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PRESENTATION

Operator

Good morning, and welcome to the Analog Devices First Quarter Fiscal Year 2024 Earnings Conference Call, which is being audio webcast via telephone and over the web. I'd like to now introduce your host for today's call, Mr. Michael Lucarelli, Vice President of Investor Relations and FP&A. Sir, the floor is yours.

Michael C. Lucarelli - *Analog Devices, Inc. - VP, IR and FP&A*

Thank you, Josh, and good morning, everybody. Thanks for joining our first quarter fiscal 2024 conference call. With me on the call today are ADI's CEO and Chair, Vincent Roche; and ADI's CFO, Rich Puccio. For anyone who missed the release, you can find it and relating financial schedules at investor.analog.com.

On to disclosures. The information we're about to discuss includes forward-looking statements, which are subject to certain risks and uncertainties as further described in our earnings release, our periodic reports and other materials filed with the SEC. Actual results could differ materially from the forward-looking information as these statements reflect our expectations only as the date of this call. We undertake no obligation to update these statements, except as required by law. Revenues to gross margin, operating and nonoperating expenses, operating margin, tax rate, EPS and free cash flow in our comments today will be on a non-GAAP basis, which excludes special items.

When comparing our results to historical performance, special items are also excluded from prior periods. Reconciliations of these non-GAAP measures to the most directly comparable GAAP measures and additional information about our non-GAAP measures are included in today's earnings release. As a reminder, the first quarter of 2024 was a 14-week quarter.

And with that, I'll turn it over to ADI's CEO and Chair, Vincent Roche. Vince?

Vincent T. Roche - *Analog Devices, Inc. - CEO & Chair of the Board of Directors*

Thank you very much, Mike, and good morning to you all. But before I begin, I'd like to welcome ADI's new CFO, Richard Puccio, to the call, which is only a few weeks in, but we're very excited to have him on board. He brings tremendous financial experience and capability from complex technology sectors, which I think will be very valuable as we continue to extend our leadership in the intelligent edge era. I'd also like to recognize Jim Mollica for serving as interim CFO and thank Jim for his continued partnership and contributions to our success.

Now on to the results for the first quarter. ADI delivered revenue of more than $2.5 billion, operating margins of 42% and earnings per share of $1.73, all above the midpoint of our outlook. As we previously discussed, the inventory rationalization at our customers that began during the middle of 2023 is expected to continue through our second quarter. Encouragingly, first quarter bookings improved sequentially, growing our confidence that inventory-related headwinds will largely subside this quarter. That said, the macro situation remains challenging, and the shape and timing of a second half recovery will be governed by underlying demand.

Importantly, the strength of our balance sheet, operational agility and prudent capital management are serving us well during this downturn. We've invested heavily in R&D, customer engagement activity and manufacturing resiliency fueling our future growth even as we maintain the industry-leading profitability that supports our practice of robust capital returns. To that end, I'm pleased to highlight that we announced a 7% dividend increase yesterday, making 2024 the 20th consecutive year of higher dividends for shareholders.

Now digging a little deeper into our investment philosophy, we continue to focus on anticipating our customers' future needs in what's becoming a software-defined, AI-driven world, leveraging pervasive sensing, edge computing and ubiquitous connectivity. The technological complexity facing our customers is compounded by their need to deliver solutions that are both secure and extremely power efficient. So let me share a little more now about how we are strategically allocating our capital to deliver more solutions value to our customers and further support their confidence in long-term supply assurance.

Since our acquisition of Maxim, we've increased our engineering population by around 10%, complementing our world-class Analog talent with increasing levels of digital, software, AI and systems expertise. This breadth of engineering gives ADI the capabilities to tackle more of our customers' challenges and grow our SAM across markets. In addition, as our engineers increasingly work shoulder to shoulder with our customers to co-architect their solutions, we further deepen our understanding of their technological and market complexities. This strengthens our ability to deliver increasingly stronger innovation from components to physical edge systems.

And I'd like to share now a few examples of what I mean. For example, in the industrial sector, digital transformation is driving investment in edge-based connectivity and control platforms that enable secure, power-efficient monitoring and control of automation systems. Last month, Honeywell announced that we'll use ADI's deterministic ethernet and software configurable I/O solutions across their factory automation and building management offerings. Our portfolio enables customers to securely deliver end-to-end signal integrity between the edge and the cloud in a power-efficient and highly flexible platform configuration. This system approach enables us to capture 3x more value, and we expect additional design wins due to high customer interest globally.

