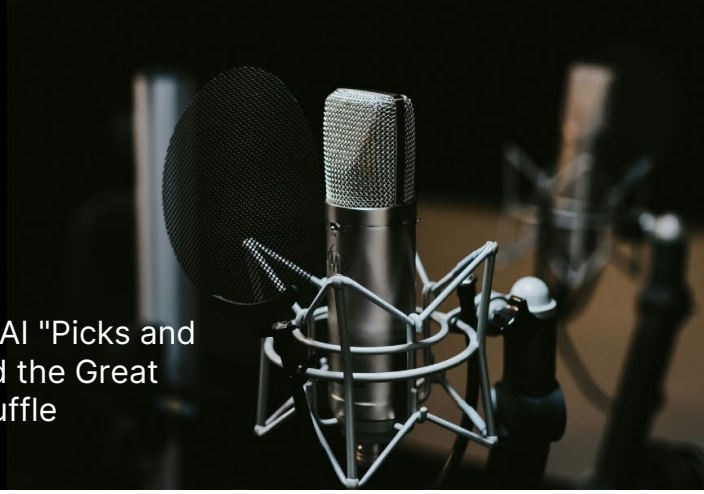
the art of boring™

EP 210 | Emerging Markets: AI "Picks and Shovels," ROIC, and the Great Supply Chain Reshuffle



[0:00-0:23] Rob Campbell

Today on the Art of Boring, Wen Quan Cheong joins me to talk about important themes in emerging markets. While some of the themes themselves may not be huge surprises—think AI and the rerouting of supply chains—the detail underneath is well worthwhile, including discussions on portfolio holdings you've probably heard of like TSMC, SK Hynix and some you maybe haven't: Actor Group and Hyundai Marine Solutions.

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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.

[0:44] Rob Campbell
It's 11pm in Singapore, Wen, welcome to the podcast. Thank you very much for staying up as late as you did, although I understand you just came back from the badminton court.

[0:56] Wen Quan Cheong
Yes, I'm hyper-energized and I'm happy to talk about anything.

Rob Campbell
Very good. Well, please bring that energy because all I have to talk to you about is a pretty simple question, but I suspect it's a rather bigger one. We sit here at the beginning of 2026, and emerging markets last year—equities—were really the standout performers. So as we look forward, can you walk us through some of the biggest themes that you see in emerging markets today? And I imagine we won't start very far away from AI.

[1:29] Wen Quan Cheong
Yes, there are several themes in our portfolio that we're trying to position for. Having said that, obviously we are not all in [AI exposure], and we try to diversify our exposures as well. But yes, there are several key themes that we are focusing on right now.

The first theme, I would say, is the picks and shovels of AI. We believe that we can make good money investing in these AI picks and shovels because AI currently is a blue ocean structural theme, which

means that it's hard to put a figure on this, but the industry profit pool, we believe, will increase over the long term. What's interesting is that while the downstream portion is relatively fragmented, the upstream portion tends to be more consolidated.

That's where the picks and shovels are located. This makes it easier for us to identify winners within the upstream segment that can hopefully compound over the medium to long term. I do have several companies I can share if you want to hear more about it.

[2:36] Rob Campbell
Definitely. I think I've heard your colleague, Peter Lampert, talk about this as AI enablers—further up the supply chain, but where their competitive positions are quite a bit stronger. If you wouldn't mind, let's dive into some examples of either sub-themes or specific companies.

[2:53] Wen Quan Cheong
We do have companies at higher weights in the portfolio. The first one—I'm really excited about this company all the time—is this company called TSMC.

[3:06] Rob Campbell
I've never heard about that company, TSMC, Wen. I've never heard you talk about that company before.

[3:06] Wen Quan Cheong
Let me enlighten you. [laugh]

TSMC has a near monopoly in manufacturing the most advanced chips used in AI servers. Because TSMC is the gatekeeper, plus you have a management team that is very conservative and very ROI driven, this led to a structural supply shortage. So as investors, we benefit both from pricing power as well as volume increases. I make this very simple because I think TSMC is quite well known. But I would like to share a second company.

