 3580:15,18 3582:28 3705:6	<b>ranked</b> 3598:26	<b>recap</b> 3568:10 3676:14
<b>pulled</b> 3520:21 3527:6 3528:25 3529:19 3537:20 3583:28 3639:5 3679:2	<b>quo</b> 3721:13 3726:20	<b>ranking</b> 3503:13 3599:6	<b>recapture</b> 3519:23 3608:4
<b>pulling</b> 3507:3 3527:3 3542:10 3681:3 3715:27	<b>quote</b> 3563:17	<b>rapid</b> 3692:5,8	<b>receive</b> 3501:20 3532:26 3559:25
<b>pump</b> 3718:21		<b>rapidly</b> 3525:12 3526:1	<b>received</b> 3491:27 3495:1 3534:20 3579:22 3613:7 3707:19
<b>purchased</b> 3601:16 3727:23		<b>Rasch</b> 3730:22	<b>receiving</b> 3552:16
<b>purchases</b> 3701:14		<b>rate</b> 3502:10 3508:5,6,8,12, 16 3559:2,4,8 3633:8 3636:9 3638:10,13 3640:17,23 3648:17 3676:5 3682:13,22, 23,28 3683:27 3684:4,28 3693:14,19,22 3694:2,3,7,9 3700:10,12 3704:6 3717:1 3729:28	<b>recent</b> 3509:20 3533:25 3622:5 3645:3 3664:5
<b>purchasing</b> 3522:10		<b>rated</b> 3503:17	
<b>Purdue</b> 3619:6		<b>rates</b> 3508:13,15 3525:10, 13,15 3558:22 3560:12 3607:26 3627:25 3628:5 3633:6 3635:1 3638:8 3647:26 3648:8 3661:24 3662:8 3684:3,15,16,18,23, 24 3694:5 3699:6	
<b>purged</b> 3547:2		<b>rational</b> 3527:22	
<b>purportedly</b> 3582:19		<b>raw</b> 3502:19	
<b>purpose</b> 3574:16 3577:4 3581:9 3713:13		<b>reach</b> 3493:27 3546:19 3547:7	
<b>purposes</b> 3541:19 3571:14 3574:14 3577:13 3578:10,27 3621:28 3641:22 3670:12 3673:5 3722:3		<b>reached</b> 3568:16	
<b>pursue</b> 3719:26			
<b>pursuing</b> 3517:22			
<b>push</b> 3504:20			
<b>put</b> 3490:2 3492:26 3496:23 3507:14 3535:13 3554:6 3572:27 3577:7,10,18			





3720:28	<b>referenced</b> 3537:18 3574:15	<b>regulatory</b> 3505:20 3553:18 3618:4,12 3619:1 3649:16, 19,26 3717:4,5,16 3731:12	<b>repairs</b> 3602:18 3629:1
<b>recently</b> 3568:7	<b>references</b> 3554:23 3582:13		<b>repeat</b> 3526:15
<b>recipient</b> 3532:27 3580:20	<b>referred</b> 3530:27 3647:5,7 3688:6	<b>rehearse</b> 3705:22	<b>repeating</b> 3489:16
<b>recite</b> 3705:4	<b>referring</b> 3495:12 3499:9 3576:13 3646:26 3649:20 3688:18	<b>reinvestment</b> 3701:12	<b>repetitive</b> 3585:6
<b>recognize</b> 3521:1 3551:16 3630:3 3684:26	<b>refine</b> 3582:2	<b>reiterating</b> 3638:22	<b>rephrase</b> 3535:6 3684:15 3686:2
<b>recollect</b> 3587:1	<b>reflect</b> 3551:14 3558:14 3562:16 3585:23 3606:25 3607:8 3712:25 3730:8 3732:5 3733:6	<b>reject</b> 3675:9,13 3676:21 3688:27 3723:27 3726:14 3728:19	<b>replace</b> 3717:23
<b>recollection</b> 3527:16 3571:5 3688:24 3689:11	<b>reflected</b> 3523:12 3601:21 3631:27 3651:26 3694:5 3706:27 3717:1 3718:3 3730:18	<b>rejecting</b> 3637:17 3675:17 3676:23 3677:14	<b>replacement</b> 3718:3
<b>recommended</b> 3551:12	<b>reflecting</b> 3642:10	<b>related</b> 3630:19 3633:5 3662:15 3669:16 3717:5	<b>report</b> 3489:12 3492:5,16 3493:1,16 3496:23 3501:19 3504:14 3511:5 3516:9 3523:17 3526:26 3527:1 3528:11,24 3529:5,18 3530:1,25,26 3531:3,4,5,9 3533:7 3534:7,12 3535:18, 20 3536:4,7,11,14,19,21 3537:3,16 3538:15,23,26 3539:1,2,4,6,9,13,17,18,25 3541:20 3542:23,25,26 3543:10 3545:18 3547:6 3549:24 3550:2,3 3552:5,11 3558:21 3562:26 3563:10,12 3565:18 3566:9,10 3567:14, 17 3568:11,12,18,19,25 3584:7 3585:16 3587:5 3590:14,23 3594:11 3603:1 3608:14 3612:10 3622:14 3626:7 3639:5 3642:10 3660:2 3674:17 3681:17,18 3685:7,9 3687:12 3696:24
<b>recommends</b> 3681:17	<b>reflection</b> 3722:21	<b>relates</b> 3608:22	<b>reportable</b> 3495:3 3496:5 3534:18 3545:2 3597:12 3601:26
<b>record</b> 3516:8 3527:15 3532:13,14 3544:18 3546:8 3557:6 3562:25 3569:27 3570:1,5,12,20,28 3571:13, 25 3572:19 3573:15,22 3574:16 3576:1,25,27 3577:3,5,19 3579:8,10,25 3581:5,17,19 3585:6 3592:20 3602:17 3603:26,28 3605:25 3613:5,12 3653:10 3668:20 3707:17,24 3708:12 3729:6 3735:2	<b>reflective</b> 3649:3,5 3651:6 3694:11 3706:21,23 3715:17	<b>relationships</b> 3623:19 3625:4 3668:1 3721:15 3722:11 3732:3	<b>reported</b> 3494:22 3495:25 3496:1,3,4 3497:21 3504:6 3505:28 3506:10 3509:10 3511:21,27 3512:2,9 3521:24 3522:13 3528:25 3529:1 3541:2 3542:27 3543:9,14,24 3545:18 3550:1 3551:15 3562:5,10 3565:20,27 3568:15 3585:17 3586:3,5 3589:4 3590:16 3593:15 3594:15,16 3595:4, 13,24 3596:4 3597:4 3599:18 3600:18 3602:25 3608:19 3609:8,10 3612:13, 14 3653:27 3654:17 3684:27 3719:14,25,28
<b>records</b> 3646:14 3689:10	<b>reflects</b> 3640:27	<b>relationships</b> 3723:21 3731:19	<b>reporter</b> 3546:2 3605:28 3672:14
<b>recover</b> 3719:11,25	<b>reform</b> 3729:11,21 3730:4, 25 3734:11,21	<b>relative</b> 3492:23 3521:10 3681:23 3700:16 3729:24	<b>reporting</b> 3495:17 3499:16 3514:17 3526:27 3534:22 3537:11 3540:6 3542:24 3544:9,12,15 3562:27 3584:14 3594:10 3595:1,8 3609:14 3621:17
<b>recovered</b> 3727:5,8,15	<b>refresh</b> 3571:5 3688:24 3689:11	<b>relaxed</b> 3676:8	<b>reports</b> 3492:14,21 3528:23
<b>recovering</b> 3718:16	<b>refreshes</b> 3689:13	<b>released</b> 3537:6 3666:21	
<b>recovery</b> 3726:15,19,22,23, 26 3727:10,11	<b>Reggiano</b> 3541:17	<b>relevant</b> 3597:5	
<b>RECROSS-EXAMINATION</b> 3610:10 3611:16 3612:6	<b>regime</b> 3620:22	<b>reliability</b> 3572:22	
<b>red</b> 3491:9 3547:13 3549:8	<b>regimes</b> 3649:16	<b>reliable</b> 3642:1	
<b>redacted</b> 3532:10 3533:4	<b>region</b> 3693:9	<b>relied</b> 3720:23,25	
<b>redid</b> 3667:25	<b>regions</b> 3554:10,13 3592:2,3 3714:12 3715:2	<b>relief</b> 3555:9,14,15	
