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# Analog Devices, Inc. (ADI)

Citi Global Technology Conference

## CORPORATE PARTICIPANTS

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## MANAGEMENT DISCUSSION SECTION

Christopher Brett Danely  
*Analyst, Citigroup Global Markets, Inc.*

[Abrupt Start]...

...Chris Danely, the semiconductor analyst here at Citigroup. Next up is the Analog powerhouse, combination of ADI and Linears. Doing a lot of great things over here. We always like the analog industry because it's got some of the highest margins – sustainable margins. And once again, you can do a lot of accretive things with all that cash like buying Linear or paying a large dividend, which Analog Devices does it both.

So here today to talk about it, we have Prashanth Mahendra, who is the CFO. We also have Mike Lucarelli, who is the Grand Poobah of Investor Relations. Since they just reported and probably some of you were on the beach or maybe even thinking about the beach, I'm going to have Mike give a quick summary of what they talked about, about 10 days ago. And then, I'll jump on into Q&A. And as always, if anybody feels the need to ask a question, feel free to raise your hand or throw something at me and get my attention.

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Michael C. Lucarelli  
*Director-Investor Relations, Analog Devices, Inc.*

Sure. Thanks, Chris. Thanks for having us. Thanks, everyone, for joining us here today. So we reported a couple of weeks ago. We reported strong results of revenue above the high end of our guided range. It was driven by B2B, which grew double-digits once again. It was actually I think our sixth quarter in a row of strong B2B growth, led by industrial and communications.

Gross margins came in above 71%; op margin above 42%. So really a strong quarter for us. All of that resulted in EPS above the high end of range. And on a trailing 12-months, our free cash flow is \$2.2 billion or 36% free cash flow margin. Fantastic numbers. And what it allowed us to do was de-lever the balance sheet. We hit our 2x leverage last quarter, which was an important milestone for ADI because now we can reinstate our buyback program. And on the call we talked about our buyback program, and Prashanth will try to get into more details about it.

We generate a lot of cash, we pay a healthy dividend, and we will continue to de-lever and we'll start buying back shares again. So really a strong story. And our outlook was equally as good. We think B2B's going to grow again by double digits, low-double digits here in the fourth quarter. And it was really industrial and comps driving that growth once again. So really a strong report and a good outlook for us.

## QUESTION AND ANSWER SECTION

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Great. Prashanth, why don't you go ahead and dig into what the debt picture looks like now and what the plans are, to either continue paying down the debt, as Mike mentioned, strong dividend? Are you going to divvy up the cash?

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Yeah, great. Okay. Thanks, Chris. So to put some context around this, as Chris and Mike alluded to, we generate a pretty significant amount of cash for a company our size, over \$2 billion, which puts us on a free cash flow yield among the top of the S&P 500.

As we think about that cash, what has changed over the last couple years partly due to tax reform and partly due to some other organizational changes that we've made is we now have full and free access to that cash. Go back a few years, and there was a challenge faced by many companies with a significant amount of that cash trapped offshore.

With full and free access to that cash, we've announced that after debt repurchase we intend to distribute 100% of that cash back to our shareholders. And that's going to come through the dividend, which we have been paying; paid a dividend for the last 14 years and we've increased it 15 times over those last 14 years. We continue to see that as the cornerstone of our capital allocation plan, and look to continue to drive that dividend 5% to 10% growth per year.

And then, on top of that, we're getting back into the market now that we've hit that 2x leverage, which was a commitment we made to the ratings agencies and our fixed income investors. We're getting back into the market now with a share repurchase program. Starting off at a minimum, our goal is to be offsetting dilution and then, over time, look for us to continue to drive down the share count.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Prashanth, can you talk about, I guess, your ideal debt load or debt level?

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Yeah. Chris, again, if you think about ADI historically, partly due to the trapped cash, this company ran at a net cash position. Given the amount of cash that we generate and given that that cash flow is relatively strong even through market cycles, we feel very comfortable about maintaining some level of debt, particularly today's environment.

So we're very comfortable with leverage, and I would expect us to continue to keep some level of leverage on a go-forward basis. That ideal leverage ratio, I think, more in terms of what's the cost of capital that that's incurring. So we're at a stage today where we're happy with the ratings that we have. I'm not particularly looking to drive back to the A that ADI was at historically. But I do want to be mindful that we are in an increasing interest rate

environment, so ensuring that we're mindful that as cost of borrowing does increase, we want to be in a position that we can afford capital. So ideal debt leverage is really just maintaining that investment-grade.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Will it be a kind of a wide range of 1 to 2 times net, or would it fall outside of that range?