In the automotive sector, we've aligned our business to the secular trends of electrification, advanced safety systems and immersive digital in-cabin experience. For example, our Gigabit Multimedia Serial Link, or GMSL solution, continues to gain broader adoption as customers seek to extend high-performance data and video capabilities across their fleets. We recently increased our share at a top 3 global auto manufacturer, extending our position across all their brands and quintupling our GMSL opportunity at that customer.

In data centers, AI and machine learning computing systems require orders of magnitude more processing, and thus energy compared to traditional workloads. Our portfolio of high-performance power and protection solutions, specifically designed for vertical power delivery is helping customers rearchitect their data center systems to improve power delivery and system performance. Last quarter, we secured a significant design win from a large hyperscale customer for our multiphase vertical power solution that reduces power losses by 35% when compared to conventional ones.

In Healthcare, this market continues to digitalize to enable more predictive and preventative treatment regimens. ADI has been on the forefront of this transition, and I'm pleased to let you know that we've recently received FDA clearance for a noninvasive remote monitoring platform, that enables home-based management of chronic diseases such as congestive heart failure. This solution leverages our deep domain expertise, leading-edge capabilities across signal processing and sensor modalities, and unique algorithms that enable medical providers to act early, precisely and effectively. As a platform, this also allows us in the future to use our data-driven AI algorithms to make this even more personalized. This advance unlocks a new growth vector for ADI, adding more than $5 billion of new SAM.

Switching now to the evolution of our supply chain, I'd like to share some of our progress in manufacturing resilience, which is a growing priority for our customers. Over the last 2 years, we've invested record levels of CapEx to expand our capacity and to enhance resiliency. Now with line of sight to achieving our goal of doubling front and back-end internal capacity in 2025 will begin to significantly reduce our capital spend.

Notably, approximately 10% of our investments have been focused on implementing more efficient systems that will deliver sustainability benefits, including greatly reducing input resources and emissions, which, over time, will also lower our operating costs. These investments enable a more flexible hybrid manufacturing model and will increase our swing capacity to around 70% of revenue in the coming years. This unique ability helps to capture the upside in strong demand backdrops and better protect our gross margins during more challenging times.

Complementing these organic investments, we also extended our foundry partnership with TSMC to secure additional 300-millimeter fine-pitch technology capacity at their Japan subsidiary. Our investments, combined with the support of our foundry partners will enable us to manufacture our products in multiple geographic locations, enhancing our resiliency and giving our customers greater optionality and assurance over their supply chains. So in closing, as always, we're keeping one eye on the present and one eye on the future. I have confidence in the steps that we're taking to preserve our capital and navigate the near-term challenges while ensuring that we make the necessary investments to increase our competitiveness and accelerate our business in the future.

And so with that, I'd like to pass the microphone over to Rich.

Richard C. Puccio - *Analog Devices, Inc. - Executive VP & CFO*

Thank you, Vince. And let me add my welcome to our first quarter earnings call. I'm excited to have joined ADI and look forward to helping the company navigate the near term while ensuring we are well positioned to capitalize on the tremendous opportunities ahead of us. Despite continued challenging business conditions, we achieved first quarter revenue, which was slightly above the midpoint of our outlook or down 8% sequentially and 23% year-over-year. Industrial represented 48% of revenue in the quarter, down 12% sequentially and 31% year-over-year.

As expected, we experienced broad-based weakness as customers continue to work down their inventory levels. Automotive, which represented 29% of revenue, was up 2% sequentially and 9% versus the year ago period, representing 14 consecutive quarters of growth. Notably our leading connectivity and functionally safe power solutions collectively increased double digits year-over-year.

Communications, which represented 12% of revenue, declined 10% sequentially and 37% year-over-year. On a sequential basis, wireline fared relatively well driven by AI-related demand, while wireless decreased as global investments in 5G remain depressed. And lastly, consumer represented 11% of revenue, down 7% sequentially and 22% year-over-year driven by continued sluggish end demand across applications. Now on to the rest of the P&L. First quarter gross margin was 69%, down sequentially and year-over-year driven by unfavorable mix lower revenue and lower utilization.

