



[00:00:00] Rob Campbell: On today's podcast, my colleague Josh Samuel joins me from Singapore to talk all things defense. Our conversation spans the full range, big picture, geopolitics, nitty gritty, capability specific. Josh is full of knowledge, anecdotes, personal experiences and insight. Don't miss his description of dining with Rheinmetall CEO, Armin Papperger, whose protection detail rivals that of the German Chancellor, and I love Josh's parting comments, putting in perspective his own military service and the role of defense in an increasingly complicated world.

[00:00:36] V/O: This podcast is for informational purposes only, information relating to investment approaches or individual investments should not be construed as advice or endorsement. Any views expressed in this podcast are based upon the information available at the time and are subject to change.

[00:00:53] Rob Campbell: Good morning to you. Welcome to the podcast.

[00:00:55] Joshua Samuel: Yeah, Good evening I guess, and thanks for having me on.

[00:00:59] Rob Campbell: Well, it'll probably get darker as we go here, just given our time zone differences. I've got lots that I want to ask you about today, but I thought we'd start here: Rheinmetall is a defense company that's based in Germany, probably best known for its tanks and other land systems. Now, prior to 2022 looking back, its shares generally traded between 60 to 90 euros. We bought it, call it mid- to late 2022 I think, for 164 euros when we first purchased and as we record this podcast today, its shares are currently trading at 1,350 euros. In other words, a remarkable 700% plus return in less than three years. Can you go back and set the stage for us prior to the invasion of Ukraine? I guess I'm thinking less about Rheinmetall specifically, although certainly want to come back and talk about that later, but more just on how the defense industry, probably the world, how it's evolved over those three years.

[00:01:53] Joshua Samuel: The war started and I think in our international equity strategy, we sensed something had changed in a big way. And we also did have some Russian exposure, and so that was a warning sign. I think we may have talked about what happened there before. And so there was really a big step-change in what was going on in the world. And I thought: hey, let me allocate some time to look at the defense sector. Here is some very quick background: I have been very interested in technology, and specifically defense technology, since I was eight. I've been attending air shows basically ever since I was eight. Every two years there's an air show in Singapore. So, I kind of know this industry, the products, like the back of my hand. But let me do a bit of work to understand the investment perspective as there are opportunities here that could fit our bottom-up criteria. When we started this process after the war—days after—we got to understand the sector. And I think the big change that was occurring here was that demand in the defense industry, particularly in Europe, has been constrained ever since the Cold War ended in the 1990s and we're talking about huge numbers here. So, on a budget basis, Europe, used to spend about 2.75% of GDP on defense back in the period of the 80s. That fell to a low of about 1.3% of GDP over the past 10 years. And then, if you take a look at the actual inventory of military equipment or kit, if you look at main battle tanks, in 1992 Europe had 18,941 main battle tanks. And in 2022 it was down to 4,362. That's a 77% drop. For aircraft, it was 57%, for ships 40% ...you get big declines in inventory.



[00:03:53] Rob Campbell: You're saying that not only are these countries not spending as much as they were over the last 30 years, but they're also drawing down their inventory at the same time.

[00:04:01] Joshua Samuel: Not drawing down, selling it. I live in Singapore and when Singapore bought a bunch of tanks off Germany, I think 20 years ago or 15 years ago, from these numbers that I've just told you, we bought it at fire sale prices. Just the equipment they have on hand was massively depleted. And so this is the demand perspective, and I think where I'm going to with this, that with a period of low demand, ultimately it resulted in the supply side, the capacity being shut. There was consolidation that was occurring on national levels, and imagine 30 years of low demand is bad for any industry. So, on the supply side, or the company side, basically less demand, less supply, more consolidation occurring, and the consolidation is most evident in the land systems, which, from those numbers had the most drawdown in inventory. The French and German tank manufacturers are called Nexter and KMW merged in 2015. In Britain, BAE bought Alvis Vickers, which was another tank or armored vehicle manufacturer, and Rheinmetall bought part of BAE Land Systems, they did a joint venture with them in 2019. So, you can see there was consolidation on the supply side, and that is very important for the bottom-up thesis, because there is less companies operating in this sector. They are more consolidated. And in the case of Land or Rheinmetall, they have consolidated across Europe. There's only one or two names in town in Europe when it comes to land systems. And so that was kind of the big picture that we realized was going on there, which is very interesting, because this is the good setup that you want for wealth creation: a constrained supply, and now you have a paradigm shift in demand. That was what got us looking at all these names in the start.