In my opinion, this is not one of the usual companies that we typically historically invested in. This company is SK Hynix. Interestingly, we historically avoided this memory market in the past because it used to be more commoditized. Perhaps I'll share my thought process on how we think about this investment since we invested in it last year.

[4:09] Rob Campbell

Perhaps before you go there, can you take a moment just to explain—some of these memory stocks have just exploded over the last 6 to 12 months. Can you explain why all of a sudden they become such a focal point in the AI arena?

[4:23] Wen Quan Cheong

I would like to group this entire theme into this bucket called the capital cycle bucket. Coming out of COVID in the early 2020s, demand for consumer and enterprise electronics was very strong. Memory players continued to expect a structural upcycle and extrapolated the pandemic era demand too aggressively—both DRAM and NAND. Suppliers ramped up the capacity accordingly. But this quickly reversed in 2022 as post-COVID demand normalized.

That led to a reversal. There was inventory destocking across the downstream consumer electronics. And the result was a very sharp and sudden collapse in memory demand. So what happened after was that CAPEX reacted violently. Total memory CAPEX fell about 50% in 2023. DRAM CAPEX fell about 20%. NAND CAPEX fell even more, about 70%. So the industry remained slow and unusually disciplined all the way through 2024, 2025.

In many cases, due to weak balance sheets or perhaps the industry had also consolidated, at the trough, players such as SK Hynix and Western Digital all appeared close to financial distress. Suppliers in general were more disciplined, more cautious on utilization rates. Some even cut back utilization rates to ensure supply doesn't flood the market and kill prices and cut incremental CAPEX through that period.

But that changed quickly as the AI training and inference era now drove a surge in memory demand. That led to about two important step changes. The first step change: in early AI training and inference, most of the context memory called the key value cache—KV cache—on the graphic processing unit, the GPU high bandwidth memory, because it's the fastest option. But HBM, which is high bandwidth memory, is very expensive, limited, and extremely low yielding. So for example, the trade ratio is 3 to 1. That means that to make every HBM 3E chip, you need 3 DRAM chips. So it is very DRAM consuming.

The second step change was that to scale and optimize for AI inference workloads, which has been growing exponentially, the industry started moving to less active context memory out of the HBM into cheaper memory tiers, namely the CPU DRAM and increasingly the SSDs, which is your NAND basically. There are papers released recently—the most interesting one would be NVIDIA's inference context memory storage paper. I think that's a great paper to read, but it talks about all these. And the result is exponential demand for all three categories of memories.

Suddenly, the DRAM, the HBM and NAND all became critical bottlenecks, effectively eliminating the oversupply situation and turning it into an undersupplied market because the industry had cut CAPEX. CAPEX dried up for a couple years. Since then, pricing had moved sharply higher. DRAM is about roughly three to five times above its trough levels. NAND is about 1.5 to two times above trough levels. But most importantly, the DRAM and NAND suppliers are seeing outsized earnings upside because of the sector's very high operating leverage. I think that's key.

[8:32] Rob Campbell
I was going to ask because your initial description of this as a fairly commoditized industry had me thinking of other commoditized industries that perhaps those of us here in Canada are a little bit more

familiar with. We've certainly seen violent cycles with respect to capital expenditures getting really cut. But we've also seen in periods where pricing looks a lot more favorable, that CAPEX spending coming back. Is there something different about some of these memory stocks that with the huge demand that we're seeing today that a supply response might be more constrained?

[9:07] Wen Quan Cheong
Yes, great question. On that point, especially on supply response, I think that's where we focus most of our time. DRAM Greenfield CAPEX—the industry's Greenfield CAPEX—there's some here and there, but the major ones would come in late 2027. Now we're talking about even equipment shortages. You can't get the equipment because the other parts, for example, like logic, are facing a structural supply shortage as well and ramping up supply there, especially on the more advanced process technology. Your fabs are ready, your Greenfield fabs are ready. It would take time for equipment to come in and then to run those equipment.

But at the same time, we see demand structurally increasing at a very rapid pace. So it's a little different this time, but that being said, we remain conscious that memory at the end of the day remains a cyclical business. I think often demand has always been the primary swing factor that's harder to predict. For example, AI can be doing very well now, but how about consumer electronics or the pullback resulting in supply-demand imbalance? We think that's not going to be the case, but you never know.