OpEx in the quarter was $679 million, down 2% sequentially despite the extra week, driven by lower variable comp, disciplined discretionary spend and structural cost improvement. As a result, operating margin of 42% finished near the high end of our outlook. Nonoperating expenses finished at $75 million, and the tax rate for the quarter was 11.8%. All told, EPS was $1.73, slightly above the guided midpoint.

Now on to the balance sheet. Cash and equivalents increased more than $340 million sequentially and ended the quarter at $1.3 billion, our net leverage ratio remained below 1. Inventory decreased nearly $90 million sequentially, driven primarily by finished goods, while days increased to 201 due to lower revenue. Channel inventory dollars declined again in 1Q with weeks of inventory finishing slightly above our target range of 7 to 8 weeks.

Moving on to cash flow items. Over the trailing 12 months, operating cash flow and CapEx were $4.6 billion and $1.3 billion, respectively. We continue to expect fiscal 2024 CapEx to be approximately $700 million. As a reminder, these are gross CapEx figures, not including any of the anticipated benefits from both the U.S. and European Chips Act. Over the last 12 months, we generated $3.2 billion of free cash flow or 28% of revenue. During the same time period, we have returned more than $4.2 billion through dividends and share repurchases.

And since our Maxim acquisition, we have returned nearly $12 billion or more than 130% of free cash flow to shareholders, reducing share count by 8% while also increasing our dividend per share by 33%, including our most recently announced 7% increase. As a reminder, we target 100% free cash flow return over the long term. We aim to use 40% to 60% to grow our dividend annually with the remaining free cash flow used for share count reduction.

Now moving on to guidance. Second quarter revenue is expected to be $2.1 billion, plus or minus $100 million, once again, we expect sell-through to be higher than selling. At the midpoint, we expect all end markets to decline sequentially with the largest decline in industrial as we continue to meaningfully reduce channel inventory. Operating margin is expected to be 37%, plus or minus 100 basis points. This includes the impact of unfavorable mix and lower utilization as we further reduce balance sheet inventory. Our tax rate is expected to be 11% to 13%. And based on these inputs, EPS is expected to be $1.26 plus or minus $0.10.

In closing, the actions we've taken to protect profitability in the near term as well as the natural shock absorbers embedded in ADI have enabled us to maintain strong profitability even as our quarterly revenue has fallen significantly from its peak. Importantly, with the strength of our financial profile and the growing importance of our technology, we will continue to invest confidently in our future, regardless of where we are in the cycle.

I will now give it back to Mike for Q&A.

QUESTIONS AND ANSWERS

Michael C. Lucarelli - *Analog Devices, Inc. - VP, IR and FP&A*

Thanks, Rich, and welcome to the call.

(Operator Instructions)

With that, we have our first question, please.

Operator

(Operator Instructions)

Our first question comes from Joseph Moore with Morgan Stanley.

Joseph Lawrence Moore - *Morgan Stanley, Research Division - Executive Director*

To the extent, you guys are guiding down now mid-30% year-on-year. If I go back to historic drawdowns, you haven't seen revenue fall that far other than 2001, 2009, where we had kind of significant demand disruption. So it kind of looks like the worst inventory correction maybe we've ever seen. Can you just talk to that? Does that reflect how much inventory excess there might have been? Or just any kind of sense check as we approach the bottom as to why the downturn looks kind of severe?

Vincent T. Roche - *Analog Devices, Inc. - CEO & Chair of the Board of Directors*

Thanks, Joe. I think first and foremost, the -- if you like, the events that caused the supply chain fracture was unique. And every single segment was impacted every single customer, every single business. So this is truly the broadest base demand inflection I've ever seen in my 30-something years with ADI. And I've been through all those different perturbations. So I think that's the uniqueness of the event itself, I think is what caused the level of impact. And we see everything compounded. We saw the supply chain fracture. Then we saw the shortage, and then we got the behavior that we typically see in a shortage situation. You get double ordering, you get holding. And we're seeing that everywhere.

The area that we've probably seen, I would say, the biggest correction is in the industrial market. And I think our sense is that it began in the second -- kind of the second half of the past year, and that will take 4 to 5 quarters to correct, I believe, from the beginning of the decline to when we start to see growth again. So I think that's pretty much it. But now we're in a situation where the lead times are very uniform. And actually, we got ahead of the supply chain issues, I think, faster than most. We've got our lead times back into better shape than most quite quickly. And so we saw the downturn, I think, more quickly than others.