[00:05:53] Rob Campbell: I mean as someone who obviously hasn't been following the defense sector as closely as you have since eight, what I seem to remember was just a lot of attention on cyber capabilities, as opposed to the hard on-the-ground capabilities. And so you're saying that where there's been a lack of demand, but also a lack of supply, investment, development capabilities, it's really been on those harder on-the-ground systems.

[00:06:19] Joshua Samuel: Yes, if you think about it, the last major ground battle was in the Gulf War in 92—1990s/91—that was the last time NATO really used their tanks in a big manner. And ever since then, most of the priorities for the US, for NATO, have been on counter insurgency, so Iraq, Afghanistan, and cyber. All the hot topics—cyber security, drones—those got most of the capital, and specifically when it came to ground, what I noticed was that for aircraft, US actually has invested in fifth generation aircraft. For ships, there's been a next iteration of ships, for ground equipment or land systems, there's actually been no innovation going on since the late 1970s that's how bad it was on multiple levels, be it inventory, technology, R&D, no one's been innovating. And going back to Rheinmetall, this was the only company that actually was still investing in that dying industry. So while the industry was in the doldrums and consolidating, Rheinmetall was consolidating the industry, and they were still investing in R&D. I think they were spending 80% of their self-developed R&D and it was going into land systems and trying to build up the next generation of equipment with their own money. And so that meant that they were very, very well positioned to capture what's going on next.

[00:07:45] Rob Campbell: I do want to come back to that, this concept of next generation, but can we stick or go back to the demand side first? There's been lots of news with respect to the commitments made since Ukraine, but those have ramped up in the last number of months just with geopolitics. Can you give us a sense for what some of those commitments are? Most have probably heard about Germany's trillion dollar commitment over the next 10 to 12 years in infrastructure and defense. But as you add up and sort of look at all the different countries that are seemingly increasing their spending on defense, what does that demand side look like today?



[00:08:21] Joshua Samuel: On the demand side, it's a bit tricky, I think. There is Germany, which has the fiscal ability to spend and so whatever they say they're going to do, I think it is much easier. They don't have to worry too much about how they're going to fund it. On a euro level I think there's like a 150 billion euro program that's been talked about, I think I just read yesterday there was pushback by some of the countries, because Italy, France, one other country, they don't want to borrow. They want to use their fiscal headroom to borrow for this. So there's still debate and uncertainty along how exactly are they going to fund it. And so I would say, unfortunately, not all of Europe is equal when it comes to this theme, and this is something that we have talked about internally, is that, yeah, in general, I think the willingness to spend is there across all politicians. People see the threat but the ability to spend is an entirely different story. In that regard, Germany probably has the most fiscal headroom, most ability to spend. And then when it comes to the other countries in Europe, there's still question marks at the moment around whether they can spend. Now, if we dive deeper, if you want to know, what will they spend on, that is actually a whole different topic.

[00:09:39] Rob Campbell: Let's go there. And I think about this from the perspective of, well, you talked about how inventories have come way down. But then also, I imagine, if you're saying that the last major NATO involvement was the Gulf War, I imagine the nature of war has evolved as well in terms of capabilities, what's required. What has Ukraine taught us about capability gaps and what's needed. Where is this capital ultimately going?