This cycle is no different. I think the question is when and how long. But to my earlier point, I remain positive on the long-term structural demand driven by AI. What gives me comfort today is that despite the strong structural demand environment, the industry, for now, continues to exercise supply discipline, as I've mentioned earlier.

In the past, consumer electronics companies would sign these long-term agreements with memory manufacturers, memory suppliers. And these LTAs, long-term agreements, tend to be fixed on volume, but pricing is adjusted quarterly. This means that there's little economic visibility on whether you make a good return. Increasingly, what we are hearing—again, these are still more speculative rumors on the ground that's happening—is that hyperscaler customers tend to be less price sensitive in today's environment. And the new LTAs are potentially covering both the price and volume to ensure that these manufacturers earn a decent return on capital for their CAPEX, which means that there is now better economic visibility. Again, still early, but there's some changes there as well.

[11:47] Rob Campbell
I always find that fascinating. We saw that with some of the defense companies in Europe over the last couple of years, how just real shifts in supply and demand can actually have impacts on the nature of contracts, the nature of business models. That's very interesting.

So, theme number one, the picks and shovels of AI, a real focus on memory. And, you know, I mentioned that in our strategy, we've been invested in a number of these companies. So we have done

well, as they've done well over the last little while. I've heard that people are looking for, okay, well, what's the next bottleneck with respect to AI? It sounds like memory might still be one of them, but do you have a view on where future technological bottlenecks might be?

[12:24] Wen Quan Cheong
That's the million dollar question. That's where we are trying to focus some of our time. We have spotted some potential areas, for example, because TSMC is now running full steam ahead in the advanced process technologies, they are trying to clear some of the more mature technologies out and outsource these profitable contracts out to their subsidiaries, listed subsidiaries and such. So these are some of the areas that we are looking at. There are bottlenecks popping up.

We have another holding called King Yuan as well, which is in the chip testing business with a monopoly over testing NVIDIA's GPU chips. This chip testing is very critical because you don't want to buy an expensive system only to realize that it's broken because of one faulty chip. So this industry used to be more commoditized, you know, return on capital employed tend to be around say 8 to 10% from what I can recall. But there's an inflection point today because these AI chips require to operate with very high heat and you need a company that's able to test them at very high heat.

So the inflection point is that King Yuan has a proprietary burn-in testing technology, which is very important when it comes to testing AI chips.

[13:46] Rob Campbell
As the stakes get higher, as things get more expensive, as the cost of failure rises, you want to ensure that you're going with the best, hence the monopoly position that they have. Okay. So theme number one, AI. Theme number two, Wen, as you look out at the EM universe?

[14:01] Wen Quan Cheong
I think the second theme I would like to talk about is companies converting AI into ROIC.

[14:10] Rob Campbell
This is the big debate that's been ongoing for a couple of years right now—just the sheer amount of investment. Will there be a return on this investment?

[14:18] Wen Quan Cheong
If you were to look at the transcript of the most obvious one out there right now, it's the transcript of C.H. Robinson. C.H. Robinson is a global freight forwarder, logistics player, and shares a lot about how they have converted AI into ROIC. So the interesting thing is that they benefited on the revenue front. There are certain quotes in the earnings call that from what I can recall—quotes used to take 17 to 20 minutes or something along that line. And now it comes back in seconds, like 30 seconds or something. So they went from answering roughly say 60, 65% of requests to a 100%.

So that AI investment allowed them to generate more revenue. And even on the cost perspective, that

is a classic logistics pain point where you miss your less than truckload pickup. They turned it into an AI agent. And the result is that the freight moves a day faster, return trips to pick up the missed freight reduced by ~40%. I think north of 90% of the checking work is automated. So they save tons of time. That's service quality up, costs down at the same time, and generating extra revenues.

[15:35] Rob Campbell
I guess the question is, is this easy for all their competitors to do as well? Can they make the same investment, get the same result? And then the benefits don't necessarily accrue to the specific company, but perhaps to the customer.

[15:46] Wen Quan Cheong
Great point. It's still too early to say. I guess my take is that the ones that benefit the most now must be the most well-run and with the lowest tech debt and they can monetize ahead of others. But eventually, as you rightly pointed out, I think the market is competitive. People acknowledge it. Eventually competition should compete away the extra margins or profits.