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

No. I think that's probably the right way to think about it, is 1 to 2 times.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Okay. And then, so if we start projecting all this cash you guys are generating, you're almost there in terms of the 1 to 2 times net, and it doesn't take a ton of stock buyback just to offset dilution. You said you've started to go over on the other side and, obviously, you guys are funding the dividend pretty well. So it appears that you might start building up cash again.

Or would you just look to say, okay, whatever excess cash we sort of generate past the dividend and then once we get our debt set, would it just like split evenly between a little more of buyback and a little more dividend or I guess conceivably – because it seems like you're going to run into this within the next couple of quarters, but how would it work.

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Yeah. I think it's a good...

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

It's a good problem to have.

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

It's a good problem to have, yes.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

I wish I had it.

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

So we have a couple bullets coming due next year. I think roughly \$650 million on the term loan and maybe there's another \$300 million on top of that. So we're mindful of making sure that we've got enough to settle those out. And then, beyond that, really it is being conscious of our own valuation models on how we think about where ADI is and whether it's intrinsic value, DCF, market multiples, a lot of different metrics we look at, what we wanted to maintain some flexibility on.

And I think that's probably the gist of your question is that if we're intentionally giving ourselves some flexibility on when we go into the market more aggressively to repurchase the ADI shares versus kind of having folks assume that it's going to be a more mechanical deployment over time.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Got it. Okay. And then, now that you've been here for a while and you've had Linear for a while, and maybe give us an update on how the latest and greatest acquisition is going?

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Yeah, yeah. It's been a phenomenal acquisition for ADI. I think there were a lot of concerns early on in terms of this was an organization that had a very unique and distinct culture, and there were concerns about that cultural integration. There were concerns about, given the price that was paid, did we believe that there was enough synergies coming off of that that would warrant the premium that was paid. In both of those areas, we feel very good looking in hindsight now.

In terms of integration, we've now fully integrated Linear into ADI. I think all that remains are just a few remaining IT systems. Primarily, there are some general ledger items that are still on the legacy system. But, organizationally, they are absolutely a part of ADI. We are in the process of co-locating the bulk of the employees in California into one location.

The feedback we've gotten from the engineering community on the opportunities that are available to them now to work with the ADI portfolio of products in terms of co-designing activity has been very strong. So from a cultural standpoint, I think that we feel very good that this has been a win for the Linear employees, for the ADI employees and certainly for our shareholders.

When you think about where is the value coming from, we've committed to \$150 million of synergies in the first 18 months. We put that behind us relatively quickly. On top of that, in January of this year, we announced that we are working towards generating another \$100 million of cost synergies purely at the gross profit level. That's related to two facility closures: one in Singapore, which was a testing facility; and the other one in California, which was a fab, to put that \$100 million in context because I think that's helpful for people to appreciate the value that these two companies bring together.

Linear was about a \$1.5 billion revenue company. They had phenomenal margins, north of 70%. Think of a cost of goods spend of, let's call it, \$400 million. And our ability to remove \$100 million out of that \$400 million really speaks to the power of the combined manufacturing, taking ADI's competency in that manufacturing space and applying that to Linear.

On top of that is the revenue synergy. So we've been working very hard over the last couple months to map the universe of where the opportunities are. So that's been what Vince has talked about in the earnings calls as the opportunity pipeline. This is an analysis that we've done at an account level, at a socket level, at a country level, to specify where do we clearly see that there is an opportunity for Analog Devices to sell more ADI components and more Linear components across to each other's customers and into new segment.

Having mapped that universe at a very finite level, we now shift the focus to converting that pipeline. It is early days, but I can tell you that from the reviews that we're doing and the wins that we're getting for being this early

into the process of what will be a multi-year conversion process, we're very happy with the visibility we have to wins that will convert to revenue a little bit in 2019, but really starting to ramp meaningfully in 2020 and 2021.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

And a few issues or a few things you guys brought up as you were closing the transaction, I just wanted to touch on and see how they're going. I know, historically, Linear didn't exactly have the most flexible pricing. Have you changed that? What's going on there?

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Yes, yes. The philosophy that we're running is, the profitability of Linear is instrumental to the valuation, but having a tilt towards growth is really the change. It's a nuance change, but it is the change that we're driving. And by tilting towards growth, it's a few things. Linear had a very successful operating model that was based on largely running their production in their internal fabs, which then led to a practice of when there was a new opportunity that offered more profitability, it replaced something that was in production that would've been less profitable. That's the limitation that you have when you constrain yourself to an internal production model.