[00:10:05] Joshua Samuel: This is my favorite topic! I would say not just Ukraine, but we can also add what's going on in the Middle East. You have Yemen, because these are active conflict zones, and what's happened in the past five years has been a couple of things. So firstly, land systems—this is specific for Ukraine and Europe. You need more infantry, fighting vehicles, tanks, and artillery. The initial pushback within the team when I brought up Rheinmetall was that, hey, we are seeing all these videos of drones blowing up Russian tanks in the early days of the war, isn't armor obsolete? And there's two things. You still need armor to capture new ground. So unless you want to stalemate war, you will need armor. But if you want to go on the offense, you want to capture new ground, it's still better to have your inventory. We put them in an inventory fighting vehicle. There's explosions going all around, but they're still protected, and you still need them to capture new grounds. You need them for offensive maneuver capabilities. When it comes to the drones, this gets a lot of attention in the media, but you must remember that this is a new system that was introduced into the battlefield. It will force an evolutionary response, just like everything that has gone on in warfare over the past thousands of years. So because of this, I'm going to say tanks are not obsolete yet. You think of the introduction of the machine gun back in World War One—that did not make troops or soldiers obsolete. The introduction of the surface-to-air missile system did not make aircraft obsolete. And so just like how drones have been introduced into the picture, what will happen is that there will be a change in military doctrine, training, techniques, protocol and technology. This will evolve to counter the threat. And in fact, this is also the opportunity for some of our portfolio companies, because they are well-positioned in these counter drone capabilities. So that's number one. Number two, in a related point, is gun-based SHORAD. SHORAD stands for short-range air defense, and it's a term that is going to be very talked about over the next 10 or 20 years, because specifically, I think you would know that drones are very cheap. You fire a million dollar missile. It doesn't make any kind of sense. The most effective kinetic solution to downing a drone in Ukraine right now is gun-based systems. It's actually called the Gepard, which is a system made by Rheinmetall back in the 70s, if I recall, they have a much newer version that's selling like hotcakes. But gun-based short range air defense, or gun based SHORAD, that is a capability gap that is occurring. And the irony is that NATO and most Western countries actually decommissioned these gun-based systems about 20 years ago because they thought, hey, in the era of fighter aircraft, these gun systems are too slow. But it turns out these gun-based anti-aircraft systems are perfect for destroying slow moving—but more harder to detect—drones, and it's more cost effective.



You're talking about, you know, \$3,000 for a burst of ammunition to down a \$10,000 drone or something like that.

[00:13:11] Rob Campbell: So if I'm understanding right, you're saying that pretty much every tank out there is going to need to be outfitted with this kind of technology.

[00:13:17] Joshua Samuel: Not every tank. So what is happening is that they have specific tanks. You can go and Google the Gepard, and in fact, I actually went to Italy and saw the production lines for the Sky Ranger. It is a specific kind of armored vehicle that is purpose built. It has a radar, it has a gun, and it will protect the other tanks around it, so it provides air defense coverage in a localized manner. This is going to be a very big theme, and I think militaries are still scrambling to figure out how much of this do we need to keep our forces protected. Number three is the restocking of ammunition. Germany used to operate on seven days' inventory of war ammunition. After they've seen what's going on in Ukraine, NATO is likely to go to 30 days at least, maybe 45 or even 60. I'm not sure how realistic that is. There is a huge restocking need in Europe. I'm going to finish here. Two more—the next one is ground-based air defense. So drones get a lot of attention in the media. But another important theme is that we have entered the missile age. In Ukraine, Yemen, Iran, ballistic missiles have become very proliferated. Ballistic missile technology used to be something for superpowers, but what we see now is that third world countries are actually able to access ballistic missiles. And so what this results in is that you actually need more missile-based air defense, and you also need more interceptor missiles. So you need a magazine, as they call it, and you need more systems. And we have companies in our portfolio that are basically very geared towards this, ground based air defense systems. And then the last one, which I won't spend too much time on, is like munition and drones, I think this is very well covered in the media. Everyone talks about this. So it is game changing. I think militaries will need more of this.

[00:15:34] Rob Campbell: Your comment on just the current production capacity relative to the need, depending on how many days of inventory that Europe would like to have—that's a massive gap, and I assume there's a desire to get there more quickly. I read recently that different facilities were being repurposed. I think I read recently that Rheinmetall had bought like a car manufacturing plant and was basically converting it into something that could help them in terms of their business. Are we seeing a lot of that too in Europe?

[00:16:03] Joshua Samuel: Yes, I think there is a very big push to ramp up. The problem, specifically for ammunition, is that the supply chain, or the value chain itself, is just not ready. Remember, 30 years of under investment does not get solved or fixed in three years. You can build the facilities, but in a lot of cases, the companies are lacking the technology. They're also lacking the supply chain to actually ramp up that fast. And so in the case of Rheinmetall, it's reached the point that, because they were the guys who were investing over the past 10 years, they didn't really stop investing in the sector. They have the latest production technology when it comes to ammunition, so they are able to ramp up faster than the rest and at a cost structure that is better than their peers. So when I spoke to Armin, who is the CEO of Rheinmetall, he told me last year that they would bid for these ammunition contracts with Germany, and he got a call from the defense minister thanking him for providing the lowest price. So it's not that they're price gouging the customer. They actually provided the lowest price, and despite that, they're still able to do good margins. And the "why" behind that is because they have kept their production technology up to date, as opposed to peers who have not been investing, and so they don't have the same cost structure. They don't have the same ability to ramp as Rheinmetall. So Rheinmetall I think, is something like 50% or almost 50% of Europe's 155 mm ammunition production capacity, which is huge. There is that demand. But just remember, 30 years of under investment, supply chains are just not ready. On a side note, we do own a company in Korea, and Korea has had their supply chain running hot for basically forever, because their technically still at war with their neighbor. So that's why you will notice Korea has won some deals in Europe,



because they're just able to deliver much faster and also cheaper because of their hot supply chain, and having a value chain all over the country means that lower cost.