<b>redirect</b> 3604:27 3613:2 3702:9,10	<b>Register</b> 3689:6	<b>relies</b> 3712:25	
<b>redo</b> 3502:11 3593:26	<b>regressing</b> 3639:26 3694:20	<b>rely</b> 3689:17 3711:13	
<b>reduce</b> 3517:16 3717:10 3718:19	<b>regression</b> 3623:16,18 3624:23 3634:8 3635:23 3655:15 3656:10 3657:2,14, 16 3674:20,27 3676:16 3678:2 3680:19 3694:20 3695:21 3697:9,11 3698:16	<b>relying</b> 3689:3	
<b>reduced</b> 3517:23 3712:18	<b>regressors</b> 3678:7	<b>remaining</b> 3727:8 3728:7	
<b>reducing</b> 3517:9	<b>regular</b> 3525:23	<b>remains</b> 3731:27	
<b>reduction</b> 3700:4	<b>regularly</b> 3563:1,3 3700:26	<b>remember</b> 3503:21 3505:15 3525:6 3558:23 3569:18 3571:27 3572:1,4 3575:14 3583:27 3584:1 3585:11 3587:16 3596:1 3605:8 3656:15 3665:22 3692:26	
<b>refer</b> 3499:11 3526:25 3536:28 3539:2 3555:16 3645:8,13	<b>regulated</b> 3713:15 3714:23 3718:26 3719:1,4,6 3720:1	<b>remembering</b> 3651:9 3692:25	
<b>reference</b> 3534:9 3537:13 3579:18 3582:20 3599:21 3643:11 3680:8 3681:26	<b>regulation</b> 3553:20 3649:21 3718:28 3730:27	<b>removal</b> 3722:6	
	<b>regulations</b> 3649:22 3728:9	<b>remove</b> 3590:20,22 3722:20	
		<b>removing</b> 3721:17 3722:13	
		<b>reopen</b> 3691:22	



3545:3 3567:27 3568:5 3614:21 3621:15 3622:18,20 3625:24 3631:22	<b>responders</b> 3492:15 3496:24 3510:19 3512:7	<b>revenue</b> 3715:15,28 3716:1 3721:25 3733:19,21	<b>rough</b> 3498:7 3513:16 3587:23
<b>represent</b> 3591:15 3630:13 3633:6 3689:7 3698:6 3710:9 3720:15	<b>responding</b> 3496:26 3521:17 3524:9 3540:11	<b>revenues</b> 3712:27 3715:18	<b>roughly</b> 3518:16 3568:2,5 3625:6 3638:27 3731:5
<b>representation</b> 3497:23 3527:11 3591:21 3612:20 3628:8 3654:6 3673:25	<b>response</b> 3491:26 3492:2 3496:10 3544:4 3553:11 3565:4	<b>reversed</b> 3573:21	<b>routine</b> 3521:6
<b>representative</b> 3498:12,16 3499:15 3520:16 3525:4 3591:16 3592:5 3647:16,17 3648:4 3654:18,19 3655:6,8 3664:10 3665:6 3669:10 3672:23 3673:13 3706:5 3707:2	<b>responsibilities</b> 3709:14	<b>reverts</b> 3560:4	<b>row</b> 3561:7,8 3608:17 3611:20 3709:25
<b>representativeness</b> 3706:2	<b>responsibility</b> 3618:13	<b>review</b> 3646:13 3652:7 3663:27 3681:11	<b>rows</b> 3561:12
<b>represented</b> 3652:22 3653:2 3710:12 3711:12	<b>responsible</b> 3618:26	<b>revisit</b> 3571:21,23 3572:21 3575:12	<b>rule</b> 3570:15
<b>representing</b> 3515:27 3576:16 3653:23 3709:10	<b>rest</b> 3531:27 3599:6 3647:16 3649:5,18 3679:20 3686:7,8 3699:1	<b>revisiting</b> 3575:11	<b>rules</b> 3581:26
<b>represents</b> 3503:13 3578:22 3609:4 3624:25 3676:15	<b>restate</b> 3566:2 3585:24	<b>right-hand</b> 3612:3	<b>ruling</b> 3570:15,17 3571:18 3574:13,20 3575:15 3576:7, 21 3577:11
<b>reputation</b> 3533:19	<b>restricted</b> 3586:25	<b>right-sizing</b> 3718:20	<b>rulings</b> 3572:14
<b>request</b> 3540:4,12 3543:7 3565:1 3568:28 3569:2 3583:5 3645:19 3693:12	<b>result</b> 3634:6 3698:16 3699:27	<b>rigorous</b> 3675:16 3696:22	<b>run</b> 3671:1 3683:3,21,22 3694:12
<b>requested</b> 3492:19 3582:25 3583:2	<b>resulting</b> 3721:25	<b>rise</b> 3694:19	<b>running</b> 3624:18 3671:6 3701:15 3718:6
<b>requests</b> 3564:24	<b>results</b> 3499:7 3500:11,16, 17 3501:8,12,16,18,22 3504:7 3506:5 3543:12 3584:11,16 3585:22 3586:2 3587:27 3588:2 3592:26 3593:1,28 3594:23 3595:10 3605:7,12,13,20 3606:4,5 3607:9,10 3609:4 3621:17 3633:21 3643:27,28 3667:12 3669:25 3670:21 3696:14,16 3697:9	<b>risen</b> 3525:28 3712:16	<b>ruthless</b> 3719:26
<b>require</b> 3497:9 3724:11 3730:9	<b>retail</b> 3597:13	<b>risky</b> 3508:4	<b>Ryan</b> 3526:17 3527:3 3529:19 3536:27 3542:1 3548:1 3551:10 3555:21 3567:11
<b>required</b> 3534:25 3717:13	<b>retention</b> 3728:20	<b>RO</b> 3601:15	<b>S</b>
<b>requirements</b> 3717:7,15	<b>rethinking</b> 3690:24	<b>road</b> 3619:6	<b>safe</b> 3507:15 3508:7
<b>requires</b> 3733:25	<b>retired</b> 3536:16	<b>Rob</b> 3692:6 3730:12	<b>safety</b> 3555:9,13,15,24 3717:5
<b>research</b> 3503:7 3569:1 3572:6,15 3619:23 3620:3 3709:22 3712:6	<b>retirement</b> 3558:26 3618:24	<b>robotics</b> 3659:15	<b>salary</b> 3600:15
<b>resolved</b> 3491:11	<b>retreat</b> 3525:12	<b>robust</b> 3725:2	<b>sale</b> 3513:17 3516:15 3518:6 3562:14 3725:15
<b>resource</b> 3620:11,16	<b>retreated</b> 3526:2	<b>ROI</b> 3517:26 3558:20 3560:6,19 3561:28 3562:1, 21	<b>sales</b> 3495:21 3497:14,21 3506:21 3539:13 3560:20 3563:25 3593:4 3709:9 3710:4 3719:5
<b>resources</b> 3712:19	<b>return</b> 3506:28 3507:8,19,26 3508:8,9,18 3509:1,6 3511:1,3 3512:2,3,16,18,23, 27 3513:9,14 3515:7,15 3516:14 3556:13 3559:22,24 3560:2 3561:27 3562:4 3563:7 3564:19 3565:16 3567:8 3590:26 3591:3 3629:3 3729:28	<b>role</b> 3500:4 3619:16	<b>salt</b> 3500:6,9
<b>respect</b> 3539:6 3543:17 3544:21 3551:9	<b>returned</b> 3562:15	<b>room</b> 3531:27 3577:8 3597:26 3619:20	<b>sample</b> 3497:18 3498:12 3499:6 3500:13 3501:12,15 3502:12 3504:23 3506:9 3520:16 3527:2,9 3528:4 3545:13 3565:6,9 3566:21, 28 3567:3 3568:14 3589:27 3595:26 3596:23 3597:2 3607:4 3609:22 3639:25 3654:1,13,15,18,28 3655:2,6 3656:8 3658:22 3662:16 3667:19 3690:23 3691:20 3704:7,9 3705:9 3706:2
<b>respond</b> 3497:1 3499:2 3531:14 3575:9	<b>returns</b> 3559:26 3726:11	<b>rooted</b> 3734:17	<b>samples</b> 3498:16 3549:16 3595:7 3600:13 3607:18