What ADI has been doing with Linear is opening up that aperture to give them access to the strong manufacturing capabilities that ADI has outside of our internal fabs, the partners that we use throughout the globe including TSMC, of course, that we've been public on. That has opened the opportunity for us to allow Linear a lot more flexibility on pricing and then push that challenge back up to our manufacturing organization to find the cost reductions that are necessary to allow us to maintain the profitability.

In addition, we've given a bit more focus to incumbency. When we are incumbent on a socket, we recognize that the cost or the R&D cost of holding that position is relatively low, if anything at all. So having some price flexibility there is still highly accretive to operating margin. So guiding the organization to think more holistically versus some very successful, but hard-and-fast rules that I think the LTC management used to use.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Has that changed the revenue growth or margin trends at Linear at all? Helped or hurt either of them?

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Well, I think, Linear had a phenomenal quarter in third quarter. I think it was their largest quarter ever, Mike, is that right?

Michael C. Lucarelli

*Director-Investor Relations, Analog Devices, Inc.*

A

Correct.

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

A record quarter for Linear. So we're certainly seeing the benefits of that begin to roll through. We have activity in the pipeline with the organization in terms of wins which give us great confidence that the strategy is going to pay

out for us. On the margin side, really, you can see it in the overall margins of the business. This continues to be a phenomenal franchise at industry leading margins. Coming from where I was before joining ADI, this is a hardware business with software margins.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Yeah. It's not a bad business. One other I guess issue that you guys had to get over was the comp structure of Linear. Can you just talk about that a little bit? What you've done there? Has anything changed?

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Yeah. Quite a bit has changed actually. So the compensation structure was uniquely different to Linear. And part of the new program, which has been rolled out now for several months is to harmonize Linear into the same metrics that we used at ADI, which is rewarding growth as well as profitability. It was that growth element that was missing from the Linear structure before...

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Pure profits.

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Pure profit was at the employee level. It was more a profit sharing model than it was an incentive structure. So we've moved to this new mix model. And with that comes leverage as well. So while there is some risk that the employees are not taking in terms of being measured against performance metrics versus a profit share, with that leverage also comes the potential for significant upside.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Okay, great. One other one is – or that you talked about was the ability to learn from Linear some of their best practices. Can you talk about what they've brought to the table?

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Yeah, definitely. I think one of the key process items that we've incorporated from Linear is that they had a simplicity and a bias to action that was very successful for them. So as we reviewed how ADI runs a number of its processes, Vince has been very clear that this is a best-of-both integration approach. So we were looking at what does Linear do well, what does ADI do well and even at a leadership level and choosing the best of both. So there has been a number of processes that helped Linear be efficient and fast that I think we've incorporated into ADI. And certainly at the organizational level, there are folks not just in the power business but throughout ADI who have come from senior Linear positions. So they're sprinkled in across the organization.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Great. Let's dig into the business or the end markets. The one that a lot of people talk about a lot is autos.



Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Yeah.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

One of your bigger end markets. Maybe give us a sense of what the current business trends are there and what sort of longer-term growth we should expect.

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Yeah. So auto is really a bit of a tale of two cities. So I'm going to break it down and go through ADI first and then Linear. The ADI business continues to grow very well, high single digits and has been driven on the strength of really the core digital signal processing technology. We've got a number of new products that are working their way to peak volumes. And the one maybe I'll highlight specifically is A2B. This is a technology that we brought to market recently. We now have 12 OEs signed up for this and it is a solution that allows our customers to significantly reduce the weight of cabling in their vehicles by coming in with an analog-to-digital solution. We've done remarkably well in terms of the interest that we've had from OEs in putting this in. I think you'll start to see more of that revenue start to move towards peak production maybe late 2019 through 2020.

In addition, an area that we've seen some pretty strong interest in and I'm very optimistic about is our IMU technology. This is technology that we bring from our aerospace and defense business. As we move to more autonomous driving vehicles, there is a key need for the vehicle to know its location and its motion when it loses its GPS signal. So this IMU is – and I'm going to give you the CFO's explanation, but it is a measurement device that is able to measure motion across multi axes. And by that, you're able to feed the computer with where is the vehicle and how has it drifted since you've lost that GPS connection. Very, very strong interest from a number of companies, including specifically on the disruptors. We are excited about that because bringing that technology in from our aerospace and defense, we think, gives us a significant advantage since we've had the opportunity to mature that technology there.