So all that said, Joe, I think the underlying demand for our products and technologies in the years ahead. We remain very, very bullish about that. And I expect, as we've indicated that we'll see a return back to growth in the second half of our fiscal year.

Operator

Our next question comes from Stacy Rasgon with Bernstein Research.

Stacy Aaron Rasgon - *Sanford C. Bernstein & Co., LLC., Research Division - Senior Analyst*

Rich, I was wondering if you could give us a little more color on the segment guidance next quarter. I know you said everything down in industrial worse. But I mean like industrial has got to be down probably more than 20% sequentially, and that would probably still assume everything else is down double digit sequentially. Is that what you have in mind? And any further color you could give us would be great.

Michael C. Lucarelli - *Analog Devices, Inc. - VP, IR and FP&A*

I'll grab that one. It's Mike. So you're right to think industrial is the weakest. I would say, 20% sequentially, sure, you can put that number in your model if you want to, 20% plus or minus sequentially. I would say comms is also probably worse in the midpoint of your guidance, so down more than the 16% we guided to. While auto and consumer probably do a bit better, but are both down pretty significantly sequentially as well. And really, the big driver on the industrial piece, as we laid out is the channel reduction in the -- for the inventory in the channel, which is impacting industrial more so in other markets. I hope that helps Stacy.

Operator

Our next question comes from Chris Danely with Citi.

Christopher Brett Danely - *Citigroup Inc., Research Division - MD & Analyst*

Just to follow up on that question. How much of this downturn do you think is just pure inventory correction versus demand? And then any comments you could have on just demand trends as far as what you're hearing from the distribution channel and your customers?

Michael C. Lucarelli - *Analog Devices, Inc. - VP, IR and FP&A*

I'll start and then I think Vince will add some clarity also on it, but this really is a supply-driven demand correction, what you're seeing here. And Vince outlined that in the answer to the first question where the supply chain fracture lead times extended for an extended period of time. Those have normalized. We're still seeing what are happening as our customers is, they build a lot of inventory over that time. Why our lead times are extremely long. Now our lead time is back to normal, so they're seeing them reduce their balance sheet inventory to match our short lead times, so the cycle times match up. So really also a majority supply chain some demand. There's some areas of pockets of weakness in demand. But really overall, I'll call it more of a supply than demand correction in our business. And we talked about in the script and as well the press release, that supplied normalizing here in our second quarter.

Vincent T. Roche - *Analog Devices, Inc. - CEO & Chair of the Board of Directors*

Yes. I think, Chris, if we look at the 2 halves of FY '24, I believe the first half is all about inventory indigestion and digestion. And as Mike said, we largely get through that part of the headwind by the end of our second quarter. And then in the second half, all the indications our bookings are getting stronger, cancellations are abating. Our conversations with customers suggest that we'll begin to return to a growth pattern in the second half. The big question is the macroeconomic dial where that's positioned. And I think at the margins, if I look at where we are this quarter versus last quarter, at least from a macro standpoint, maybe with the exception of China, we're more bullish than we were.

Operator

Our next question comes from Vivek Arya with Bank of America Securities.

Vivek Arya - *BofA Securities, Research Division - MD in Equity Research & Senior Semiconductor Analyst*

Vince, on the last earnings call, you mentioned bookings were stabilizing. I think this quarter, you're saying bookings are improving. And I'm curious which end markets are showing the best recovery in bookings? And then importantly, how should this inform us about what ADI will see as we get into the July quarter, should we be assuming some kind of seasonal recovery, should we assume things flatten out first? And if I could attach kind of part B of that, which is what happens to gross margins as you start to see that flattening out and potential recovery? So just the shape of what recovery looks like in sales and margins if bookings flattened and now they seem to be improving?

Vincent T. Roche - *Analog Devices, Inc. - CEO & Chair of the Board of Directors*

Yes. Well, I think, look, as soon as demand in flex, and we get back into a more normalized growth pattern, Vivek, everything will improve. Our utilizations will improve. We have undershipped the channel, we've undershipped our customers. So we've been working very, very hard in the company to make sure that when demand and flex that we will get a -- we've got the supply in place. We've got lots of finished goods and diced up inventory. So we're in a great position to address the recovery.