<b>responded</b> 3491:5 3492:27 3500:28 3542:21	<b>reused</b> 3717:12	<b>rose</b> 3613:21	<b>sampling</b> 3500:7
<b>respondents</b> 3523:18 3540:11 3550:21		<b>Rosenbaum</b> 3537:22,26,27 3538:7,10 3543:18 3571:28 3572:7,16,17,18 3573:5,11 3575:10 3577:18,26 3578:28 3581:13 3604:26,28 3606:1 3610:5 3612:26,27 3613:9, 19 3614:2,3,10,15,20 3615:1,7,12,17,21,25 3616:1,6,11,16,21,26 3617:3,8,16,23 3620:14,18, 20 3642:20 3702:11 3707:3 3708:2,8,10,20,27 3709:4 3734:24	
<b>responder</b> 3508:23		<b>Rosenbaum's</b> 3578:17	



<b>satisfaction</b> 3534:19	3622:17	<b>settles</b> 3733:1	<b>significantly</b> 3542:18 3595:4
<b>satisfied</b> 3496:9 3501:8	<b>selecting</b> 3494:3	<b>sewer</b> 3631:22,27	<b>signs</b> 3579:28
<b>save</b> 3546:28	<b>selection</b> 3493:15,21 3494:7 3539:10	<b>shaking</b> 3574:5	<b>silos</b> 3718:4
<b>savings</b> 3508:5 3558:24	<b>self-allocate</b> 3540:25	<b>share</b> 3583:17 3696:14	<b>similar</b> 3539:16 3541:17 3542:6,7 3544:8 3572:3 3595:2,9,10,12,15,16 3597:24 3602:7 3618:3 3632:18 3636:15,18 3641:16 3653:27 3666:19 3712:4 3717:1 3720:18,27
<b>scale</b> 3503:4,6,12,16	<b>self-reported</b> 3562:17	<b>shared</b> 3720:9	<b>similarities</b> 3588:10
<b>scales</b> 3604:15	<b>sell</b> 3491:20 3507:14 3515:13 3516:13 3517:27 3544:24 3556:11 3559:28 3562:9 3712:19 3732:23	<b>shed</b> 3714:24 3715:9	<b>Similarity</b> 3588:12
<b>scenario</b> 3516:28	<b>sellers</b> 3723:13,15	<b>sheds</b> 3715:11	<b>similarly</b> 3527:19 3541:22 3542:12 3606:15 3609:22 3659:1 3660:27 3679:9
<b>schedule</b> 3524:4 3644:6	<b>selling</b> 3552:2 3563:25 3731:20 3732:28 3733:27	<b>sheet</b> 3608:22	<b>simple</b> 3514:1 3610:27 3611:1 3644:9
<b>scheme</b> 3504:19 3597:19	<b>semblance</b> 3585:2	<b>shift</b> 3630:1,21 3632:22	<b>simplicity</b> 3727:16
<b>schemes</b> 3649:16,19	<b>send</b> 3491:14 3492:19 3531:4	<b>shifts</b> 3630:14,17	<b>simplified</b> 3728:16
<b>Schiek</b> 3613:11 3614:4,5,11 3617:16,24 3620:15,21 3642:28 3668:24 3674:7,10 3688:5 3697:3 3711:24 3717:1	<b>Senior</b> 3709:8	<b>ship</b> 3732:27	<b>simply</b> 3547:24 3563:6 3567:23 3587:21 3590:28 3606:11 3612:27 3650:23 3707:4 3730:20
<b>Schiek's</b> 3518:10,12 3520:3 3527:28	<b>sense</b> 3496:19,21 3554:1 3579:24 3591:16 3664:16 3666:7 3725:10	<b>short</b> 3671:4 3700:19 3709:9 3731:17	<b>simulator</b> 3494:15
<b>school</b> 3619:11 3620:1,2	<b>sensitive</b> 3733:17,18	<b>short-term</b> 3567:24 3632:1	<b>single</b> 3685:10
<b>science</b> 3620:10 3709:27	<b>sentence</b> 3557:14	<b>shortened</b> 3604:20	<b>sink</b> 3656:16
<b>scientific</b> 3720:19	<b>separate</b> 3590:14 3617:14 3628:13 3660:12 3724:11	<b>shortfall</b> 3700:16	<b>sir</b> 3582:5 3617:15
<b>scope</b> 3734:14	<b>separately</b> 3627:9 3629:7	<b>shortfalls</b> 3520:8	<b>site</b> 3535:6 3646:14
<b>scrap</b> 3549:5	<b>September</b> 3489:1 3614:1 3713:17	<b>shortly</b> 3535:21	<b>sites</b> 3534:28
<b>screen</b> 3587:17 3638:3	<b>seriatim</b> 3614:22	<b>show</b> 3490:6 3492:13 3561:28 3562:1 3571:4 3596:3 3608:17 3637:21 3714:13 3726:21 3733:8	<b>sitting</b> 3554:5
<b>screening</b> 3549:14	<b>series</b> 3614:21 3621:8 3624:22 3628:4 3638:6,13 3643:19 3650:22 3689:1 3720:23 3721:17	<b>showed</b> 3633:26 3666:11	<b>situation</b> 3544:27 3632:3 3715:17 3716:2
<b>scrutinize</b> 3490:24 3491:2	<b>services</b> 3734:7	<b>showing</b> 3586:2 3631:6 3639:20 3641:11	<b>size</b> 3528:6,10 3539:21 3548:9 3565:6,9 3654:1,13, 15,28 3655:2 3667:19 3705:9 3718:21
<b>search</b> 3535:11,14	<b>SESSION</b> 3489:1 3614:1	<b>shown</b> 3511:5 3532:16 3566:9,19	<b>sizeable</b> 3632:12
<b>searching</b> 3725:26	<b>set</b> 3506:9 3513:19,21,22 3514:11 3517:26 3518:27 3561:11 3565:14 3568:11 3593:18,19 3595:3,4,6 3603:2 3613:14 3626:22 3636:18 3650:26 3651:17, 18,28 3652:15 3662:22,25 3670:22,28 3671:2,3,26 3674:27 3681:18 3686:9 3699:28 3704:26 3712:26,28 3714:23,24 3715:10,22 3720:24 3732:17	<b>shows</b> 3494:18 3640:4 3655:28 3714:2 3733:11	<b>sizes</b> 3527:7,12 3528:6 3541:4,10,15 3655:6
<b>seasonal</b> 3553:2 3730:2	<b>sets</b> 3595:23 3724:28 3725:9	<b>shrink</b> 3548:20,24 3726:17, 19,21,28 3728:21	<b>skew</b> 3552:20 3563:27
<b>seasonally</b> 3553:5	<b>setting</b> 3651:15 3673:6 3720:19 3729:23	<b>shut</b> 3552:14	<b>skim</b> 3502:28 3503:1 3541:23 3542:3,5,13 3564:1 3624:27
<b>seat</b> 3519:1		<b>shy</b> 3700:28	<b>skip</b> 3544:18
<b>secretarial</b> 3510:10		<b>sic</b> 3519:3 3711:23	<b>skipping</b> 3734:19
<b>Secretary</b> 3570:26 3575:22 3581:1 3603:26		<b>side</b> 3551:17 3561:18 3601:24,25,28 3657:11,12 3674:4 3732:10	<b>skyrocketed</b> 3717:9
<b>section</b> 3714:19 3734:5		<b>sign</b> 3714:5	<b>sleep</b> 3674:14,25
<b>sector</b> 3494:14		<b>signed</b> 3533:13	<b>slide</b> 3623:5 3625:11
<b>secure</b> 3608:1 3731:27		<b>significance</b> 3637:15 3674:26 3675:8 3676:2 3677:11	
<b>segment</b> 3710:19		<b>significant</b> 3498:12 3524:16 3552:8,12 3554:17 3556:6 3635:22,24,25 3637:16 3674:20 3676:5,6,9,10,21 3677:8 3684:5 3722:14	
<b>segmented</b> 3509:21			
<b>segments</b> 3509:20			
<b>segregated</b> 3540:16,18			
<b>Select</b> 3526:17 3710:12			
<b>selected</b> 3515:19 3620:27			