LIDAR is another area that I think you'll see significant strength in the future. Today, it's largely a component play. We do have a solid-state device that is getting close to launch. And as that starts to move to production, the interest we've seen from a number of companies have been very strong. I think we did have a press announcement a couple of weeks back with Baidu, which talked about their adoption of a number of our automotive technologies. So on the ADI side of the house; it's been a great story, good technology. We see continued demand for the products driven by, one, the desire to make the car more of a consumer environment with good sound and functionality and features, which require the ADI technologies; and then, second, with the advent of self-driving cars as we continue to move down that journey, I think the precision that ADI brings to the measurement space is going to play well for us in Level 3, Level 4 cars.

Shifting to Linear, a little bit different story. LTC had a remarkable BMS product. In fact, it's probably still the best product out there. But as you alluded to early on, Chris; this was an organization that was very focused on pricing. And if they couldn't get kind of the prices they wanted, they went and found another area where they could extract value from. As a result of that, there was an opportunity for competition to have good enough technology that met what the customer was looking for. And that put some pressure on LTC. As a result of that, there were some share losses that happened in BMS. We feel very good from where we sit today that there's wins that are in progress that are going to be able to recapture some of that share loss. And in general, the move towards more



electric vehicles, plug-in, hybrids and such continue to drive the need for more sophisticated power management. And particularly you think of an electric vehicle and the amount of voltage management that you have to do in an EV in terms of providing what you need for the different technologies, whether it be the USB port for you to charge your iPhone, the voltage needed for the self-driving systems, the radars, the LiDARs, the entertainment systems, the LEDs, all of those require precision management of voltage. And that works extremely well to Linear's strength of being able to do it efficiently in a small form factor with limited noise.

**Christopher Brett Danely**  
*Analyst, Citigroup Global Markets, Inc.*

Q

Okay. A couple of people have asked at previous presentations and in the halls, any impact from volatility in SAAR out there at all?

**Prashanth Mahendra-Rajah**  
*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

I think we've heard a bit more about that actually in this conference than prior to coming in here.

**Christopher Brett Danely**  
*Analyst, Citigroup Global Markets, Inc.*

Q

[indiscernible] (22:02). GM's right after you guys.

**Prashanth Mahendra-Rajah**  
*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

So from where we sit today, we have not yet seen the impact. I understand from the folks we've talked to today that it sounds like it's a bit more starting in Europe. But I can't say that we'd begin to see the impact of that. It doesn't mean that we won't. But where we sit today, we have not.

**Christopher Brett Danely**  
*Analyst, Citigroup Global Markets, Inc.*

Q

Yeah. Nobody else has said anything either. Moving into your biggest end market, industrial. One more thing because I think Vince did talk about your expected growth rate for next year for the big end markets. What was that for autos just for reference?

**Prashanth Mahendra-Rajah**  
*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

So autos, we're still looking at kind of next year being in that mid single digit rate. I think he talked about the inflection for autos to grow at a faster rate back to kind of 2 times to 3 times SAAR happening towards the end of next year or really into 2020.

**Christopher Brett Danely**  
*Analyst, Citigroup Global Markets, Inc.*

Q

Okay, great. And then switching gears to industrial.

**Prashanth Mahendra-Rajah**  
*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Yeah.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Give us your latest thoughts there.

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Okay. So industrial really is the largest segment for the ADI franchise. It is composed of a large, large number of customers with a large number of SKUs. And that creates a very high barrier to entry and very sticky product portfolio. That industrial market, we break down into a couple of pieces, automation, instrumentation and then aerospace and defense. Mike mentioned the industrial market has been growing up and to the right for the last several quarters. And when asked by folks such as yourself, Chris, what's been behind that; for several quarters, our answer has been it's everything. It has been really uniform, all markets, all customers, all segments.

We still see a very strong trend even as we look forward today. I would say that if I re-characterize that, I would say most markets, most customers, most segments still strong up and to the right, double digit. Where we're seeing a little bit of change maybe more normalizing is in our automation space. And it's very tough at this point to kind of say is that temporal as a result of kind of what's happening in the geopolitical environment or is it just that demand taking a breather after having so many years of strong growth.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Yeah. So we just had another company that competes close to you guys talk about the same thing. And they said that there appears to have been a little bit of an inventory build just because things were so tight. And now we're seeing the inventory go back to normal. So it should be over in a quarter or two. Does that make sense or -

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Yeah. We have not seen the inventory build. We monitor inventory both in the channel and majority of our industrial business goes through [indiscernible] (25:10). And as part of the arrangement that we have with our distributors, we have very good visibility into their levels. And today, we are still measuring revenue [indiscernible] (25:22) sell-through. So for us, it doesn't count as revenue until a distributor puts it into a customer's location.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Got it.

