Antofagasta: Family-Owned Copper Miner With Strong Balance Sheet

Santiago Domingo Cebrián of Magallanes Value Investors presented his investment thesis on Antofagasta (UK: ANTO) at European Investing Summit 2023.

The following transcript has been edited for space and clarity.

Santiago Domingo Cebrian: It's always a pleasure to be here with you and contribute to this summit.

Magallanes Value Investors is an equity long-only asset management firm founded in 2014 and based in Madrid. We are totally independent, which allows us to act the way we think. That's crucial for investment. We are co-invested in our funds, and all the employees have a huge chunk of their savings here along with the founders. We have a family business culture and a highly optimized team. There are around 15 people within Magallanes, with five or so in the investment team. We try to maintain this family culture in the firm as well as in the companies we look for. Antofagasta is an example.

We have assets under management of around 2.5 billion euros, and almost 90% is in the European equity strategy. Iberian equities are around 10%, and microcaps are less than 5%. Microcaps is a closed fund with assets of about 100 million. Through it, we invest in tiny companies in Europe.

We do all of this following a value investing philosophy because we think it is the best investment style not only for getting good returns but also outperforming over the long run. At the end of the day, our aim is to preserve and increase the capital in the long term. I always repeat this – first to preserve, second to increase – because it's also important to survive in any kind of environment in the darkest days. For us, it is quite important to be invested in companies that are not only cheap but also have a strong balance sheet, a good management team, a family or reference shareholder, if possible, and businesses we can understand if they will survive over time.

The company we bring to you today is Antofagasta. A few years ago, we presented Atalaya Mining, another copper miner. We could say that Atalaya is the small child we have in our microcap portfolio, and Antofagasta is the big child we have in our European fund.

Antofagasta is a Chilean company that producers more than 650,000 tons of copper per year, which represents a market share of around 2.5%. Supply and demand are almost balanced in the copper market right now. This company is a low-mid cost producer. It has some of the best mines in the world, notably Los Pelambres (one of its four mines). Antofagasta has a very strong balance sheet with almost net cash. That's extremely important to us because it give us a lot of comfort during the worst of times – at the end of the day, we should be aware that investing in mining is investing in cyclicality, so we must have a robust balance sheet to survive in difficult times.

All of this is backed by the Luksic family, one of the most – if not the most – prominent business families in Chile. They own almost 65% of the company. They also have investments

in Hapag-Lloyd and other businesses. Their net worth is calculated at more than $20 billion. They are a respected and well-known family.

With any company, especially with a company in the mining space, is it extremely important to understand the underlying. In this case, the underlying is clear – it's copper. When we talk about copper, we have to understand the dynamic. Talking about mining, there are two keys: supply and demand. With these two ingredients, we have the outcome, which is the price – in this case, copper price. This is a path we will follow to understand why we think the copper price should be higher over the long term than it is at present.

The first thing is easy and understandable. For almost anything, you need copper. Sometimes, people or governments want the application but don't want the mine. This does not match. You need both things – you need the technology behind the applications, but also you need the copper extracted from the mines.

The difference between a world with and without copper is darkness. If we did not have copper, we probably wouldn't have most of the things around us. The new king of the commodity space is probably copper because it has excellent properties and applications. First of all, it's the best non-precious metal conductor of electricity. In fact, around 75% of copper is used for electrical purposes. Only silver, which is much more expensive, is better suited for electrical purposes. Also, copper is a better electrical conductor than aluminum, which would be the cheaper option.

Secondly, copper a very malleable and ductile metal. You can do so many different things with it to adapt to your needs. It is also a very resilient material – it can last more than a hundred years. In addition, coper is an easily recyclable metal. Due to its resilience, you can preserve most of the properties even though you recycle it several times.

Thirdly, copper has antimicrobial properties, allowing us to eliminate some diseases or the spread of some diseases. This was particularly important during the COVID-19 pandemic, but it's also important now. You can use copper in multiple products, such as pipes, surfaces, paints, and towels.

Now that we understand copper is an extremely useful material widely utilized in modern society, let's take a look at those two key ingredients: demand and supply. Currently, copper consumption is around 25 million tons, with more than half of it attributable to China. If we add the rest of Asia, we could say that around 75% of copper demand comes from Asia. It is where most of the growth is right now. This is important because at the end of the day, it's an opportunity and a risk. If we see a Chinese slowdown, we can say, "We are going to consume less copper." However, when we talk about a Chinese slowdown, we talk about growth going from 5% or 6% – depending on the year – to 4%. This is still growth.