3631:12 3636:27 3641:1	<b>source</b> 3626:10 3643:4 3729:19	<b>Squire</b> 3674:12	<b>states</b> 3554:13 3591:17 3609:3,7,11 3684:17 3685:27 3686:7,8 3699:2 3705:19 3706:18 3729:22 3733:21
<b>slides</b> 3631:9	<b>sources</b> 3643:8	<b>St</b> 3559:2,7	<b>states/regions</b> 3713:11
<b>slightly</b> 3537:14 3716:23	<b>South</b> 3554:24,28 3708:15 3709:11	<b>staff</b> 3533:10	<b>static</b> 3516:13
<b>slope</b> 3632:25 3634:28 3636:8,9 3639:28	<b>Southeast</b> 3555:1,6 3556:1 3591:22,24	<b>stages</b> 3697:15	<b>statistic</b> 3674:20,28 3676:16,20
<b>sloppy</b> 3515:18	<b>Southern</b> 3693:8 3699:2	<b>stake</b> 3711:8	<b>statistical</b> 3527:28 3528:9 3549:15 3550:27 3551:2 3589:1 3634:5 3674:26 3675:16
<b>slowdown</b> 3661:25	<b>Southwest</b> 3554:28 3555:28 3592:4 3710:7	<b>Stakeholders</b> 3731:8	<b>statistically</b> 3635:2,24 3637:11,22 3676:5,6
<b>small</b> 3491:14 3494:21 3508:28 3528:20 3548:25,27 3573:23 3594:21 3597:19 3607:28 3609:28 3610:3 3723:15	<b>Speak</b> 3556:13 3572:16 3691:16 3692:7 3701:6	<b>stale</b> 3558:8	<b>Statistics</b> 3628:7,10
<b>smaller</b> 3566:12 3568:11 3584:10,15 3592:2 3655:5 3677:13 3692:12 3723:13	<b>speaking</b> 3491:16 3496:17 3701:5 3714:25	<b>stand</b> 3558:15 3611:14 3707:28	<b>status</b> 3721:13 3726:20
<b>smart</b> 3726:3	<b>special</b> 3619:22	<b>standard</b> 3518:21 3547:27 3570:2,4,6,22 3576:22 3577:22 3579:3,6 3581:2 3724:8 3727:6 3728:1	<b>stay</b> 3551:28 3570:28 3572:11 3579:26 3690:7
<b>Smoothly</b> 3538:8	<b>specialist</b> 3619:15	<b>standardization</b> 3522:1,17	<b>steeper</b> 3632:28
<b>social</b> 3709:27	<b>specialization</b> 3620:7	<b>standardized</b> 3521:16 3523:9	<b>step</b> 3501:7 3525:11 3707:27
<b>software</b> 3534:22 3535:9	<b>specialized</b> 3709:24	<b>standards</b> 3515:2	<b>Stephenson</b> 3489:6 3526:5, 12 3532:11,26 3533:4,24 3538:13 3569:11 3573:17 3575:6 3580:12 3582:10 3584:19 3598:21 3610:13 3622:23,27 3641:24 3643:3 3652:20 3654:4 3658:1 3663:22 3667:5 3672:8 3673:2 3686:14 3687:18 3705:16 3711:27 3712:10 3717:1 3724:28 3731:1
<b>sold</b> 3495:1,3 3502:20,28 3517:23 3547:26 3562:12 3721:22	<b>specializes</b> 3710:15	<b>standing</b> 3572:7,18	<b>Stephenson's</b> 3581:9 3623:2 3642:5 3643:10,21, 27 3644:7,16 3647:22 3665:14 3673:8 3681:17 3687:25 3705:7 3706:16
<b>solely</b> 3559:17	<b>specialty</b> 3541:18 3620:11	<b>Stanislaus</b> 3710:1	<b>Stephenson's</b> 3720:27
<b>solicitation</b> 3725:20	<b>specific</b> 3510:26 3524:1 3527:16 3529:1 3534:26 3541:9 3543:26 3574:9 3590:8 3651:9 3658:4,20 3679:4,10,13,22 3693:21 3697:16,18 3701:27 3724:18	<b>start</b> 3534:27 3537:13 3565:19 3575:11 3582:12 3585:1,2 3587:27 3588:28 3601:4 3607:25 3617:26 3628:17 3653:18 3678:8 3679:3 3694:25 3705:15 3720:9 3734:26,28	<b>steps</b> 3644:12
<b>solicited</b> 3539:15	<b>specifically</b> 3506:24 3534:6 3545:9 3554:22 3592:14 3624:9 3681:26 3690:25 3692:14 3710:19 3720:24 3725:16 3727:5,24 3729:22 3731:11	<b>started</b> 3553:23 3618:10 3619:3,13 3622:19 3626:25 3650:5 3670:13,14 3690:27 3720:23	<b>stipulates</b> 3727:7
<b>soliciting</b> 3530:24	<b>specification</b> 3724:18	<b>starting</b> 3510:16 3622:19 3631:20 3669:18 3689:6 3703:12	<b>stood</b> 3502:9
<b>solids</b> 3511:24 3512:8 3563:20 3564:7,9,11,12,13 3596:13,28 3602:4 3667:3 3726:22 3727:14,18,23	<b>specifications</b> 3724:17	<b>starts</b> 3537:19 3703:15	<b>stopped</b> 3650:12 3655:14
<b>solids-nonfat</b> 3724:7	<b>spectrum</b> 3527:12 3724:22	<b>startup</b> 3630:7	<b>storage</b> 3545:8,13
<b>solution</b> 3624:27 3700:27 3722:19	<b>spend</b> 3497:10 3575:4	<b>state</b> 3530:18 3557:8 3565:20 3570:12 3618:12 3620:21,23 3624:21 3627:28 3628:1 3630:6 3631:24 3650:10,11 3676:27 3682:16 3692:16,21 3699:1 3708:11 3709:28	<b>straight</b> 3557:24 3639:24 3657:24,25 3659:26 3660:7 3661:8 3678:15 3734:21
<b>solutions</b> 3710:14,15,17 3711:5	<b>spending</b> 3574:22 3575:3	<b>stated</b> 3517:6 3530:9,26 3533:17 3539:9 3544:2 3555:8 3564:4,18 3689:8	<b>straightforward</b> 3547:11 3567:2
<b>sort</b> 3571:13 3598:1 3622:17 3628:8 3631:15 3632:27 3642:5,15 3650:19 3657:24, 27 3665:5 3691:9,23 3694:15,27 3695:17 3698:6 3706:12	<b>spent</b> 3546:12 3582:18 3718:15	<b>statement</b> 3499:12 3506:18 3515:24 3530:10 3539:16 3549:28 3553:14 3555:7 3558:15 3563:13,17 3592:22 3647:9 3720:18	<b>strange</b> 3629:20
<b>sorts</b> 3571:15 3661:22	<b>spiked</b> 3700:9	<b>statements</b> 3520:22	<b>strategic</b> 3709:21 3722:9
<b>sound</b> 3528:25 3648:11,19 3665:21 3666:13,14,24 3682:24 3683:4 3684:21 3685:1 3686:26	<b>spoken</b> 3699:25 3730:11		
<b>sounding</b> 3629:20	<b>spot</b> 3516:7 3698:12 3719:22 3721:22 3723:7,8,9, 19		
<b>sounds</b> 3496:9 3685:2 3687:1,3,4,8,9,17	<b>spread</b> 3651:8 3663:22 3664:2,3		
	<b>squared</b> 3634:5		
	<b>squares</b> 3623:17		



<b>strategies</b> 3701:27	3582:14,20	<b>suppose</b> 3531:12	<b>system</b> 3546:21 3555:10,23 3618:18 3621:23 3650:10, 11,19 3710:25 3711:9,14,16 3712:25 3716:7 3718:26 3719:9 3721:14 3722:2,17 3727:13,17 3729:25
<b>stratified</b> 3527:7	<b>subsequent</b> 3576:26 3638:5 3658:21	<b>supposed</b> 3680:4	<b>systematic</b> 3523:10
<b>stream</b> 3602:7	<b>subset</b> 3561:9 3603:3	<b>surface</b> 3722:9 3724:23	<b>systems</b> 3555:9 3650:17 3718:17,19
<b>stretch</b> 3723:10	<b>substantial</b> 3497:8 3556:8 3711:7	<b>surprise</b> 3505:18 3682:25 3684:19,22	<hr/> <b>T</b> <hr/>
