

Linear Capital - 4Q22 Newsletter

Jan 25, 2023

Dear Friends & Partners,

Thank you for being supportive along the way. We are very glad to present this letter to summarize our quarterly activities in Q4, 2022.

Enjoy!

--- Observation and Insights ---

You all have learned from the news that China has opened doors since Jan 8 - no more QR health codes, no more required PCR tests on domestic travels, and no more quarantines on arrivals of cross-border trips. If we remember that as recently as mid-November, there were still very stringent Covid-Zero control policies. This has been a very dramatic change to the covid policy in a very short period.

And we welcome it.

I'd like to briefly share our views on why this happened and why it happened in such a dramatic way.

Why was the change?

Mainly 3 reasons - Covid-Zero policy is no longer working; society is running out of money to sustain the policy; people are running out of patience.

- Covid-Zero policy is no longer working. You can lock down a place for two months (just like what happened to Shanghai in April & May 2022) before returning to a temporal norm. You can NOT lock it down twice. And you cannot lock down ~70 cities with 300 million people (yes, I'm not joking) at the same time and expect society to still function normally. Even though you can fix the problem for now, but

then just two weeks later, Omicron spread comes back. What to do? Lock down again?

- Society is running out of money to sustain the policy. In a rough calculation, China has lost a net of 10 trillion RMB in 2022 up to November. There were many ripple effects reflected in quite a few social unrest events after the 20th congress of the Party. After all, it's the people and the governments, especially at the municipal/town levels, running out of money to sustain a lock-down intensive life. The economic challenge was nationwide in almost every city and countryside. Almost no business could be immune except the Covid vaccination or testing businesses, which though don't generate sustainable growth for the economy.
- People are running out of patience. If there is hope to be held, Chinese people are usually very patient and manageable. However, after 8 months of sporadic harsh lockdowns and many unreasonable containment measures and tragedies, people were losing patience and discontent grew. A few events that lead to outbreaks of furious street conflicts made the last straw to trigger the policy changes.

Deep at the core, it's the economic fundamentals at work - ROI of Covid-Zero Policy went from $\gg 0$ in 2020 & 2021 to $\ll 0$ in 2022. That drove the policy change.

Given the above analysis, we predict that even if the Omicron mutates to be more hazardous, China will NOT go back to the previous Covid-Zero policy.

Why has it changed so fast and so dramatically?

Contrarian to other critics, I think this is the ONLY way the Chinese government can successfully handle such a dramatic policy change - by quickly converting most of the people to be aligned with the new co-existing policy and thus not willing to oppose it.

Once you get Covid, which is now much less virulent, you will naturally no longer support the Covid-Zero policy since now you no longer benefit from it. Instead, you WILL voluntarily accept a policy that allows the "positives" to live peacefully. In order to let the policy stand through, the only way is to allow many people to get it as soon as possible. If it were a slow process, the majority "negatives" even though decreasing will still object the policy and the argument would bring in more chaos. The "fast" track is the most efficient way to win the majority "votes" in the shortest time. There is risk though, given that the virus is still mutating, but slow change based on worrying was not an option. I am not arguing that this is the right way or best way to do it, but just pointing out the rationale behind the way the government acted - it's probably the ONLY way the China system would allow it to proceed whether you like it or not. The government is very pragmatic with strong resolution about making the policy transition while doing a lot of catch-up work to reduce the fatality numbers.

Given the analysis above, the government will NOT do anything to slow down the contraction speed.

To report our situation, out of our 22 staff, we now have 20 people who have been positive with no serious cases, and all recovered well within 1-2 weeks. Now the team is back to being fully functional.

What does it mean to our productivity?

We expect work pace to improve quickly. There may still be 6-12 months before the grand economy recovers well, but at least now we can try and try hard. Really hard.

We thus put a keyword for 2023 for us to strive for - rebound. We don't know how high and how fast, but we know things will rebound, given the morale that's shown by our staff and many of our portfolio founders. We will be at least 2-3 times busier than last year, to say the least. With so many enforced lockdowns and quarantines, it's hard not to be. I even joked to our team members that we should expect to work 25 hours a day to recoup the lost 8 months since Apr 2022.

Regarding our investment pace though, we will slowly pick up in the next 6 months. We didn't push the full "STOP" button in 2022 and we won't step hard on the gas suddenly now. Recovery takes time. We will observe and monitor the changes in the founder space and pick up speed as we see fit. Finding and supporting the best quality tech founders to solve big problems we both care about is always the high bar of our work.

We sincerely welcome the total open-up policy and look forward to a new year full of energies and opportunities.