Under normal circumstances, we should expect copper demand to grow around 2% to 3% per year. That's without taking into account the mega trends of economic development, renewable energy, and electric vehicles. If we factor in these trends, the growth rate could go to 4% or 5% per year. This would mean that copper demand could increase by around 500,000 to 750,000 tons per year or more than a million tons per year if we take into account the mega trends. This is more than one Antofagasta per year. Believe me, this is almost impossible based on the supply visibility we have right now.

Opening a copper mine is anything but easy, and not only in terms of getting the permits, especially in some developed countries. It's also very complicated from a technical point of

view as well as a time point of view because it usually takes around 10 years from the discovery of a mine to the start of operations, with many delays over that time.

We can more or less affirm that copper demand will grow at around 3% to 4% per year in the long term because we have all these mega trends. However, we don't want to just look at them – we want to put numbers to them. Let's start with the green transition: renewables and electric vehicles.

If we put numbers to this green transition, what we see first is that an EV needs between 2 to 4 times as much copper as an internal combustion engine. Next year, probably around 90 million cars will be sold worldwide. We assume that in 10, 15, or 20 years – I don't mind the time because it's going to come – half of those cars will be electric. We will probably need another 2 million or so tons of copper per year, which is huge. This is around 7% to 8% of the current production and demand. It suggests a massive increase in the need for copper.

It is the same for renewable energy. When we talk about solar, we have to be aware that these technologies are between 30 to 40 times more copper-intensive than generating electrical energy by burning coal or other sources. The same goes for storage. To store electricity, you need copper. In Europe, we have a trend for renovation in order to be more efficient, which also means we need more copper.

Countries with the lowest GDP per capita typically have a lower copper installed base. For instance, poor countries have around 100 pounds of copper per capita installed whereas rich countries have around 500 pounds. If the countries following their developing cycle – we could talk about India, African countries like Nigeria, or Asian countries apart from China – they should consume more copper because their populations, infrastructure, and development require more copper.

Normally, copper demand drives the sentiment. It drives the short-term copper price. When some broker reduces their outlook for copper price, they usually say, "Less copper will be needed this year because China is slowing down or because India is not doing well." They don't talk about supply. They don't say it's because fewer and fewer mines are being opened. The short term is always about demand, but the long term is driven by supply, and this is something common for most metals except for gold, which is special. It is driven by supply because, at the end of the day, what we see in the case of copper and other metals is permanent underinvestment over the recent decades.

If you want to analyze the copper price over the long term and look at the real fundamentals, please look at the supply. In this case, the demand is more or less sure. It will grow two, but at the end of the day, this growth is warranted because it depends on the economic progress of the world.

Looking at the copper supply, we see it's very similar to the demand – around 25 million tons between mines and scrap copper. Around 22 million tons come from production in mines and 3 million tons from scrap copper. Production is strongly concentrated in Chile and Peru, which collectively account for just under 40% of the supply. Here, you have some of the biggest companies in the copper space – Codelco, Freeport-McMoRan, Glencore, BHP, and Antofagasta.

Production being concentrated in one or two countries is a risk because we have seen how some political developments have barred the increase in production in some of these countries. You also have Congo, which is growing a lot and has great mines with very good

ore grades, but you also have political instability. That's okay in the short term, but over the long term, it can cause massive damages as Congo gets a bigger share of the copper production pie.

Aside from the regions where copper is produced, another thing to consider is disruptions. You always have some kind of disruption in the production of copper. It is not small – it is more or less 4%. This is around 1 million tons per year due to strikes, the weather, delays, political issues, or closures. It's another thing we should take into account because disruptions are the norm rather than the exception.

Looking at the supply, there are other challenges apart from the disruptions. These are more important over the long term. For one thing, we have declining ore grades. The best-in-class mines have already been discovered, and most of them have already been extracted with the exception of mines in some African countries. The new discoveries are in remote places that usually lack infrastructure. They are in Los Andes. They are in the middle of nowhere. They are in some places in Africa where you don't even have the energy grid you need. Some of them are underground and are much costlier to exploit. You also have some water supply issues – even more so in the current climate change environment. This is affecting Antofagasta. The water supply in some Chilean regions is scarce. The company is investing in desalination plants that are key for the future.