That's a struggle that we have right now. And maybe to my earlier point, I mentioned that it's harder to find those outcomes rather than just investing in the AI picks and shovels themselves, which I think the base rates of those working out is higher in my opinion.

Then again, there are many companies in the EM space, I think, with the capability to do it and do it well. For example, we have a long-term investment in Bajaj Finance and they were one of the very early adopters of ensuring that their tech debt is lowest. They spend tons of money on their IT stack. They make sure that they have very granular data in order to score customers, give customers their loan approval quickly and yet make a decent profit.

So until now, we see it has been a long time since they made that investment. They are still reaping the benefits, but yes, eventually that compressed slightly and now it's just a different wave. So my thought is that if a company that's well-run uses this first, they will have an advantage for a couple of years and eventually peers would invest and narrow the advantage over time.

[17:24] Rob Campbell
Whenever I chat with you or members of your team, I'm always fascinated by the creative ways in which you approach your investment universe. On this topic of companies that might benefit from AI in terms of return on capital in a sustainable way, I'm curious how you're approaching this in terms of idea generation, given that this topic can impact pretty much every company in your universe.

[17:47] Wen Quan Cheong
We do the same screens like everyone else, but I think what's unique about our idea generation process is that we have the culture of allowing people the freedom to be creative in the idea generation process. I'll just share an example for myself. My work schedule is not packed at all. It's empty and I take a lot of time to read stuff from anywhere. Just be creative, read, know what's going on, be curious,

and then usually that leads to questions. Questions lead to more questions and then, hey, is there an opportunity in that area?

If I were to look back over the past few years, I believe a lot of our ideas are generated from that funnel of just being creative, just being curious. And we have a great team that is open, curious, willing to search, find stuff and generate ideas from all over the place. I just don't have a way to share that it's a very methodical, step-by-step approach on how we find stuff.

One thing that interests me lately, over the past year, is automating—of course with lots of vetting done—automating a lot of the more procedural stuff that we feel that AI can do a better job than a human and the humans should spend more time on things that add value like searching for ideas, finding out exactly what matters to make or break a thesis in a company, areas like that and spend more time there.

So, it has been a pet project of mine and a few others on the team. We're rolling out some interesting stuff. Of course, vetting through—it's man and machine working together—but the efficiency created, we reinvest the time in just being curious, going out there, searching, doing more trips, road trips, just out there to learn and generate ideas.

[19:38] Rob Campbell
Very good. Well, I know you guys are on the road a ton as well, pulling on those networks and pulling on those threads to see where they lead. The third theme, Wen, I think pertains to geopolitics.

[19:47] Wen Quan Cheong
I would call this theme the Great Supply Chain Reshuffle. I would classify it into two buckets: national security considerations slash U.S. tariffs that are driving a reconfiguration of the global supply chain, particularly in the strategic manufacturing sectors.

The second bucket is Chinese companies across products and services that are increasingly expanding overseas as the domestic economy comes under pressure.

More importantly is that their scale and deep vertical integration back home gives them significant cost advantage when scaling abroad. These are some of the areas that we have looked at.

We have recently invested in some companies, but one that I can share is this company called Actor Group. They benefit from the first bucket that I was talking about earlier. Actor Group is a specialized clean room engineering consultant. It's a very niche business, very high barriers to entry. For example, TSMC only has around three such people that they trust. Don't forget the fab costs billions of dollars and you don't want to save just some small amount that will cause the entire fab to have issues, costing lots of money.

Actor benefits from the relocation of the chip manufacturing to the U.S. and across Asia. Some of the

component manufacturing as well and all these require clean rooms. Actor is a TSMC supply chain engineering company plus the entire ecosystem. So they do all chip packaging, they do PCBs, they even do clean rooms for data centers.

They are benefiting from this trend, the first trend where manufacturing is being relocated to the U.S. Increasingly, we are also seeing China plus one strategy. So, supply chains are being diversified out of China into different parts of Asia and Actor has offices all around these regions. They have so much demand that it's labor crunch time. They can't find enough people to work on this.