On the first part of your question about where are we seeing the bookings improvement, pretty much everywhere, pretty much everywhere, across all the segments. And if you look at industrial, I'd say the 2 healthiest parts of industrial right now is, as we message to the external world, aerospace and defense and healthcare, they've got fundamentally quite different drivers to, say, the factory automation or instrumentation business. But those 2 sectors are holding up better than the rest. But even in a more traditional industrial sector like instrumentation, all of these new high-performance computing systems need you test equipment, so that benefits ADI.

So I think, in general, it's true to say, maybe with the exception of our wireless business, most sectors are seeing a return to a more normalized bookings pattern.

Richard C. Puccio - *Analog Devices, Inc. - Executive VP & CFO*

And Vivek, I'll give you a little more color on the gross margin outlook. So it's in the last call, we talked about gross margin will be 68% to 69%. We came in at the high end, a good result given the large drop in industrial that we've been talking about and with an inventory takedown of almost $90 million quarter-over-quarter. The 2Q outlook implies 67% plus or minus, a bit lower than what we thought would be given the weaker revenue, especially in industrial and the fact that we're taking down factory starts further in 2Q to reduce inventory by another $50 million to $100 million.

And if I think a little bit further out to the half 2 outlook, tough to predict right now is the revenue and the shape of the revenue recovery will be the governor on gross margin trajectory. But our best sense is gross margin trends higher in the second half, as we don't see utilization going much lower as inventory continues to decline meaningfully at these start levels and we'll continue to leverage our swing capacity.

Michael C. Lucarelli - *Analog Devices, Inc. - VP, IR and FP&A*

And Vivek, as you asked a 3-part question, I'll chime in as well for third quarter outlook. I know you gave me the outlook question. So it's hard to say, right? Our lead times are 13 weeks are lower. So we don't really have visibility into the third quarter today. But if you look back over history over the past decade, our B2B markets are about flattish sequentially in 3Q from 2Q, sometimes they're up a little bit, sometimes they're down a little bit depending where you are in the cycle, while consumers start seeing some holiday builds kind of up mid- to high single digit sequentially. So that's kind of historical context. We're not guiding in the third quarter, but that's how we should frame it.

And then to add on to what Vince said about bookings. Bookings actually increased last quarter, and the quarter before that. So 4Q and 1Q bookings both improved. And what's interesting now is you look at our bookings, they're approaching parity, which is a good sign that we just see a pickup in the back half of the year.

Operator

Our next question comes from Harlan Sur with JPMorgan.

Harlan L. Sur - *JPMorgan Chase & Co, Research Division - Executive Director and Head of U.S. Semiconductor & Semiconductor Capital Equipment*

So if I look at fiscal '23, China was about 18% of your total revenues. It was the worst performing geography down about 13% for the full year. Because Lunar New Year was so late this year, it feels like this did add a little bit of uncertainty at the beginning of this year, but obviously, now we're post-Lunar New Year. What are the demand signs out of this region? Are orders also growing sequentially in the China regions? Are cancellations also showing signs of stabilization patterns as well? Maybe even signs of a potential pickup in the China region? Just want to get your views.

Michael C. Lucarelli - *Analog Devices, Inc. - VP, IR and FP&A*

So if you take a step back from a geo perspective, whole regions are weak, North America, Europe, China. China has been weakest the longest, I would say. The rest of Asia is doing better than the big 3, but still weak as well. And like I said, China is the weakest source of demand. around Chinese New Year, honestly, if there's something unique about it, we called out. But I think what Vince said in the last question basically was bookings are improving globally as well as in China before and after Chinese New year. So really no impact from Chinese New Year and kind of the commentary we've made.

Operator

Our next question comes from Toshiya Hari with Goldman Sachs.

Toshiya Hari - *Goldman Sachs Group, Inc., Research Division - MD*

Vince, I'm curious how you would characterize sell-through today versus sell-in. I think at a conference a couple of months ago, you had mentioned that sell-in was tracking 15% to 20% below sell-through. Is that still the right ballpark number? And is that what you're seeing in the current quarter? And I guess, if so, if the end demand environment doesn't deteriorate over the next 6, 9 months? Could there be a quarter later in the year where your revenue run rate is tracking above $2.5 billion, $2.6 billion?