Also, from a financing point of view, only a few banks want to finance these kinds of assets. Most banks want to finance technological developments, but all these technological developments needs copper. Almost nobody wants to finance copper investments. It's weird, but at the end of the day, this is how the world works.

You also have social pressure. Nobody wants to have a mine close to their house because it generates some pollution and social issues. However, what you should look at is how rich the places usually are where you have well-run mines. For instance, we have the Rio Tinto mine in the south of Spain. This town – Rio Tinto – and the towns around it are probably some of the richest of the region because well-developed mining generates a lot of wealth for the people who live there – they get good wages, security, and welfare. Usually, all these things are good, but at first sight, people usually say, "I don't want this close to me."

All these challenges and what we have seen over the last few years have led to a huge underinvestment in the copper mining space. The global copper growth capex has been declining year after year. This means that fewer companies are interested in investing. Why? Because the price is high enough or because they don't find the right places to do it, they don't find it comfortable with some governments, they don't like some regulations or taxes, or they have problems getting financing.

Finding a deposit is not the only thing that's complicated. Being able to develop it is not an easy task, either. In addition, we have been living in a very low inventory situation in the past few years. It's true there has been a slight increase recently – probably due to the slowdown in some parts of the economy – but in any case, it is below average.

Something we should add to this supply equation is the depletion rate. You have all these mines. Normally, if you don't invest anything, their production declines by around 2% to 3% per year. This is another few thousand tons of copper you need due to this depletion rate, year after year.

At the end of the day, what we see is that the need for copper is increasing, but the supply

can’t match the demand, so you need to incentivize – more investment is a higher incentive price. Over the years, the capex per project and the capex per ton usually increase. In the 1990s, it was around $10,000 per ton. Currently, some projects that are moving around $30,000 per ton. This is because you have to go to remote places, install new infrastructure, and get permits. It is more complicated to get access to water and financing. All these things usually increase the cost of opening a mine. If it increases, you have to require a higher copper price. Because of that, the current copper price is not enough to incentivize the supply. If the incentive price is not high enough, we end up with a copper deficit.

Demand is growing, and corporate projects are not enough to match it. The current mines are getting older, and their depletion rate is rising. If we don’t invest quickly, we will have a huge deficit in the long term. The deficit is almost certain over the coming years – probably from 2025 onwards if the demand keeps growing – but we can solve the problem in some way if we begin to invest. It seems most of the companies are interested in doing it, but with better terms or conditions than those offered currently by governments, regulations, and the copper price itself.

The copper price should be about $4 to $5 per pound in order for mining companies to be interested in investing in new mines because opening a mine is getting costlier year after year. Currently, the price is around $3.5 per pound. To think about some investments, we should see an increase in the copper price of at least 25% or so and also have certainty that it will remain high in the coming 20 to 25 years.

Now that we understood why copper is necessary, why there is not enough of it to meet the demand, and why copper prices should be higher, let’s take a look at Antofagasta. When you have a clear idea of what a commodity should do in the future, you have to look for the vehicle to invest in these trends. In our view, Antofagasta is one of the best – if not the best – copper miners in the world. It has four assets, which eliminates the monomine risk. Los Pelambres and Centinela are probably two of the best copper mines in the world. Antofagasta doesn’t have 100% in its mines. It has a partner – Japan’s Marubeni in the case of Centinela and Barrick in the case of Zaldivar.

Los Pelambres produces more than 300,000 tons per year, which puts Antofagasta in the top quartile of the most important companies in terms of production. The mine has a life of around 12 years. It’s important to keep in mind that this doesn’t mean you have to close the mine once you get these 12 years. Why? Because Antofagasta keeps investing in deposits around Los Pelambres to maintain or increase the life of the mine. If we do this presentation in 10 years, the life of the mine won’t be 2 years but 10, 12, or 14 years because Antofagasta is able to maintain this and invest money around the mine. The ore grade is quite good, around 0.6%. The net cash cost is good as well because Antofagasta is one of the lowest-cost producer in the world. It also gets some byproducts, like gold and molybdenum.

Centinela is another huge mine, with more than 200,000 tons of copper production. Its life is much longer (43 years). The ore grade is around 0.4%. This is also a very low cash cost copper mine.