[00:18:11] Rob Campbell: I noticed you mentioned Armin Papperger, the CEO of Rheinmetall. Did you speak to him in person?

[00:18:18] Joshua Samuel: Yes, I met him last year on the investor day. I was at the same dinner table as him. I met him again last week, actually, when I was in London. He's high demand, though, there's a lot of investor interest, I wanted to get a one-on-one meeting. This time I didn't get a one-on-one meeting.

[00:18:32] Rob Campbell: I've heard he's in high demand for other reasons too! How many bodyguards did you have to get through? For listeners who may not know, I mean, he's been targeted by Russia, allegedly, just given the importance of his role in Europe's defense.

[00:18:44] Joshua Samuel: This is a serious thing. When I went for the investor day, I actually was considering asking Vijay if I should get risk pay. The Russians are known to be trying to assassinate him. And for the investor day, they don't tell you where the dinner is going to be. You don't know. You meet at the hotel or you go onto a bus, and you're not told where you're going to, the bus arrives at a destination. There's people with MP five submachine guns outside, police cars and all that. He gets the same level of security as the German Chancellor. So this is because he is so impactful. If there's one company that is doing the most in helping Europe rearm, specifically for the capability gaps, I would say it's Rheinmetall so that's why he's the target.

[00:19:25] Rob Campbell: Speaks to the competitive advantage that the company has. I want to run through a couple of other themes that I've heard you speak about, with respect to defense and in no particular order, I'd love to get your quick thoughts on some of these more for my own education, but hopefully also for those of listeners. Can you talk about the sales cycles involved? I imagine they're quite long.

[00:19:45] Joshua Samuel: Indeed. So I'll start off from actually political statements, because I think this is very helpful in the current environment. Politicians are talking about increasing defense spend. A couple of weeks ago, the Thales CEO mentioned this data point that I thought was very useful: it takes about two years to go from a policy statement to an order being placed by the military. That's just for policy to order. And then, from my understanding, it can take anywhere from six months, five years, for that order to translate into revenue. So it really depends on the type of equipment. If you're talking about defense electronics, it may be a bit faster. Talking about platforms like buying a fighter aircraft or missile system. There's this longer wait time at the moment, and it takes about maybe three to five years for those to come in to hit your revenue. So we are talking long sales cycles, and then the contracts themselves are very long. When I say platform, it means like a fighter aircraft or a tank that's called a platform. When you have a platform, that production run is going to be like 10,15, years.

[00:20:52] Rob Campbell: And this comes back to much like a software product. Everyone's trained on the system, it's integrated. There's a lot to replace it.

[00:20:59] Joshua Samuel: On a high level, if you think about MODs [Ministries of Defense] in the business, there is an installed base effect for a very simple reason. And you know, in Singapore, we have to do military service and so kind of get to do some scuttlebutt on this occasionally. This is not like shopping for goods in Walmart or Costco. You don't want to buy a few different tanks, firstly, because one, from a training perspective, you want to make your training of your personnel easier. And number two is from a military logistics perspective,



less skews or less type of components, it's just more efficient for the logistics supply chain. And in war time, you don't want to be running three different engines for three different types of tanks because if you need to get that to the battlefield, it's really very complicated, how you think of your inventory management. And so militaries tend to use just one or two types of a product and they rarely will buy multiple kind of skills. The exception right now is Ukraine and also I think Poland. And that's the exception because of urgency, that Ukraine just, they've been donated weapons. They have no choice but to accept it. Poland also, they just couldn't get their tanks fast enough, and so they ended up buying American. They have German tanks and then they're going to buy Korean too. So they have quite a big assortment, but that is not the norm, that's the exception, I would say.

[00:22:20] Rob Campbell: There's like a strategic reason why there should be particular concentrations. Within a lot of these providers.