<b>strike</b> 3664:26 3703:13	<b>substantially</b> 3607:28 3666:27,28 3704:16 3732:18 3733:21	<b>surprised</b> 3607:16 3690:3	<b>t-tests</b> 3634:25
<b>string</b> 3725:17,27	<b>subtract</b> 3513:25	<b>surprises</b> 3690:6	<b>tabbed</b> 3492:7
<b>strong</b> 3520:14 3560:10 3633:26 3661:12 3715:1,7, 27	<b>subtracted</b> 3515:9	<b>surprising</b> 3640:20	<b>table</b> 3493:3 3508:28 3509:11,12,14 3540:21 3541:22,25 3542:19 3585:18 3592:24 3605:3 3625:13 3636:24 3639:3,4,7 3653:16, 17 3656:4,5,20 3660:6 3680:1,4 3681:4 3697:9,11 3698:11
<b>structured</b> 3622:12	<b>subtracts</b> 3713:11	<b>survey</b> 3489:9 3490:20 3494:26 3495:8 3496:26 3498:22,23 3500:17 3501:17 3502:7 3504:13 3505:28 3506:2,4 3508:20,23 3510:19 3512:7 3519:2,4 3522:22 3525:2 3528:1,4 3532:11 3533:3 3535:9 3540:3 3543:27 3544:19,28 3546:19,20 3567:15 3582:14,21 3584:7 3586:11 3590:21 3593:1 3595:11 3602:17 3608:28 3609:6,12, 18 3620:28 3622:26 3623:3, 13 3625:14,20,28 3645:4,5, 9,11,13 3665:14,16,19 3672:3,7,9,16,21,27,28 3689:9 3696:22 3705:7,20, 27 3706:6,16,28 3711:26,27 3719:15 3722:28 3723:3 3724:14,22	<b>tables</b> 3528:15 3537:11 3599:4 3653:5
<b>structures</b> 3649:13	<b>successor</b> 3619:19	<b>surveyed</b> 3493:27 3545:19 3558:4 3597:6 3702:24 3724:24	<b>tab</b> 3491:4
<b>struggling</b> 3716:1	<b>sufficient</b> 3719:6	<b>surveys</b> 3490:28 3526:20 3592:26 3595:15 3602:20 3604:4 3620:23,25 3621:3, 18 3641:27	<b>takes</b> 3623:9 3713:10
<b>studied</b> 3499:25	<b>suggest</b> 3555:11 3557:8 3605:17 3623:23 3734:26	<b>suspect</b> 3573:26 3581:12	<b>taking</b> 3498:21 3522:7 3559:23 3596:15 3619:2 3639:26 3652:6,8,25 3659:25 3673:9 3723:26 3733:23
<b>studies</b> 3499:8 3500:2 3508:17 3520:3,12 3524:9 3525:22 3527:6,23 3562:19 3564:15 3566:22,24 3588:9 3591:13,20 3621:25 3646:15 3650:3,16 3653:2 3688:18, 20 3712:2,4 3717:2 3720:8, 24,25,27,28 3725:1,12 3726:20	<b>suggested</b> 3491:20 3536:10 3574:18 3605:5	<b>sustainability</b> 3717:4,15,17	<b>talk</b> 3502:15 3521:27 3549:7 3550:28 3554:5 3559:21 3563:9 3572:2 3585:8 3587:1 3591:14 3594:23 3596:9 3603:23 3628:16 3645:7 3656:17 3658:1 3673:22 3674:26 3690:20 3694:8
<b>study</b> 3489:9 3492:18,28 3495:11,12,14,16,17 3496:11 3497:4,12 3499:4,9, 10,13,26 3500:6,20,21,25 3502:11,16 3506:10,15 3514:5,12 3520:22,24,25,26 3522:24,27 3523:3 3528:1 3533:19,25 3534:2 3539:10 3540:5 3543:12 3550:7 3565:22,24 3566:25 3567:8 3583:2,6,8,11,15 3584:3,4, 13 3585:3 3586:6 3588:6 3594:14 3595:28 3596:11,12 3597:5 3600:8,17 3642:17 3643:3,27 3644:16 3645:4,7, 8,10,13 3646:4,5 3647:6 3651:21 3652:10,21,24 3653:6,22 3654:5,21,22 3655:10 3663:8 3666:4 3667:25 3670:25,27 3673:15 3686:15 3687:19,26 3690:28 3691:3 3711:24,25 3712:10 3721:3 3725:2,7,11 3729:1 3731:1	<b>suggesting</b> 3595:13 3649:4	<b>Sustainability-related</b> 3717:8	<b>talked</b> 3491:6 3495:8 3502:13 3547:17 3580:6 3596:1 3619:24 3642:7 3696:8
<b>study's</b> 3584:11	<b>sum</b> 3489:25 3611:22 3627:15 3634:5	<b>sustainable</b> 3717:9	<b>talking</b> 3489:12 3513:20 3525:18 3582:18 3604:10 3612:8 3619:26 3632:16,17 3635:14 3653:16 3663:3 3674:28 3685:5 3688:28
<b>studying</b> 3621:2	<b>summaries</b> 3492:10	<b>sway</b> 3723:16	<b>tank</b> 3727:21
<b>subject</b> 3532:10 3621:3 3625:28 3647:18,19 3670:2 3705:24	<b>summarize</b> 3520:20 3594:7 3628:23	<b>swear</b> 3578:1	<b>tape</b> 3701:18
<b>submit</b> 3536:4,7 3645:20	<b>summary</b> 3493:3,4 3528:3 3540:22 3560:24 3594:6 3653:5 3655:20,27 3686:17 3714:17 3723:27 3728:19	<b>sweet</b> 3727:8,10 3728:12	<b>targeted</b> 3539:10,22,24,27 3541:23 3542:2 3585:9,27
<b>submitted</b> 3537:10	<b>summing</b> 3635:9,11	<b>swing</b> 3508:25,26 3713:28 3714:17	<b>targeting</b> 3591:20
<b>submitting</b> 3549:8,11	<b>superintendent</b> 3510:8 3590:12,14 3600:15	<b>swings</b> 3655:3	
	<b>supplant</b> 3519:24	<b>switch</b> 3600:2	
	<b>supplied</b> 3493:11 3583:2 3590:6	<b>sworn</b> 3614:6 3708:6	
	<b>suppliers</b> 3711:15 3718:11 3722:8	<b>sympathize</b> 3721:14	
	<b>supplies</b> 3629:3	<b>synthetic</b> 3527:26	
	<b>supply</b> 3525:19 3555:1 3603:8 3693:9 3697:15 3698:1 3699:24 3709:16 3730:8		
	<b>supplying</b> 3555:28		
	<b>support</b> 3510:10 3583:28 3650:7,17 3672:24 3726:20 3734:19		
	<b>supports</b> 3711:20 3712:12, 14 3720:5		



<b>task</b> 3549:21	<b>testify</b> 3534:7 3578:23 3609:21 3667:14 3681:16	3573:14 3574:13 3586:10 3600:5 3610:15 3611:12 3643:16,17 3645:14 3698:4	<b>tobacco</b> 3624:6,7
<b>taxes</b> 3629:2	<b>testifying</b> 3575:2 3618:15	<b>thoughts</b> 3582:3 3604:6	<b>today</b> 3491:21 3569:12 3614:12 3641:25 3658:26 3673:26 3700:5 3708:18 3709:10 3717:18 3718:1 3723:26
<b>Taylor</b> 3490:10 3584:22,24 3598:17 3600:24,26 3604:23 3610:6,9,11 3612:7,25 3689:27 3690:2 3696:28 3699:8 3702:6	<b>testimonies</b> 3708:18	<b>thousand</b> 3606:24 3684:12	<b>Todd</b> 3598:21 3619:26,28 3697:3
<b>team</b> 3645:21,22	<b>testimony</b> 3520:21 3530:1 3536:24 3539:17 3547:15 3554:21 3557:7 3563:23 3564:4 3573:17 3603:1 3605:2,10 3614:11 3619:25 3640:28 3641:2,7,8 3642:4 3643:9 3654:11,24,25 3681:12 3696:7 3699:21 3705:12,25 3710:13 3711:10 3712:5 3729:15 3730:13,23 3733:18 3734:5,23	<b>threading</b> 3657:27	<b>token</b> 3502:27
<b>tease</b> 3692:23	<b>testing</b> 3717:6	<b>threshold</b> 3675:16	<b>told</b> 3498:1 3505:26 3516:21 3647:1 3682:22