[22:03] Rob Campbell
Can I ask you a question about the notion of just the pace at which you're seeing this supply chain reshuffle? And I will admit that my question is framed by—I read *Apple in China* over the holidays. And I think one of the takeaways I got from the book was just how dependent Apple is on China for the manufacturing and how difficult it would be should they want to further diversify their supply chain.

Is that in your view unique to Apple or are we seeing a pace of China plus one across the rest of the universe?

[22:40] Wen Quan Cheong
From where I see it, I think people are being forced to do it. Obviously, there are some inefficiencies at first. I'm just recalling conversation about TSMC. TSMC obviously when they operate in Arizona, it's slightly more inefficient in that way.

But the interesting part of it is that they were able to leverage AI and robotics to cut down manpower by half or so. I think humans are incredible because when faced with constraints, we will always find a solution to make things work. It might not be the best option at the start, but with enough grit and determination, I think we would see that happening.

I feel that it will happen at a quicker pace, especially with some of the incentives from the One Big Beautiful Bill tax cuts and such in the U.S. and that's encouraging more people to try their best to quickly shift manufacturing back to the U.S. But yes, along that theme, I think it will happen at a relatively quicker pace.

[23:46] Rob Campbell
On the second part, which was Chinese companies maybe not seeing a ton of growth prospects domestically, given the economic backdrop, looking overseas for growth opportunities. I've heard or I'm aware of some of the e-commerce players doing that, but your comment suggests that it's well beyond those that we see in the news in terms of adopting that strategy.

[24:09] Wen Quan Cheong
Yes, e-commerce is one big example. I think there are component manufacturers as well. If you look at China's profit versus their profit abroad, it's always like half of the profit abroad. I think some of the

step change comes from the fact that some of these Chinese manufacturers used to be white label manufacturers for larger MNCs [multi-national corporations].

During COVID, supply chains were disrupted. A lot of them were willing to test out some of the products by Chinese manufacturers, for example, and several companies have actually succeeded in entering some of the higher end component manufacturing and taking share from global leaders in the market. And the fact that the market is still very fragmented and they have a strong China vertical integration, lower cost base. They are taking all three segments, whether low, mid, high, and they are just growing quickly overseas. But that is one of the trends that I've observed.

[25:13] Rob Campbell
Three big things, it seems, as you're seeing them today for emerging markets. Picks and shovels of AI, return on invested capital associated with AI, and then just the great supply chain reshuffle. I will admit a pet peeve of my own, Wen, which is we have spent much of this podcast talking about technology and China.

They're super important parts of the emerging markets universe just by overall composition. But I've always found that conversations about EM that really just stop there are missing so much. Could I add a fourth theme? Just emerging markets is so much more than technology in China. And just curious for any thoughts you have on that.

[25:54] Wen Quan Cheong
For now, we have spent a lot of time on the themes that you've mentioned. Of course, we're not neglecting the rest of the emerging market universe, and we are spending time turning over stones there. And there are opportunities.

For example, I think we have recently added more to a couple of companies. Rasan [Information Technology] for example, is a dominant insurance aggregator in Saudi Arabia. And the insurance industry in Saudi Arabia is still very nascent. It's very blue ocean at this point.

FPT Digital Retail is a chain drug store in Vietnam. And they were the first to crack the code. Its competitors haven't. And the industry is very fragmented, full of mom-and-pop pharmacies taking share and growing organically in this segment. Long runway as well.

The third company is Hyundai Marine Solutions. It's one of the leading ship MRO maintenance repair businesses. So it's very recurring. They sell spare parts for Hyundai's engine.

We have not forgotten about all these other great, awesome companies in the rest of the world and in other sectors as well. And that's my personal goal to spend more time on these areas and build up a good inventory of names because you never know—all the interest and fund flows flowing to the first three themes, these companies might be left behind, and valuations might get more attractive. And we need the inventory list and be ready to jump at those opportunities as they present.

[27:24] Rob Campbell
Very good. Well, a goal that Wen, I think at this point, nearing midnight, you can leave to tomorrow. Many thanks for spending the time with us and look forward to seeing you again soon.

Thank you. Thanks for having me. Please leave a review on iTunes, which will help more people discover the Be Boring, Make Money philosophy. Thanks for listening.