[00:22:27] Joshua Samuel: Yes. Some of the platforms have not been updated since the '70s in Europe. So the Leopard Tank is Germany's main battle tank, and it's very popular and sold across Europe. That was made by Rheinmetall and a company called KMW, which is now KNDS. This tank is sold across Europe. What happens now is that when there is an urgency, there's demand, they're going buy more of the same tank, and so visibility. Because they have an installed base across Europe, they're very likely to get the orders.

[00:22:59] Rob Campbell: I think a lot of the companies that we've been talking about would be determined to be prime contractors. Can you talk about the difference between who's a prime, who's not, and what that means in terms of orders, perhaps related to what we just talked about?

[00:23:10] Joshua Samuel: In the portfolio actually, I would say that maybe not all companies are prime. Thales is defense electronics. They are making the most important components that go into a fighter jet, but the prime would be Dassault, which is a fighter jet manufacturer itself. Similar story for I think some of the other portfolio names where they are actually not doing the platform itself. Rheinmetall probably you could say, is the prime. They previously were not the prime. So Rheinmetall used be in fire control systems of tanks and basically all NATO tanks except for France uses a Rheinmetall-designed gun, and then fire control. Most of Europe is using Rheinmetall. They've moved from a subsystem manufacturer, and now they're selling their own tanks under their own name. So they've become a prime, but in general, maybe you get slightly lower margins as a prime.

[00:24:05] Rob Campbell: Can you define what a prime is?

[00:24:17] Joshua Samuel: The prime is the main company that is in charge of assembling the product and putting everything together. And then you have the subcontractors which build defense components. A lot of the companies that we own, like Leonardo, Thales, they are doing defense electronics, which is basically the mind of a lot of these systems and is the most important. The central nervous system, if you want to call it. Those are mission-critical elements of military platforms, and it's becoming more important because as the world becomes more digitized, etc., the brains of the equipment is just more and more mission critical.

[00:24:42] Rob Campbell: So far, Josh, we've talked about mainly European companies. I know you mentioned a South Korean one. Can I ask about the US? The US spends the most on its military. How do the US defense players play into all this?

[00:24:55] Joshua Samuel: The US has the most advanced weapons on Earth. As you mentioned, they've been spending, I think, way more than the next two or three countries combined. So in terms of technology capabilities,



they are leading the world. They're the only western country to have a fifth generation fighter jet. I think everyone else has failed to invest or are only starting to invest now, but they have it in operation, it's flying. So they have been one step ahead of basically everyone when it comes to the highest-end kit, anti-missile technology. Two days ago, I think they were testing the ability to intercept hypersonic riding vehicles, which is real rocket science here. So technology is there, but you have to separate that from the investment perspective and perhaps why I didn't ring the bell previously on US companies—I'm not saying that I won't, I could change my mind here—is that if you think about it, what's the odds of us spending more money on defense going forward versus say, Europe. And I think this is a contrast to show us that we haven't owned a single US defense company so far. Because if you think of the difference in outlook at least two or three years ago, the US is spending what, six, 700 billion on defense. But also, what are the chances of that going up—having a step change is quite low versus say, Europe, that was underspending. And then you have the delta in long-term growth. And so I think the demand picture is that yeah, they got the best of the best kit out there, but the government is their own biggest customer and they're just spending a lot. And the other important thing to mention about US companies from a moat perspective is that the US is a big customer, but when you sell domestically, your margins tend to be lower. In most cases, the US government owns the IP. So yes, they've developed the most advanced fighter jet of missile system, but the IP is owned by the government. When you sell to the DOD, you're not going to get whatever price you want. There is basically a cost-plus kind of basis, and so domestic sales kept profitability. And then when it comes to the export of US equipment, the US has a system called FMS, foreign military sales, and it's government-to-government discussion on the pricing. So effectively the companies themselves don't really get the full benefit of selling overseas as if they were the ones selling the product. This is quite different from some of the companies in our portfolio.

[00:27:27] Rob Campbell: Yeah. I was going to ask if you can speak to LIG Nex1, which I imagine is quite different in that regard.

[00:27:32] Joshua Samuel: LIG Nex1 is a surface to air missile position sensor manufacturing company. The backstory is that in the 1990s, South Korea used to own Russian government debt. Russia couldn't afford to pay, and so what they did in return was to transfer their IP of their most advanced anti-ballistic missile technology and anti-aircraft technology. It's called the S 300 and maybe the S 400. This is all partly classified. I think it's all rumors here, but let's just go with it. It was transferred to the Koreans.