Michael C. Lucarelli - *Analog Devices, Inc. - VP, IR and FP&A*

I'll grab the first part of that on the sell-in and sell-through part of it, Toshi. So selling and sell-through really relates to the channel. We reduced our channel inventory dollars the past 2 quarters, I would call it around a $50 million reduction, plus or minus per quarter over the last 2 quarters. Looking at embedded in our guidance is a much bigger reduction of channel inventory. If you want to put a number around $100 million or so in our outlook, that's probably what we're seeing on the channel side. So we're reducing a lot in the channel. Now as you look at the back half of the year, from a channel perspective, we think the sell-in and sell-through should be better matched given the actions we've taken over the last 3 quarters. And I'll pass it to Vince to talk a little about the customer inventory situation on the end customer side.

Vincent T. Roche - *Analog Devices, Inc. - CEO & Chair of the Board of Directors*

Yes. On the customer side of things, we've been monitoring very, very carefully across the various segments. Our customer shipment rates, their inventories and their ADI goods on hand. And we're clearly under shipping our customers current demands. So we feel that we've got a situation now in terms of our -- we're in a good inventory position on hand. Our customers are beginning, as Mike indicated, to replenish their order books, ADI's goods. And that gives us the confidence as the book-to-bill approaches unity that we're seeing the worst of the inventory correction.

And in the second half, we will get back to a more normalized growth pattern. So as Mike said, there's a very good balance between the direct channel, the distribution channel in terms of the inventory situation, but we're ready for the upsurge.

Operator

Our next question comes from William Stein with Truist Securities.

William Stein - *Truist Securities, Inc., Research Division - MD*

I want to welcome, Rich, but direct a couple of questions to Vince, please. Vince, the more vertical capabilities that you talked about, it sort of suggests that you're needing to either partner more closely with a smaller number of customers or maybe you wind up pushing somewhat into their capabilities and are potentially competing with some of them. And I wonder how you contemplate managing that dynamic?

Vincent T. Roche - *Analog Devices, Inc. - CEO & Chair of the Board of Directors*

Will, thanks very much. You're -- unfortunately, the line shopped. I think I got your question about verticalization, competing with our customers potentially. Hopefully, you can hear me, okay, that it's not a 2-way line problem here. Will, look, the -- we've been on a journey over many, many years now to continue to build out our core component franchise, but also add more value to our solutions. Our business has become more solutions-oriented particularly over the last decade in every single segment that we play. And that kind of domain application-driven engineering that ADI has been distinguishing it so at the edge over the last decade, that will continue, and we're continuing to build that.

I talked on the -- in the prepared remarks about this point of care, acute health care solution that we've just brought to market where we've got an FDA approval. I think what's happening, Will, in the world is that there are certain places like that where we have a white space to attack. We're building a complete solution that has both hardware and software makes a lot of sense. But the truth is, even in the traditional markets and with the larger customers that we deal with, more and more footprint capture, if you like, has been taking place. Why? Because we tame our customers' complexity. And I've talked before about the asymmetry and capabilities in the Analog space between the capabilities ADI has got and our customers have got. They expect us actually to add more solution value and build more complete solutions and clearly define where the line is between where their core value is versus where ADI's core value is.

So I think we're not competing with our customers, but we have very vibrant discussions about where we draw the line of the labor divide, so to speak.

William Stein - *Truist Securities, Inc., Research Division - MD*

That helps. If I can ask a follow-up. You talked a bit about AI. It's sort of a familiar topic to us lately. Maybe too much so. There's a narrative here where there are some creative capabilities, in fact, I would say, engineering-focused capabilities that maybe made more efficient or productive with Generative AI. In a world where the story about Analog design engineer capability being so limited and not driving a significant advantage for ADI. I wonder if that story changes at all because of this capability. Have you started using this for circuit design? Or do you anticipate that it could be used by others, either competitors or customers?

Vincent T. Roche - *Analog Devices, Inc. - CEO & Chair of the Board of Directors*

Yes, it's a good question. Well, look, everybody is trying to figure out the meaning of the AI in their businesses. We're using AI today in our tool chains. We're using machine learning and AI in our products, around our products. We're starting to use it in our business. And I think -- I believe that anything that can be -- anything that is routine -- and that can be automated, that's the way of technology. Technology automation will take over the things that are more routine. We play very much at the high end of the performance spectrum.