Our recap of 2022

I wrote a year-end open letter to recap the year 2022. I have attached the [English version](#) here as well. It's a hard year, but we took cautious optimism and did a decent amount of quality work. Only time can tell whether we cherry-picked the best gems at the lowest possible cost or not.

Some quick stats about our work in 2022.

- 15 new TS with US\$33M - average ticket size is \$2.2M, which was way lower than our average ticket size in 2021 (\$3M). We should expect things to change this year.

- 22 follow-on investments of US\$62M (5 of US\$10M by Main Fund V) - we prioritize supporting existing winners at different stages.
- Regarding exits, we did exit with about US\$8.5M in 2022, driving the DPI for USD Fund I to be around 0.77. We did receive offers regarding continuity funds for Fund I. However, after considering the pricing and market conditions, we dropped. We will continue to put in effort and wish to see more results on exit in 2023.
- Helped portfolio companies land 20 senior positions.
- Helped portfolio companies complete 8 rounds of new rounds financing, totally US\$45M.
- Helped portfolio companies publish 49 PR articles, by leveraging influential media channels and partners.
- Organized 39 events online and offline.

Key areas of attentions

We continue our 1+6 areas as we stated in our last letter. I just want to re-emphasize that we will increase attention on the best tech innovations for the New Energy and New Materials for many future applications.

We think these 1+6 areas are worth attention -

- Next generation infrastructure in data, AI & robotics.
- 6 New Smart Areas - Manufacturing, BioMed, Energy, SaaS (DaaS), Construction, Transportation. The "new smart" means the combination of data, AI & robotics to reinvest in the sector for categorical improvement in productivity.

People Plan

We started 2022 with the goal of hiring 30 people by EOY 2022. 2022 was a year of suddenness and stumbles, and we adapted - we discounted our hiring target and ended up with 22, with 9 new fresh hires and some let-go's. The biggest addition to our investment team was our new partner, Neil Zeng.

We will continue to hire up to $30 \pm 10\%$ by EOY 2023. If you see great potential tech investors, please don't be shy about referring to us.

Our over-due face-to-face annual meetings!

Now that China is open, we will want to see you face to face, as Zoom doesn't convey the

temperature of the air and the rhythm of our heartbeat while we are talking about how front tech is going to and will be changing the world. We plan to hold our over-due annual meeting in May or around, followed by a tech tour (open to our LPs and we will reserve some seats for our prospective partners) to visit 5-10 best tech companies to answer these questions - when we talk about the best frontier tech, what are we exactly talking about and who are those talents behind. More details will come later.

Wishes for tomorrow

We can only truly love a society after we have seen its imperfection, as it's part of the reality as it is. The society evolves to its greatness and weakness for a reason with its own history. It's our collective effort and responsibility to change it bit by bit to be a better place, with individual efforts focusing on where each shall contribute. We will keep doing what we do and hope by practicing our tech investments for "Frontier Tech, Frontier Productivity, Frontier Lifestyle", we will do our part. We may fail, but we keep trying.

Best regards,

Harry

--- Investments ---

We closed five new deals in Q4 2022. Please see below for details.

Company K

- The chemical industry is very large and traditional. After hundreds of years of development, the traditional manufacturing equipment and technics have been very matured. In the meantime, the technical iteration in the chemical industry is getting more and more limited. There are two major unsolved problems in the industry:
 - i. Process development and process amplification. It is one of the pain points and bottlenecks for the chemical industry under the traditional tank reactor (釜式反应) techniques, which is directly related to feasibility of mass production of new chemical products as well as length of R&D cycle, representing huge underlying economic value.
 - ii. Safety problems. The high risk in the traditional tank reactor is inevitable due to the characteristics of the chemical reaction. Accidents occur from time

to time.

- Company K is a continuous-flow chemical production solution based on micro-reactor. This new technology paradigm can effectively solve the problems of process development, process amplification and safety in the chemical industry.

Company MP

- Company MP uses SAG (Selective Area Growth) technology to solve the RGB integration problem on silicon base, reducing the area of single component and improving the display definition. Company MP uses 300MM wafer bonding technology to save the ultra-high cost of massive transfer in traditional LED. Meta-Photon's Micro-LED product is small and light, which can be applied to display screens of AR/VR, mobile phones, intelligent car cockpit, high-definition TV etc.