Antucoya has a life of 21 years and a slightly lower ore grade (0.3%). When you have a low ore grade, you have to adjust your costs as much as you can to extract the metal efficiently and profitably. There are no byproducts here.

In the case of Zaldivar, Antofagasta’s proportionate share of the production is around 50,000 tons of copper. The life of the mine is 13 years. The company has a permit that should be

extended over the coming years. The ore grade is around 0.4%. This mine is not as efficient as the others, one of the reasons being its smaller size. The other is that the best part of the mine has already been extracted, and Antofagasta has to dig deeper. This is usually costlier for the company.

Antofagasta has room to grow. It can increase its production. There are some expansions under way, like the Los Pelambres expansion, and some decisions to be made – probably over the end of this year or the coming year – about the Centinela concentrator and additional expansion at Los Pelambres.

Looking at the very long term, Antofagasta has the Cachorro deposits. They could also be very important, potentially adding a few thousand tons of copper. With all of these, you could reach 900,000 tons of copper per year. In our estimations, we don't take into account this growth. We are very conservative. We prefer to base our decisions in what we have right now, assuming the cost that it's supposed to maintain and focusing on understanding the copper price dynamics and the cost structure Antofagasta has in order to have the best approximation of the free cash flow this company could generate.

Another important thing here in terms of cost is that when we're talking about Antofagasta, we are talking about one low- to mid-cost producer. This gives us a bit more comfort because when the copper price goes down – and eventually it does – we feel comfortable that Antofagasta can be profitable or at least break even in those bad scenarios. At the same time, companies with higher-cost production suffer more. This is another layer of security you add to your investment. On the other hand, when the copper price goes higher, you don't take as much advantage when you invest in a high-cost producer because the operating leverage of such a producer is much higher since an increase in the copper price affects you more in terms of margin.

Moreover, in the case of Antofagasta, you have practically no financial leverage because you are almost net cash. It's a safe way of investing in the copper mining space. We have three key pillars. One, we have a very small net debt – only 0.5 times net debt to EBITDA. The company is managed by a great team. Iván Arriagada, the CEO, has been in place since 2016. CFO Mauricio Ortiz has also been there for several years. You have the Luksic family with more than 60% of the share capital. They are always deeply committed and have done a great job here, always trying to preserve financial strength. They don't make any kind of crazy capital allocation. They don't like to buy things.

Recently, the only thing they bought was 50% in Zaldivar. I think it was 7 to 8 years ago, paying around $20,000 per ton. That's a reasonable price. They've recently divested Reko Diq – the copper and gold deposit in Pakistan that has to be developed. It has been there for decades. Right now, there is a lot of hype around this deposit, but we will see. They prefer to focus on what they know. It's mainly in Chile. They also tried to do something in the United States but had many problems. It's called Twin Metals, based in Minnesota, but the Biden administration has put many obstacles to developing almost any mine, so they focus on the assets they have to increase production through brownfields, which are normally cheaper, and extract as much as they can from the current footprint.

When it comes to valuation, we have three scenarios. The pessimistic one would be a replacement value. It will be okay. Let's take the production Antofagasta has right now and try to replace and build a new Antofagasta. I will say this is almost impossible because many intangibles are not in these numbers, like getting the permits, the know-how, and all the relationships with clients and suppliers. If we do this calculation, it's a capex of around

$25,000 per ton. If we take a number that's in line with the current market, this will give us around 10 pounds per share, which suggests a downside close to 30%.

The base scenario is like a floor for us. This floor has usually been a very good buying opportunity. Currently, our base scenario assumes a copper price of $4 per pound. There are strong reasons to believe that the copper price should be higher. Since we know we're dealing with a low- to mid-cost producer, we can calculate the free cash flow, apply conservative multiples, and get to an upside of more than 70%, with a share price of around 23 pounds.

Finally, we have the optimistic scenario where we assume a copper price of $4.5 or even $5 per pound. That would give us more than a 100% and a share price in excess of 30 pounds.

Depending on how conservative or how optimistic you want to be, any of these scenarios are reasonable. We prefer to stay in the base one. If it goes to the pessimistic one, we will add some more shares, as we did in the past.