<b>technical</b> 3503:11 3593:18	<b>tests</b> 3674:27	<b>throughput</b> 3601:18	<b>tolerance</b> 3548:26,27
<b>technically</b> 3732:17	<b>Texas</b> 3554:23 3684:28	<b>throw</b> 3561:19 3562:10	<b>tomorrow</b> 3705:4,5 3734:26
<b>technique</b> 3657:26	<b>text</b> 3490:11 3499:28 3538:22	<b>tickle</b> 3527:4	<b>tools</b> 3711:15 3713:2
<b>techniques</b> 3607:2 3646:17 3726:24	<b>TFP</b> 3679:18	<b>tied</b> 3507:11,21 3527:20	<b>top</b> 3494:26 3495:27 3498:2 3578:19 3586:8 3631:17 3632:9 3676:26 3687:25
<b>technologies</b> 3519:23 3659:14	<b>Theoretically</b> 3566:11	<b>tightly</b> 3651:4	<b>topic</b> 3564:16 3681:13 3705:6 3721:7 3728:17
<b>technology</b> 3499:19 3658:21 3718:13	<b>theory</b> 3623:23 3626:28	<b>time</b> 3493:6 3494:9 3499:21 3506:1 3507:19 3508:12 3509:20 3514:27,28 3518:25,26 3519:10,15,26 3524:7 3525:5,11,14,27 3526:3,6,19 3527:13 3528:1, 3 3531:8,15,17 3532:28 3536:8,16 3537:5 3542:11 3547:4 3549:16,17 3552:25 3553:20 3554:4 3557:1 3559:28 3560:3,7 3567:26 3573:21 3574:22 3575:3,12 3580:13 3583:24,26 3587:6 3593:15 3595:8 3601:17 3602:23 3608:2 3610:2 3618:26 3619:2,11,18 3620:21 3622:5 3623:11 3624:18,22 3629:13 3630:8 3631:24 3632:23 3641:19,20 3647:22 3658:28 3659:4,11 3665:13 3678:9 3690:17 3691:18 3694:11,22 3695:6 3700:1,15,18,19 3713:14 3716:16 3725:5,28 3732:7, 23 3733:28	<b>total</b> 3509:1,10,23 3511:26 3512:19,28 3513:10 3515:16 3527:20 3529:11 3530:5 3543:24 3564:11,13 3597:6 3598:24,25 3599:5,14,15 3601:20,22 3608:27 3609:3, 6,15 3611:2,25,27,28 3612:1 3624:5 3626:12 3627:13,16 3629:15 3631:13 3634:6 3635:6,7,11,13 3644:23 3667:3 3695:24 3705:17 3706:27 3713:28 3714:17 3716:28 3727:16
<b>telegraphing</b> 3730:25	<b>thereabouts</b> 3546:12	<b>timeframe</b> 3640:19 3691:12	<b>totality</b> 3651:28 3652:25 3655:12
<b>telling</b> 3617:26 3637:19	<b>thin</b> 3498:11	<b>timeline</b> 3584:1	<b>totes</b> 3542:16
<b>temporally</b> 3622:10	<b>thing</b> 3519:21 3520:28 3525:8,23 3535:1 3539:21 3586:3 3589:13 3591:6 3594:2 3607:12 3667:11 3680:18 3682:2 3693:18 3700:13,20 3704:8 3727:13	<b>timely</b> 3729:13	<b>tough</b> 3693:10
<b>ten</b> 3707:20,21	<b>things</b> 3489:10 3494:11,12 3508:10 3510:2,11 3514:26 3516:12 3518:9 3519:13,16 3522:7 3523:2 3524:2 3525:11 3535:12,25 3546:26 3547:3 3548:21 3551:10 3553:27 3566:23 3568:10 3570:28 3571:15 3576:12 3579:19 3586:16 3587:6 3597:16,20,26 3600:16 3601:3,14 3602:26 3605:25 3607:24,26 3623:20,24 3625:28 3626:5,25 3629:1, 17 3630:4,23 3638:26 3658:3 3661:22 3665:22 3673:15 3693:3 3698:2 3699:26 3700:26 3701:3,10, 21 3703:2,6,25 3705:10 3718:3	<b>times</b> 3494:2 3500:12 3501:28 3502:4 3523:3 3536:1 3549:13 3551:15 3557:17 3562:8 3563:23 3582:24,27 3594:19 3599:23,24 3608:25 3609:5, 16 3638:5,12 3661:28 3662:1,2 3668:4 3675:23,24 3680:7,15 3683:16 3704:28 3717:12 3730:28	<b>track</b> 3524:7 3525:24 3608:3 3673:22 3686:21 3723:3
<b>ten-year</b> 3728:2,24	<b>thinking</b> 3515:18 3582:2 3611:13 3657:20 3697:25	<b>timely</b> 3729:13	<b>tracking</b> 3609:13 3638:18
<b>tend</b> 3528:17,21 3580:25	<b>third-party</b> 3579:27	<b>title</b> 3509:28 3522:4	<b>trade</b> 3618:3 3732:10
<b>tended</b> 3550:18,23 3592:18	<b>thought</b> 3489:26 3505:26 3510:15 3549:10 3571:1	<b>titled</b> 3509:12 3576:16 3577:6 3579:1	<b>traded</b> 3731:10
<b>tendency</b> 3504:19,20		<b>titles</b> 3602:27	<b>trader</b> 3731:24
<b>tenth</b> 3670:19			<b>trader's</b> 3732:25
<b>term</b> 3541:12 3634:5 3636:11,14 3639:27 3645:8 3671:4 3680:12,22,23,25 3681:25 3682:8 3693:20 3698:27			<b>traders</b> 3731:14,16 3732:5, 15 3733:23
<b>terms</b> 3514:1,25 3530:19 3558:12 3568:15 3589:8 3607:13 3624:4 3626:14 3654:3 3655:15,16 3668:1 3669:23 3672:11 3674:23 3677:27 3680:19 3691:13,24 3700:7 3701:26 3703:6 3705:7 3706:20			<b>traders/arbitrage</b> 3731:14
<b>territory</b> 3706:13			<b>trading</b> 3733:17
<b>test</b> 3634:27 3713:9,18,21, 25,27 3714:18 3715:2 3727:6,24			<b>trailed</b> 3685:8
<b>testified</b> 3517:11 3534:5 3536:28 3544:22 3563:14 3570:3 3579:2,7 3593:11 3614:7 3671:11 3689:9 3696:13 3708:7			<b>trained</b> 3619:19
<b>testifies</b> 3705:13			<b>transaction</b> 3733:16



<b>transactions</b> 3649:27 3733:22,25 3734:1,4	<b>Twin</b> 3708:15 3709:11 3716:14,22	3650:5,7 3651:20,21 3666:1 3678:19 3681:19,21 3702:21	<b>upfront</b> 3669:28
<b>transcript</b> 3570:13,16,18 3573:25 3576:27	<b>two-thirds</b> 3568:18	<b>understate</b> 3490:4 3560:14, 15	<b>upgrade</b> 3701:22
<b>transcripts</b> 3570:14	<b>tying</b> 3507:20	<b>understood</b> 3549:22 3583:19 3656:16	<b>upgrades</b> 3717:10
<b>transferred</b> 3568:8	<b>type</b> 3508:5 3539:21 3545:2 3593:1 3599:10 3601:26 3623:18 3677:14 3711:11	<b>undertaken</b> 3621:28	<b>Upper</b> 3554:16 3592:4
<b>transform</b> 3505:4	<b>types</b> 3494:11	<b>undertaking</b> 3497:6	<b>upward</b> 3631:21 3703:9
<b>transformation</b> 3502:18 3503:5,14 3563:9,11,14,19 3564:6,20 3565:2,27 3566:7, 11,13,26 3567:1,2 3568:26 3586:9,13,27 3587:2 3596:27 3667:4,6	<b>typical</b> 3552:16 3575:21	<b>undervalue</b> 3564:2	<b>urge</b> 3721:7 3728:19 3734:11
<b>transformational</b> 3503:28 3504:1 3606:25 3607:2	<b>typically</b> 3491:16 3496:17 3551:16 3732:28 3733:2	<b>undervalued</b> 3596:21	<b>urged</b> 3531:7 3534:8 3535:22