Company J

- Company J is a brain technology medical company providing digital therapy to treat amblyopia, low vision, visual field defects, and visual sub-health with its self-developed iAVT (i.e., Individualized and Adaptive Vision Training), and relevant medical equipment.
- Treatment for various visual function defects (e.g., amblyopia, myopia, low vision, presbyopia, etc.) is a huge market, accounting for tens of billions of US-dollars market cap in China. Company J's iVAT is more accurate, more efficient, more effective, safer, and no side effects compared to existing treatment technologies including optical correction, covering therapy, and optical drug therapy. Company J is effective for over 90% of amblyopia patients, while existing treatment technologies are effective in only two thirds of the cases. The treatment cycle offered by Company J is typically 1-2 months while the treatment cycle of existing treatment technologies can take 3 years.
- Company J has got a number of international patents protected by Patent Cooperation Treaty (PCT). In addition, Company J has already obtained Myopia Prevention and Control Class II Medical Device Certificate.
- Company J cooperates closely with many famous universities and scientific research institutions at home and abroad, such as Sun Yat-sen University, Wenzhou Medical University, Chinese Academy of Sciences, China Disabled Persons' Federation Auxiliary Center, OSU and so on.

Company F

- Company F is to create and empower businesses' seamless "SuperApp" transformation with smart commerce and customer engagement capabilities via proprietary CVM (Customer Value Management) and Hybrid SaaS solutions. Pre Covid-19 and in the last 2 years, most international businesses/organizations practiced business centric approach, rather than consumer centric. Other than self-owned core products, 90%+ legacy

business/organizations have no or limited data-driven, customer centric commercialization capability and strategy. Company F fills in the gap by utilizing their data-driven, customer centric commercialization capability, bringing new business opportunities.

Company A

- Company A is a high-tech startup company with dual headquarters based in Munich and Beijing. The founding team is a spin-off of the German Aerospace Center (DLR). DLR is the world's first organization to send intelligent force-controlled collaborative robots to space and perform complex tasks like human-machine collaboration.
- Company A is looking to push the boundaries of AI and robotics. Agile focuses on designing and manufacturing force-controlled robots with intelligent robot controllers based on deep learning, which can be applied in various areas, such as manufacturing, medical applications, power industry, smart agriculture and aquaculture, etc.
- Company A also provides intelligent system solutions, i.e., FIP (Flexible Intelligent Platform). FIP can fit incoming production lines for the new product model and demands on flexible combination of different lines through replaceable end actuators, modular tools and tooling. With self-developed software, FIP can upload new skills, change and adjust new production line layout to realize intelligent production, shorten the deployment time of robots significantly and reduce the difficulties and costs for system integration.

Highlights of Holdings

- [Mindverse](#) released news that the company raised Angel Round and Angel Plus Round. Linear, led the Angel Round, continued to support Mindverse in Angel Plus Round with Sequoia Seed Fund.
- [MonographDB](#) announced they have closed Angel Round, Linear led the investment.
- [Harbinger](#) was reported by a professional vertical media outlet about their new product, the medical ultrasound robots with remote control.
- [EYIMU](#) was listed in Agri Business Review magazine as the Top 10 Intelligent Agriculture solutions in Asia in 2022. The magazine published a feature story about EYIMU as well.
- [Sensors Data](#) rolled out their new Data Analysis Solution at their Data-Driven Online Conference.
- [Lean Digital](#), the manufacturing operations management system provider, participated in the making of The Guide of Digitalization for SMBs initiated by the Ministry of Industry and Information.
- [GuanData](#) hosted their online conference for the new generation of one-stop

intelligent data analyzing products.

--- Other things you may be interested in ---

We were awarded by quality media outlets.

- Linear Capital was awarded as [Top 7 Early Stage Investment Firm](#) as well as [Top 10 New Generation of Technology and Information Investment Firm](#) by Zero2IPO.com, the most recognized publisher and data analyzing platform in the Venture Capital area in China.
- Harry Wang, CEO and founder of Linear Capital, was named as the [Top 10 Best Investor in Early Stage Investment](#) by Zero2IPO.
- We rolled out two videos to talk about our investment stories, featuring [Monograph DB](#) and [Yrobot](#). The video is called the L-Series. We planned to make it a series to tell what we think about technology investment as well as helping our portfolios to get more exposure at the right time.
- Harry Wang, our CEO and founder, published [a year-end open letter](#), sharing Linear's activities in 2022, our takeaways as well as our vision for 2023.
- Linear hosted many events to keep in touch with our portfolio companies as well as reach out to audiences like students, entrepreneurs and talents in tech companies.
- Linear Academy, our startup knowledge sharing platform, [hosted an invite-only workshop](#) collaborated with the Amazon AWS team in China. Our portfolio founders who enrolled in practiced the "Working Backwards Philosophy" from Amazon AWS team.
- Linear Academy [invited an ex-founding team member at OnePlus](#) to share their experience from zero to one, especially focusing on the brand building part which OnePlus was well known for.

Best regards,

Linear Team