To wrap up the overview of Antofagasta, this is a company based in Chile. All of its assets are in this country. We have stable legal regulation, which is essential. It's extremely important to know under what rules you are going to do your business. It is true that Chile has been turbulent in recent years, mainly due to the new constitution that should be voted over the end of this year because it was rejected last year. They changed the tax regime a bit. It was slightly worse for Antofagasta and the rest of the copper miners. I think copper is 10% of exports or 10% of Chile's GDP. It's a very important industry. All in all, we think Chile is a reliable place to be.

Secondly, Antofagasta is a producer, which is extremely important. The company has four producing assets. Producer companies are based on reality – you can touch that copper. On the other hand, junior companies are based on dreams. Miners tend to be too optimistic, but there are always more problems than expected – in terms of cost, in terms of delay, in terms of many things – so it's safer to invest in something real than to invest in something that may become a producing asset in a few years, but right now it isn't.

If you can, you should do it with experienced managers who have worked in this space for many years. If they are mining engineers, that's better because they know the asset – this is the kind of business where finance is not enough. You need to know how the demand for your assets will evolve. You have to know almost every deposit around the world in order to understand the supply. You have to learn how inventories move depending on the cycle. You have to possess good knowledge of your market.

Antofagasta also has a strong balance sheet. This is crucial for surviving in the darkest days. Looking at the medium term, it's also very cheap. This will sound a bit counterintuitive, but normally, these assets have to be bought when the multiples are high and sold when the multiples are low because mining companies are extremely cyclical. The worst times in terms of share price performance are those when you get the worst results. If you get the worst results, this means you get the high multiples. It is a moment to buy these companies. When you see that all is going well, that they are generating a lot of free cash flow and EBITDA, please take the time to consider if the current prices of the metal are sustainable because when it comes to very cyclical companies, such as mining companies, markets tend to overshoot on the upside and go very deep in the downside.

Finally, let me point you in the direction of a book I've read several times and share a quote

that I consider one of the keys to investing. The book I'm referring to is *The Shipping Man*. I think it's a great way to dig into the shipping space but also into other cyclical sectors that have things in common with copper. As for the quote, it's from Bertrand Russell: "The hardest thing to learn in life is which bridge to cross and which to burn." In this business, you have to say no many times. This is something Munger says a lot. Eventually, you say yes. In this case, we said yes to Antofagasta a few years ago. We keep investing in the company, and we think it's a good investment for the future.

The following are excerpts of the Q&A session with Santiago Domingo Cebrian:

John Mihaljevic: In terms of the valuation of a copper company in general and this company specifically, does it make sense to also look at reserves and how much we are paying per pound of reserves or something like that?

Cebrian: Absolutely. It is another conservative way of doing this. I would say the most conservative way would be resources and reserves. In this case, you have to take into account the kind of reserves or resources because there are several types. Inferred resources are proven or probable reserves. All of these depend on the type of research or investigation or the holes you have dug in the ground in order to know if you have copper or not.

If you have dug only one hole in the ground and say you are going to have copper, this is not a reserve. This is a potential resource. If you have dug many holes and done all the geological work, you could say, "We have a reserve here." Once you know if this is a resource or a reserve and what kind of resource or reserve it is, you have to apply what you believe to be the correct copper price and a multiple because you have the copper in the ground. Afterwards, you have to build all the infrastructure to extract that copper.

Usually, depending on the level of security you have that there is copper there, you apply more conservative multiples or less conservative multiples. This multiple can go from 1% of the copper price multiplied by the research or whatever to 10% of the copper price multiplied by that, but absolutely, it's a good measure – a very conservative measure.

We did it with Antofagasta and we did it with Atalaya. In the case of Antofagasta, both represent another floor of evaluation because at the end of the day, it is a producing company, so you have to take into account that its machines and infrastructure have a value, not only the reserves it has. However, it is absolutely a good way of valuing a copper mining company, too.

Mihaljevic: To follow up on that, what's a generally attractive multiple? If copper prices are around $4, is it perhaps paying one-tenth of that? Maybe 30 or 40 cents per pound of reserves?

Cebrian: It depends. For the highest quality reserves in mining, I would pay around one-tenth, or 10%, of the copper price multiplied by the reserves. In cases where we only dug a hole, we can say that our resources are inferred resources because we made a lot of assumptions based on that one hole. I should have around X tons of copper; I would apply 1% of copper price or even less.