<b>transformed</b> 3563:27 3564:1 3566:16,17 3567:4,5	<b>typo</b> 3589:23	<b>undetermined</b> 3700:1	<b>urgency</b> 3500:28
<b>transparency</b> 3712:3 3720:11	<b>U</b>	<b>undoubtedly</b> 3718:8	<b>urgent</b> 3729:21 3730:12,24
<b>treasury</b> 3559:6	<b>U.S.</b> 3493:25 3494:14,19 3609:15 3627:23 3628:6 3629:8 3648:6 3681:24 3682:23 3684:15,17 3687:15 3688:20 3697:19 3709:25 3715:6 3721:21	<b>uneven</b> 3588:24	<b>urging</b> 3498:24 3499:1 3500:20 3501:13 3534:9
<b>treat</b> 3540:20	<b>UF</b> 3601:4,15	<b>unfair</b> 3715:24	<b>usage</b> 3509:17 3608:6
<b>treating</b> 3569:25	<b>Uh-huh</b> 3493:23 3531:1 3577:12 3648:18 3663:19 3666:18 3673:1 3675:22 3679:17 3683:2 3687:10 3695:18 3696:10 3702:15	<b>uniform</b> 3530:22 3713:8,11, 18,21,24,27 3714:3,14,18 3715:1	<b>USDA</b> 3495:19 3501:4 3505:16 3513:19 3533:22 3538:28 3540:4 3543:8,9 3551:4,8 3571:26 3576:10 3598:21 3603:26 3613:14 3622:26 3662:22 3688:13 3689:2,8,16,19 3704:27 3712:4,5 3713:1,6,7,10 3716:5 3720:19,23 3721:7 3723:27 3724:21 3725:17 3726:1,14 3728:9,19 3729:1, 11 3730:3,25,27,28 3732:17 3733:8 3734:11,18
<b>treatment</b> 3578:27 3579:12 3601:6,12	<b>ultimate</b> 3570:25 3575:27	<b>union</b> 3630:12 3648:1	<b>USDA's</b> 3641:22
<b>trend</b> 3499:17 3626:21 3633:21 3639:24 3640:1,2,3, 6,8,10,11,13,21,22,24 3659:21,25 3660:7,18 3661:9,11,13,19,27 3662:1, 10 3691:19,23 3703:5,9,11 3704:12,22	<b>ultimately</b> 3634:21 3734:18	<b>unions</b> 3630:13	<b>usefulness</b> 3568:15
<b>trendline</b> 3714:11	<b>ultrafiltration</b> 3727:26	<b>unique</b> 3697:26 3724:11	<b>user</b> 3535:2 3547:1
<b>trends</b> 3669:17	<b>unallocated</b> 3502:17 3511:6, 14 3563:18 3564:5 3587:6, 21 3664:6	<b>unit</b> 3621:24 3645:22 3647:6 3717:11	<b>utilities</b> 3509:25,28 3510:3, 17,18 3590:16 3602:22 3603:17,18 3626:18 3680:28 3685:8,12,21 3699:2
<b>true</b> 3497:24 3512:21 3524:26 3528:19,21 3543:1 3575:18,25 3595:22 3596:23 3603:16 3677:15 3690:7 3711:9	<b>uncomfortable</b> 3504:26	<b>United</b> 3591:17 3609:3,7,11 3705:19 3706:18	<b>utility</b> 3525:28 3607:26 3626:15 3627:11,14,15,21 3631:14,19,21,23 3632:22 3635:8 3636:16 3637:4,7 3641:21 3684:7 3685:16 3686:4 3698:19,28 3699:5
<b>trust</b> 3513:3,4 3532:12 3667:21 3725:9	<b>underallocated</b> 3502:25 3503:2	<b>University</b> 3503:8 3536:15 3553:23 3619:6,11 3620:8,9 3709:28	<b>useful</b> 3535:2 3547:1
<b>truth</b> 3574:14 3576:20	<b>underestimated</b> 3504:8	<b>unknown</b> 3630:17	<b>utilities</b> 3509:25,28 3510:3, 17,18 3590:16 3602:22 3603:17,18 3626:18 3680:28 3685:8,12,21 3699:2
<b>tune</b> 3548:3	<b>underlying</b> 3558:12	<b>unmarketable</b> 3727:28	<b>utilize</b> 3711:15
<b>turn</b> 3490:6,18 3493:13,14 3587:27 3589:21 3592:21 3595:27 3597:3 3608:9 3627:17 3660:5 3676:24 3707:22 3710:21,28 3729:5	<b>underrepresented</b> 3591:26	<b>unmistakable</b> 3714:11	<b>utilized</b> 3643:21
<b>turning</b> 3608:13 3679:15	<b>understand</b> 3500:10 3517:14,17,21 3518:15,16 3525:15 3532:17 3535:17 3542:8 3543:6 3548:14 3571:6 3576:10 3578:6 3603:10 3610:13 3612:23 3643:12,26 3644:27 3647:11 3656:24 3658:25 3665:24 3667:3,24 3695:25 3703:10 3707:25 3720:8 3728:18	<b>unnecessary</b> 3537:27	<b>V</b>
<b>turns</b> 3617:9	<b>understanding</b> 3522:26 3545:11 3558:24 3581:21 3643:20,25 3644:4 3645:18	<b>unpredictable</b> 3722:11 3723:21	<b>vaguely</b> 3558:23
<b>twenty</b> 3691:3 3703:12		<b>unring</b> 3571:24	<b>valid</b> 3563:15 3565:15 3568:26 3570:25 3580:26 3686:13
		<b>unsalted</b> 3597:11,17	<b>validity</b> 3557:11
		<b>unstable</b> 3721:15	<b>valuable</b> 3673:10 3734:6
		<b>unusual</b> 3533:11 3563:25	
		<b>upcoming</b> 3501:2	
		<b>update</b> 3491:25,28 3499:3 3532:10 3533:24 3583:6 3671:13	
		<b>updated</b> 3559:12 3583:11,12 3720:12	
		<b>updates</b> 3525:26	
		<b>updating</b> 3534:2 3700:24	



<b>valuation</b> 3523:27 3667:7	<b>versus</b> 3506:10 3547:25 3548:20 3598:23 3641:4 3656:19 3664:11 3666:2,9 3671:14 3681:23 3683:13 3713:6,8,14,21,27 3714:14, 17,23 3715:1 3716:20 3719:17 3721:4 3723:14 3724:13 3728:11,23 3733:10	<b>watch</b> 3525:24	20,22 3568:5,6,7,9 3585:21, 22,23,26,28 3586:2 3589:22 3595:11,23,24 3600:3,9,14 3601:24,25,26 3602:9,13 3606:15 3624:9,11,12,13,21, 22,26,28 3625:5,10,18 3631:25,26 3637:8 3638:23, 25 3641:5 3653:1 3660:26 3663:3,5,9,11,12,14,18,23 3664:11,16 3665:7,8,27 3666:1,9,11,21,22 3668:3,5 3673:19 3687:7,8 3691:26 3705:18 3706:24,25 3709:16 3710:18,23 3711:1 3716:17, 19 3717:25 3728:8,9,11 3731:17 3733:6,28
<b>value-added</b> 3601:26,28 3602:8	<b>video</b> 3642:22	<b>watched</b> 3666:8	<b>whey-based</b> 3711:4
<b>valued</b> 3727:9	<b>view</b> 3521:14 3583:7 3652:8 3658:2 3706:26 3721:14 3731:10	<b>watching</b> 3726:9	<b>whirl</b> 3513:17
<b>values</b> 3504:20 3514:26 3537:15 3548:22 3557:25 3565:23 3584:14 3586:27 3589:18,20 3590:8,12,13,14, 23 3596:10 3600:4,15 3611:7 3635:10 3638:24 3639:10 3640:6 3656:2,6 3728:7	<b>viewed</b> 3567:23	<b>water</b> 3573:16 3601:12 3717:11,12 3718:4,18	<b>wholesale</b> 3725:21,24
<b>valves</b> 3719:28	<b>virtually</b> 3571:5 3723:1,3	<b>wave</b> 3554:2	<b>wide</b> 3655:3 3696:5
<b>Vandenheuvel</b> 3692:6 3730:12	<b>Vitaliano</b> 3516:20 3572:1 3573:13	<b>ways</b> 3509:16 3521:20 3612:2 3719:13 3723:16	<b>widely</b> 3535:14 3538:27