So unless there's generative intelligence that can outperform our imaginations, which I don't see any time in the foreseeable future. We're truly in a realm where the intellectual property value and the learning system that we've got in this company will matter more and more. But, I think we view AI as a tremendous opportunity. As clearly in the product development process from how the products are designed, what we put as ingredients in our products, and we're also, by the way, putting AI into the customer support tool chain. So it is a part. We're embracing it, and we believe that it will be an accelerator and the copilot, if you like, with our engineering population.

Michael C. Lucarelli - *Analog Devices, Inc. - VP, IR and FP&A*

Will, it sounds like from your cell phone line, we can do need some more 5G coverage.

Operator

Our next question comes from Timothy Arcuri with UBS.

Timothy Michael Arcuri - *UBS Investment Bank, Research Division - MD and Head of Semiconductors & Semiconductor Equipment*

Can you talk to any period costs versus underutilization charges that you're taking? And any of those -- how much of a headwind are those now? And how much will those help you as they might reverse themselves coming out of the downturn?

Michael C. Lucarelli - *Analog Devices, Inc. - VP, IR and FP&A*

So I think your question is on how much of the impact on our gross margins underutilization versus mix. I think if you look here, our peak gross margins were about 74%. Our outlook, as Rich pointed out, embeds about 67%. That decline is really mix and underutilization, about equal parts, I'll call it. As you look to the back half of this year, it depends what mix is going to do. I think industrial is bottoming here, so that should help a little bit. From a utilization standpoint, Rich also pointed out, our starts are low enough to reduce inventory meaningfully. We've been doing that. We'll do it again in 2Q. So I don't see it starts going down, they're probably start going up, which should provide a tailwind to gross margins. How fast the gross margins pick up really depends on those 2 factors, how fast the revenue picks up and how much of it relates to the industrial sector.

Timothy Michael Arcuri - *UBS Investment Bank, Research Division - MD and Head of Semiconductors & Semiconductor Equipment*

Okay, Mike. But I guess, are there any inventory charges? That's the question.

Michael C. Lucarelli - *Analog Devices, Inc. - VP, IR and FP&A*

So from inventories, yes, I would say, a good question. You're right. We have a lot of inventory. As you can see on our balance sheet. The -- there's no acceleration of inventory charges in our gross margins. The inventory charge from a reserve standpoint have been elevated for the past few quarters, and they probably stay that way as you go into the back half of this year into next year. But that's not a headwind anymore. It's already kind of built in the run rate.

We will go to our last question, please.

Operator

Our last question comes from C.J. Muse with Cantor Fitzgerald.

Christopher James Muse - *Cantor Fitzgerald & Co., Research Division - Senior MD & Semiconductor Research Analyst*

You talked about auto being down sequentially, but seeing, I guess, the best performance out of all the different segments. Curious if you can kind of walk through what you're seeing from Tier 1 auto correction and whether you think that will be completed exiting April as well?

Michael C. Lucarelli - *Analog Devices, Inc. - VP, IR and FP&A*

Yes. Sure. From the auto standpoint, C.J., I would say, yes, there is definitely an inventory correction going on in auto like all our markets as Vince pointed that out, the supply fracture at everyone is, to a lesser degree, than auto than other markets, but it's not really because of the inventory. It's because of the growth drivers in that business, whether it's BMS, GMSL A2B functional safe power, the growth in those areas are offsetting the overall call it inventory digestion in automotive area. You're right to say that on the Tier 1 side or the OEM side, there's some froth inventory. But we're seeing that being digested. Will it be all complete.

By the second quarter, we'll see, but I do feel good about those growth areas continue to grow this year. And for the full year, will auto grow, I don't know. We'll see. But it really depends on how strong the growth is in the growth areas and how much of the overhang on the inventory side is. But net-net, we do feel good about auto being our best performing end market here in 2Q and for the full year '24.

All right Thank you C.J., and thanks everyone, for joining our call this morning. A copy of the transcript will be available on the website. Thanks for joining us, and have a great rest of the day.

Operator

Thank you. This concludes today's Analog Devices conference call. You may now disconnect.

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