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

So that gives us a lot more confidence that we're measuring true end demand versus kind of fluctuations in the channel. So that kind of inventory levels broadly across ADI at the distributor level. Around 7.5 weeks, they've kind of been at that level for the last couple of quarters or they're up versus last year but not meaningfully. And we're expecting them to kind of contract a bit as we go into the fourth quarter, but that's just normal, the cyclical unwind.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Okay. So it doesn't sound like there is an inventory -

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

So I do not have concerns about inventory at this point.

A

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Do you think there could be any sort of impact from the tariff or the trade war or anything like that?

Q

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

Yeah. So I think there's two ways investors need to think about tariffs as it applies to ADI. There is the tariffs that apply to integrated circuits. And the way to think about that is for a tariff to apply to something that we are manufacturing, it has to check two boxes. It has to be assembled in China and it has to be imported into the U.S. So when you look at the scope of our products, what meets both of those requirements is limited to about 2% of our revenue. There are a number of ways that our customers can solve that problem. The most obvious one is by choosing not to import into the U.S. at the IC level. If that end product is being built in another location and in many cases they are and the import into the U.S. was simply to help manage logistics, then that's a relatively easy fix that many of them are exploring, which is why do I need to bring it into the U.S. just to package it up with a bunch of other items only to send it to another location for final assembly. I can just have it shipped directly to that final assembly location. So we do see that activity going on. We've been clear with our [indiscernible] (27:28) and I think they're with their customers that any tariffs that are being applied are being pushed all the way down.

A

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Yeah.

Q

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

So it's driving the right behavior for end-customers to think about how do I rejigger supply chains to avoid that. So the first level answer is tariffs for ADI products, really a non-event. I think the more significant question and the one that I'm not sure I can add much more insight to is as you go further and further down that supply chain, as those end-products are beginning to have tariffs applied to them and whether it's our content or others in the industry providing content; when do we see the impact of demand on that flowing through? And today, I would say we're not seeing much with the exception of kind of this automation comment that I made, which we think is more China-specific. But beyond that, I would say that it hasn't yet rolled through all the levels of the supply chain.

A

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Got it. And just to be clear, you're still expecting double-digit growth from industrial, correct?

Q

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

We are looking for industrial to be probably in the low double digits, I think, is what we're calling for fourth quarter.

A

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Yeah, that's pretty darn good. And then maybe touch on communications.

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Yeah.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

And also give a little bit of thoughts on 5G -

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Okay, sure, yes. So communications for ADI, we think about in two pieces, wireless and wired. I'm going to focus a little bit more – and they're about equal in size. And while wired has been a good story, wireless has been a great story. So let me spend more time on that. Strength in ADI comps for 2018 is largely a reflection of the strong share gains that we've had primarily in the 4G space. So based on wins that the team had secured towards the end of last year, we're beginning now to see the benefit of that as that rolls through the big five wireless infrastructure guys. And those share gains are translating into meaningful revenue growth opportunities for us as well in 2018.

On top of that, more recently, there has been some good growth in small cells. My understanding is that tends to be a bit more for the Asian market than the U.S. market and the use of small cells. But nevertheless, it's playing very well because it's a segment that we have a very strong position in it. And then the third level of that, what Chris alluded to is 5G. Through 2018, we've shared that we've had some incredible success in winning pole positions in a number of the pilots. Essentially, almost all the trials of 5Gs that are going on have some level of ADI content in there. That is, that's partly driven on the success of the combination of ADI and the Hittite organization that we purchased about four years ago.

Starting from that strong position, as those opportunities move from pilot to production, we would expect our share position on 5G to be even stronger than our share position on 4G. In terms of timing on that, where we are today is our sense is Japan and Korea are in the kind of the early stages of beginning to spend more meaningfully on 5G. And for 2019, I think we remain optimistic. And certainly what we're hearing from our customers is that China should begin to ramp towards the second part of 2019. There's a lot of speculation whether that actually does happen. But if that does begin to really move, then I think you'll see our comms growth in 2019 even surpass what we saw in 2018.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

[indiscernible] (31:49) start as early as – material for you guys could be as early as the middle of next year?

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Middle of next year.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Great. And what was the growth rate that Vince threw out on the call two weeks ago now?