This is extremely important because many times, junior companies say, "I have tons of reserves here." You should stop and say, "What kind of reserves? What kind of resources? Where are they located? What byproduct do you have from all of that? Is it easy to extract?"

There are many questions to ask before even thinking about the permits. The first thing would be to know what kind of reserves or resources are underground. Afterwards, you have to consider how you are going to extract that. First of all, be sure that what they are showing to you in the numbers is fine. Many times it is, but you have to do those checks.

Mihaljevic: Do you like to see some kind of a dividend yield from a miner to demonstrate commitment to shareholders or discipline on the part of management?

Cebrian: In the case of miners, it depends on the company. Antofagasta has been investing a lot in desalination plants in Los Pelambras. It is also investing in some expansions and new resources.

For me, organic growth would be the first and most important way of allocating capital. At the end of the day, it is not only about maintaining your current production. If you could expand your production at the right prices, that would be great because we believe the copper price should be higher.

We believe in the way Antofagasta is doing things. We think it is the best way of allocating our money – obviously, if it's allocated in the proper way. Afterwards, in the current scenario, I'd probably prefer a share buyback to a dividend because it's most accretive over the long term than dividends are right now.

Another important thing is leverage. I am very comfortable with Antofagasta's leverage because it's so small, but with any mining company, I would require conservative leverage – 0.5 times would probably be very conservative for some people, but I don't like mining companies with 2, 3, or 4 times net debt to EBITDA. However, we should also take into account the point of the cycle. If you have 2 times, for instance, it's okay at the low point of the cycle where the copper price is down. However, if you have 3 or 4 times at the peak of the cycle and do M&A, it would be very scary for me, even more so if the company distributes a dividend.

In this case, I am very comfortable with the management because you have the Luksic family looking very carefully at the asset. You also have a highly experienced management team that is well-aligned in terms of incentives. We are comfortable. We don't need a big dividend to show us that there is discipline at the management level.

Mihaljevic: Given your bullish view on copper long term, would you also consider investing in a higher-cost producer? As you said, there's greater operating leverage in that case. Is there any company you like that might not be very profitable at the current copper prices but could become very profitable if copper prices go higher?

Cebrian: Yes, we have one – Atalaya Mining. I presented it at the European Investing Summit 2020. It's a mid- to high-cost producer. Firstly, it is based in Spain, which is a higher-cost environment. Secondly, it's a deposit discovered more than 100 years ago. The best-grade ore has already been extracted.

When you take a look at the cost here, it is also quite important to keep in mind that there are different kinds of cash costs. When a mining company talks to you about cash costs, you have to look at what it takes into account. Because of that, we usually like to have the all-in sustaining cash cost fully included.

Antofagasta is around $2 per pound. It's probably a bit higher right now due to inflation. In the case of Atalaya, we are talking about $3 per pound. With a copper price of $3.5 per

pound and usually some kind of discount because you sell the copper concentrate to a smelter that only pays you 95% of the copper price, the money you add is thin.

Atalaya is a mid- to high-cost producer, but we feel comfortable because we know that we have this operating leverage. We know that, in the current scenario, we are breaking even or making a few euros. We know that if the copper price goes down – and it could – we are going to lose money, but we don't have financial leverage because this is a company with net cash. We know that if things go wrong and the copper price is down for several months or quarters, these companies will be able to survive, adapt their cost structures, and flourish over the long term.

What I wouldn't do is invest in a mining company with the two boosters – operating leverage and financial leverage. In the mining space, operating leverage is assumable for us, but financial leverage is not. Believe me, there are many companies in this space that have not only operating leverage but also financial leverage. This becomes extremely complicated if you have low metal prices for a long time.

Mihaljevic: Santiago, it was a great pleasure to have you with us. Thank you so much for taking the time to share this investment thesis with the MOI Global community.

About the instructor:

Santiago Domingo is an investment analyst at Magallanes Value Investors. Magallanes is an independent equity-only asset management firm, following value investment philosophy and controlled by its founders. Magallanes' aim is to preserve and increase its clients' capital by outperforming the market in the long term. Prior to Magallanes, Santiago worked as an equity portfolio manager for Solventis Asset Management, as an analyst for a start-up called OralSurgeryTube and in Endesa's finance department. Santiago holds a Bachelor's degree in Finance and Accounting from University of Zaragoza and a Master's degree in Institutions and Financial Markets from CUNEF. He is a CFA charterholder.