[00:28:02] Rob Campbell: You're on Signal, I guess. Josh.

[00:28:07] Joshua Samuel: No Signal. I do like to research and I really go into the weeds from a personal passion or interest here. Some of this IP was transferred to the South Koreans. They reverse engineer it, so there's no more Russian DNA in the IP anymore. They totally own all of this IP at this point. And the significance of this is that the amount of R&D you have to spend on anti-ballistic missile technology is actually very, very high. It's something that only superpowers can afford. Just to put things in perspective. The science behind this is absolutely mind blowing. Ballistic missiles travel at their fastest at Mach 25 or five to six kilometers a second. These systems have to hit that moving target. People talk about the shooting of a bullet. A bullet travels at one km a second, so this is way more advanced than that, and they have some of this capability to actually do some of this. And so it's very advanced capabilities that sit in this company. Historically, if you look at the numbers, I think I looked at that in 2023. Historically, they've been selling domestically, so to the point I just made, domestic sales, low margin, high single digit operating margin. ROIC is also probably like what, seven, 8% on my calculations. But when they sell overseas, they get to set whatever price they want. Now, I'm not going to give the numbers here because I don't want to destroy their prospects or overseas sales, but from my perspective, yeah, overseas sales is highly



wealth-creating. I did the analysis with the ROIC. And it's quite different from when they're selling domestically. It's not just them. You look at Europe, Europe's a fragmented country, so you sell to Germany, probably you have to accept slightly lower margins, but when Rheinmetall is selling abroad, we expect them to get better margins. Same for Thales. You sell to France, lower margins outside of France, higher margins. That's the nuance associated with perhaps non-American defense companies that I liked at least a couple of years ago. Now, I'm not saying US companies are un-investible. I think at some point of time I do want to look at them in detail about the valuation. There's been quite a big gap going on here, so never say never.

[00:30:09] Rob Campbell: One more theme I wanted to ask you about before we get to valuations. You mentioned next generation technology versus platforms might be more mature. To a lay person, the profitability might be in the latest technology, but I think you've got a different view.

[00:30:23] Joshua Samuel: I don't like new technology from an investor perspective but as an enthusiast in this, I love reading about new technologies. But there's execution risk, and there is development risk with this, because typically when you have a new technology, militaries will want the latest advances in the latest generation of equipment, and that means R&D risk to begin with. You can go and read up on it. Basically every defense contractor at some point in their history would've had some sort of blow up in terms of a new project going bad, the prime or the subcontractor, and something just has development delays, which leads to write-downs. That's the development risk. And number two is the execution risk because if you're building something for the first time, you may not be able to put it together at the price that you go to your customers. So new platforms tend to carry higher risk. And it's the old platforms, the old, boring, mature platforms, that actually have lower risk because you've been building this for 20 years. What's the odds that you're going to misprice the contract—probably very low. And in fact there's probably like some sort of learning curve effect where you're just getting better and better at building it. So that is actually a very important mental model when thinking about feasibility in this industry.

[00:31:43] Rob Campbell: Can we have the valuation conversation? We started the podcast just talking about how Rheinmetall and a lot of these companies have just done remarkably well over the last several years in terms of returns for shareholders. How do you square the valuations today? Especially given your comments around, okay, well maybe Germany can pay, but maybe a lot of these commitments might not actually come through?

[00:32:03] Joshua Samuel: A good story can be a bad investment if you're buying it at the wrong price. And I unfortunately think that at the current levels, some of the valuations are reaching the P 90 range of our DCF or IRR, so you can see they're more stretched at the moment. When I think about risk, not all companies are the same. Rheinmetall, if you put valuation aside for a bit and just think of the visibility of growth in Europe, at least they have the highest visibility there because they're levered towards Germany.

[00:32:37] Rob Campbell: Visibility meaning predictability of the cash flows that are being anticipated in the future?

[00:32:40] Joshua Samuel: Yes, because of number one, Germany's their major customer. Number two, their equipment is in high demand, short cycle. Unless Europe decides you no longer need to restock and this Russian threat is over, then that comes into question. But more or less, I think because of the importance of their products, because of the depth of underinvestment in land systems, the visibility of growth there is probably the most certain of the European defense companies that we own. But the problem is, I think it's at this point quite well known and stock has gone up 800% since we bought it. So in our models, it's above our fair value range, probably towards the higher end of the DCF spectrum and good company, good business, good story price,



probably yes at this point. We still own it.