<b>variable</b> 3623:21 3630:21 3632:1 3633:6 3634:11 3638:4 3675:5,12 3676:20 3677:28 3678:18	<b>volatile</b> 3723:21	<b>WCM</b> 3502:1	<b>wider</b> 3525:5
<b>variables</b> 3623:20,22 3626:26,27 3627:3,6,10 3628:22 3629:19,26 3630:2, 16,19,22,25 3631:2,4 3633:10,12,14 3634:17 3635:1 3637:1,8 3638:18 3640:16 3661:15,26 3662:8 3669:9 3678:4,6,8,11,17 3699:17	<b>volatility</b> 3721:27	<b>WCMA</b> 3498:23,25 3499:2 3500:20 3501:13 3533:23 3534:8 3711:21	<b>William</b> 3614:4,5
<b>variance</b> 3550:1,4,5,12 3678:25 3713:20,27	<b>volume</b> 3497:28 3506:8 3527:20 3528:18 3545:17, 19,23,24 3584:10,16 3594:18 3595:2,9,16 3610:4 3650:28 3651:1 3652:23 3653:16,18,27 3654:3 3655:7	<b>web</b> 3626:9	<b>Wilson</b> 3598:17,20,21 3600:23 3611:17 3612:4 3619:25,26,27 3697:2,3,4
<b>variances</b> 3713:6 3714:9	<b>volumes</b> 3584:9,15 3595:12 3597:7 3624:18 3733:15	<b>webcast</b> 3490:12,14	<b>wind</b> 3489:10
<b>variation</b> 3634:11,13 3635:18 3648:3 3676:19 3677:27	<b>voluntary</b> 3495:11 3520:25	<b>website</b> 3536:14 3538:26	<b>window</b> 3658:28 3659:2
<b>variations</b> 3647:28 3658:4,8 3675:5,11 3678:18 3725:3	<b>W</b>	<b>websites</b> 3535:12	<b>wire</b> 3701:18
<b>varies</b> 3653:3	<b>wage</b> 3628:5 3633:6 3635:1 3636:9 3637:5 3638:8,10,12 3640:17 3647:26 3648:8,9, 13,22 3662:8 3675:23 3676:4 3679:3,4 3680:8 3682:16 3683:17,27 3684:3, 4 3693:14,19,22 3694:9	<b>WEDNESDAY</b> 3489:1 3614:1	<b>Wisconsin</b> 3503:8 3536:5, 13,15 3562:18 3564:28 3648:14,22 3669:2,6,13,23, 26 3711:18,21 3713:16,23 3720:6
<b>variety</b> 3522:5 3556:16 3721:16 3729:3	<b>wait</b> 3729:1	<b>weeds</b> 3690:8	<b>Wisconsin's</b> 3669:18
<b>vast</b> 3692:13 3704:20 3728:26 3733:2	<b>waiting</b> 3671:13,15	<b>weekly</b> 3567:27	<b>witnessed</b> 3550:5
<b>vats</b> 3601:16	<b>waived</b> 3707:25	<b>weeks</b> 3582:26 3694:28	<b>witnesses</b> 3572:25 3577:17 3578:23 3595:28 3640:28 3641:2 3642:4 3689:8 3696:8 3730:22
<b>vendors</b> 3698:3 3718:11	<b>walked</b> 3546:18 3682:27	<b>weight</b> 3504:11 3575:22 3576:11 3580:28 3724:23	<b>WMCA</b> 3711:23 3712:15 3721:9
<b>Venture</b> 3710:10,11,26 3711:2 3712:11 3717:26 3718:22	<b>walking</b> 3491:3 3523:4	<b>weighted</b> 3505:10 3551:5 3561:9,25 3565:22,23 3570:8 3584:14 3589:10,14, 17,19 3591:2,5 3596:10 3599:9 3610:17,23,28 3611:1,7,25,26 3625:14,19, 21 3648:6 3650:20,22 3651:5,12,15 3652:3 3681:18 3687:18 3713:12 3724:12	<b>WMCA/IDFA</b> 3711:28
<b>Ventures</b> 3710:6	<b>wanted</b> 3490:15 3533:13 3536:17 3541:8 3548:3 3557:23 3564:17 3575:28 3579:9 3581:5 3583:9 3589:21 3593:26 3594:4,23 3599:19 3600:5 3602:16,22 3604:5 3609:2 3618:14 3628:24	<b>weightings</b> 3724:13,24 3733:14	<b>Wolf's</b> 3562:26
<b>verbal</b> 3492:2	<b>waste</b> 3601:12 3717:11	<b>weighthing</b> 3502:17 3504:19, 24 3523:10 3563:18 3564:5 3596:24 3607:5 3721:19	<b>wondering</b> 3546:17 3589:25 3595:17 3597:10 3601:1 3604:1 3692:13,18
<b>verify</b> 3522:22 3569:12 3657:15	<b>wastewater</b> 3601:6 3718:17 3727:14,19,25	<b>whack</b> 3666:25	<b>word</b> 3529:16 3591:15 3648:12 3660:11 3663:26 3665:2 3668:11 3688:15 3696:21
<b>version</b> 3636:13 3728:16		<b>wheel</b> 3541:14,17	<b>words</b> 3498:28 3505:6





3509:22 3519:7 3536:18 3539:19 3565:11 3578:15 3596:18 3605:21 3612:19 3692:3 3702:23 3714:4	22 3652:19 3653:3,28 3655:10 3656:11 3692:11 3701:1 3702:13 3703:15 3720:23	
<b>work</b> 3503:9 3516:21 3517:14 3535:18 3562:18 3563:8 3567:11 3593:19 3622:23 3642:5,10 3643:10, 21 3650:6 3664:4 3665:4 3667:22 3682:1 3695:25 3696:3 3708:15 3709:10	<b>years</b> 3508:14 3527:24 3531:20 3552:7 3553:24 3558:9,12 3559:8,12 3568:8 3577:1 3592:18 3603:25 3607:19 3622:9,14 3624:15 3625:18 3631:20 3632:9 3638:4,15 3640:19,24,25 3645:20 3650:21,24 3663:2, 6,9 3671:7 3688:23 3696:3 3700:25 3701:23,24 3709:13,18 3713:4 3714:28 3716:18,20 3718:2,9 3719:16 3721:5 3730:25	
<b>worked</b> 3503:6 3593:19 3618:8 3645:19 3646:12 3709:13,17,19,22	<b>yesterday</b> 3491:6 3492:4 3493:26 3519:13 3534:23 3540:28 3543:18 3545:8 3546:12,27 3547:22 3549:27	
<b>workers</b> 3628:6 3630:13 3648:2 3682:18 3717:22	<b>yield</b> 3514:2,6,11,24,28 3548:2,5 3557:10,17 3558:11,17 3728:4 3729:2	
<b>working</b> 3494:13 3507:23 3536:22,23 3537:1,14 3538:15,18 3539:3 3555:10 3558:28 3586:11 3604:4 3619:15,22 3657:16 3666:6 3718:25	<b>yields</b> 3514:8,11 3519:8 3726:21	
<b>works</b> 3513:16	<b>yogurt</b> 3494:5	
<b>world</b> 3523:9 3524:26 3567:19 3629:20 3640:26 3645:11 3706:9 3713:15 3726:21 3729:2	<b>York/new</b> 3619:12,18 3620:4	
<b>worse</b> 3561:2 3716:1	<b>young</b> 3558:23	
<b>worst</b> 3732:22		
<b>worth</b> 3514:27 3526:20 3734:16	<hr/> <b>Z</b> <hr/>	
<b>worthwhile</b> 3502:11	<b>zone</b> 3713:19,25	
<b>WPC</b> 3542:20,22,24 3543:1, 4,11 3585:28	<b>zoned</b> 3553:20	
<b>WPCS</b> 3585:22	<hr/> ... <hr/>	
<b>wrap</b> 3491:22	<b>...make</b> 3720:14	
<b>write</b> 3556:23 3655:20	<b>...the</b> 3730:17	
<b>writing</b> 3725:28		
<b>written</b> 3530:10 3535:21 3564:4,21 3614:11 3708:18 3730:13,23		
<b>wrong</b> 3566:3 3594:2 3606:6,11 3675:13,17		
<b>wrote</b> 3596:26		
<hr/> <b>Y</b> <hr/>		
<b>year</b> 3524:8 3548:10 3552:13,19 3583:25 3592:12,13,16,19 3603:7,13, 18 3609:7 3621:22 3622:12, 19,21 3623:13 3625:17 3626:23 3630:9 3639:8,15, 27,28 3640:23 3644:5,10,19,		