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

I think he was looking at kind of double-digit growth for the comms business for the next couple of years.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Yeah, I'll take it. Maybe just take a step back and talk about your long-term margin targets. And they've been nicely moving steadily upwards. So what's been the big driver there and what keeps them going?

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Yeah. So I think the way to think about the margins is in relation to the segments of the business. Our industrial business has margins that are above kind of the company average. Comms is around the company average and then auto and consumer below the company average. So as those businesses grow at different rates, you see the mix impact flow through on the margins. We talk about an investment model that we encourage analysts to use that has the gross profit for the company at 70% north. We've been above that for the last couple of quarters. Some of that, as I mentioned, is the result of mix of the growths of the relative businesses. We feel good about kind of 70% north which are industry-leading certainly for our space. The opportunity, I think, for us in terms of real margin expansion is probably more at the operating margin level. As we continue to grow the top line, kind of hold that 70-plus number, not look for meaningful expansion in the OpEx spend; you'll see the operating margins continue to climb. And that's where I'm focused on is driving that OM leverage.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

We have a few minutes left, so I'll keep going. But I want to open it up to the audience if anybody has any Q&A out there. Going once, going twice. So just to follow up on that margin question, maybe talk about mix going forward and the relative growth rates in the end markets and how that impacts margin.

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Yes. So as we look out to 2019, we're likely to see a little bit more headwind in consumer. We're likely to see strength in comms. And industrial, hard to say at this point. But as we mentioned, we're still looking for industrial to be growing next year. My sense is margins are going to still be north of that 70% target but probably contract just a hair from where they are today to kind of be in line with what you saw in or be guided for fourth quarter.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Yeah. By the way, I'd like to point out this is the first time ADI has been here in four years where we haven't had a question on consumer. So it's slowly fading into the background. One thing I did want to get to is M&A. Hittite worked out well. Linear seems like it's working out well and it seems like you've got it pointed in the right direction. All the heavy lifting is done. And I'm sure Ali "The Hammer" Husain is going to keep things in line over there.

You're paying down the debt. So potentially could you come back and start taking a look at things in a couple of years? How do you feel so far on the M&A strategy and...

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Yeah.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

...thoughts going forward?

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Okay. So there's a two-part answer to that. The first is kind of my role. My role in the finance chair is to make sure that I have gunpowder available for the CEO when he calls -

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

To buy something, not to shoot them.

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

When he calls for it. So that's reflected kind of in our capital structure and how we think about ensuring that we have capacity and are ready to go for the right opportunity. Then speaking a bit more for Vince on how he thinks about the franchise, it is really – is it something that brings significant innovation or expands the engineering capabilities such that it continues to widen our competitive moat. And we obviously won't talk specific targets or technologies. But I think folks have seen this company has gone from a very long history of being solely focused on organic to over the last four years doing two transformative acquisitions of very high quality assets and has shown that it can not only conclude those transactions but also integrate them and deliver against the promises that were made at the time.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Yeah. What would you say has been the most unexpected positive aspects from the Linear acquisition? What's really surprised you in a positive way?

Prashanth Mahendra-Rajah

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

I am surprised by how much opportunity there is in power. I am surprised that Linear was an incredibly well-run and well-respected organization. And in the framework they modeled, they did extremely well. As we've changed that frame of reference about how the company should be run, the opportunities that we are seeing, they're really overwhelming, Chris.

Christopher Brett Danely

*Analyst, Citigroup Global Markets, Inc.*

Q

Has the cross-selling been kind of going as expected, a little easier, a little harder, maybe talk about a few instances -

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**Prashanth Mahendra-Rajah**

*Chief Financial Officer & Senior Vice President-Finance, Analog Devices, Inc.*

A

Yes. So the cross-selling has been – the theory behind it is one plus one needs to be greater than two. The idea that we're really not just combining two franchises. But there is something that the two of them bring that is able to provide more to the customer than sourcing alone. And I feel very good that we're demonstrating that. This is more – a personal frustration is the nature of our business is it takes a long time to go from design to win to production to peak production. It's the benefit of the business as well because it's slower on the ramp and it's extremely, extremely slow on the decay. But the slower on the ramp certainly is frustrating when you have investors really asking, okay, when do we see the proof points behind what you've done. And internally, we feel very confident that those proof points are materializing. But we need to help everyone be patient for that to roll through the income statement.

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**Christopher Brett Danely**

*Analyst, Citigroup Global Markets, Inc.*

Great. I think that's all we have time for. Thanks, guys. Thanks, everyone.

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