[00:33:33] Rob Campbell: I know we've been trimming quite often actually as the price has come up, too, just to manage the weight.

[00:33:38] Joshua Samuel: Yeah, just risk management and there is an upside option, so we do our base case scenario, but Rheinmetall still has upside options that are not fully pricing in and that's why we still are keeping it in the portfolio. There is a huge US program that could, I will say, almost double their order book again because the US wants to build a new inventory fighting vehicle. This is like a 30, 50 billion dollar program or even larger. So I don't have the number off-hand. But there are upside options that could occur. And number two would be the SHORAD systems that I talked about remember, I was talking about gun-based SHORAD? And it's very important to understand this, that military doctrine takes years to change. So going back to the sales cycle, I gave you the company perspectives, but from the customer perspective, actually to underwrite new capabilities, that sometimes takes five years because they need to figure out, "Hey, what do we do with this system? How do we employ them in our tactics and procedure?" Officers have to go to a military school to actually understand the new tactics and all that. And so one hypothesis I have is that there's been some orders placed for these systems right now, but as the drone track becomes more clear and evident, then the number of these systems they need to cover or their strengths will actually be more than whatever's on order today. So those are some of the upside options that are not embedded in our base model, but that is keeping us still invested even at the current valuations.

[00:34:59] Rob Campbell: I'm sure there are listeners out there, myself included, by the way, who would think, well, gosh, I get the demand. I get the supply side. But from an economic perspective, isn't this highly unproductive spending, meaning you are building stuff that either blows up, blows other things up, gets stored in a warehouse and has an impact on human life. How do you think about that?

[00:35:23] Joshua Samuel: That's a very important question for us to address. I have a bit of a different perspective of this for quite some time because of myself being in Singapore, and so for the listener, Singapore has mandatory military service at the age of 18. All males have to do two years of military service, and Singapore's a very peaceful country. We have not gone to war. Why do we need this? It's to keep our democracy safe. The best deterrent sometimes is having the systems, having the soldiers in place so that people don't try to test the boundaries. We believe strongly in diplomacy, but you need that deterrence to ensure that your diplomacy can start, and to also ensure that if bad actors want to go across the line, they will think twice, and that's been Singapore's mentality. As a teenager, when I was forced to do military service, I can honestly tell you I did not like the idea. But now, 18 years later, I'm a bit wiser and I actually, you look at what's going on in the world, and it's actually very, very important that countries have the ability to defend themselves. We talk about democracy and being able to say what you want freely. That will not be possible in a lot of these countries that have been acting as the aggressor. If we're talking about keeping our society safe, keeping our way of life safe, countries need to spend on defense to make sure that their population, their way of life, is protected and I think that's really it. Unfortunately, humanity has been waging war for the whole of history, so it would be nice if we stopped, but the base rate is quite unlikely. There's always going to be some sort of bad actor out there, and so you do need to defend yourself. And I think what's going on in the US unfortunately the US, is withdrawing from the rest of the world, at least in Singapore. We used to view them as the policeman of the world to some extent. They've hung up their hats and are walking away from that responsibility. So that means the world, unfortunately, is becoming a more dangerous place, and so countries have to fend for themselves. And going back to our European names, one new theme that was coming out of this is strategic autonomy because the Europeans are realizing that they



need to be less reliant on the US and they need to defend themselves. I won't go into too much detail, b but yeah, I think that's kind of the theme, right, to say hey, countries need to be well trained at deterrence.

[00:37:52] Rob Campbell: Well, Josh, that sounds like a good place to end. Very well said. I'm sure your country appreciates your service. We have a number of people at Mawer who have served. In fact, our founder Commander Mower has served in World War II, and so it does sound like a decent place to end. Thanks so much for the discussion, Josh. Hope to see you again back on the podcast soon.

[00:38:10] Joshua Samuel: Thank you. Really enjoyed it.

[00:38:14] Rob Campbell: Hi everyone. Rob here again. To subscribe to the Art of Boring Podcast, go to more.com. That's MAWER.com/podcast, or wherever you download your podcasts. If you enjoyed this episode, please leave a review on iTunes, which will help more people Discover the Be Boring, make Money philosophy. Thanks for listening.