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AXTI may be on the brink of collapse:

Chinese headlines say its local IPO has failed. Its revenue is plummeting and creditors are at the door

The Chinese reports AXTI doesn't want you to see

- ▶ AXT Inc (AXTI), a manufacturer of germanium, gallium arsenide, and indium phosphide (key ingredients for LED and semiconductor chips) saw a 140% increase in share price in February, following management's enthusiasm about AI opportunities.
 - ▶ AXTI is listed in the U.S., but its business operations are almost all conducted through a subsidiary in China. AXTI wants to list that subsidiary in Shanghai to capture new financing. **But the listing prospectus attracted unexpected scrutiny and unveiled a plethora of undisclosed issues in China. Our research has found those issues are only the tip of the iceberg.**
 - ▶ The listing vehicle raised \$49 mln from private investors at a sky-high valuation in 2020. AXTI expected to capture much more investment at the time of the IPO. But it has been 18 months since the last IPO update, and
- U.S. investors haven't been told that the IPO has apparently been blocked by Chinese regulators.**
 - ▶ In March 2023, Chinese press reports said: AXTI's subsidiary, Tongmei, saw its **"IPO blocked: The U.S. semiconductor 'shell company' was split off for [a local] listing, related-party transaction prices were unfair, and the authenticity of company performance was questionable."**
 - ▶ We have uncovered a deluge of reasons why Chinese regulators potentially blocked this IPO, including **falsifying data, tax evasion, improper storage of hazardous chemicals, suspicious related-party transactions, IP litigation, and defaulting on wages to employees.**
 - ▶ **Sales have collapsed by over 50%, and there is no reason to believe that AXTI can revert to its formerly reported margins and sales numbers, despite the claims that they make about AI demand.**

- ▶ **We learned from interviews with former managers in China that production volume is down by at least 50% and sometimes up to 90%. They said production efficiency has also plummeted.** Formers we spoke with see no end in sight to the low production.
- ▶ When AXTI applied for its Chinese IPO, **related-party purchases and sales were over 50% of revenue.** Chinese regulators have expressed deep concern about those transactions.
- ▶ **AXTI's production has been halted more than 10 times for environmental problems over the last five years.** Chinese reporters depict this behavior as "puzzling" and point out that the company's attitude toward regulation is almost one of disregard. There is no clear pathway for AXTI to fix these issues and get the Shanghai IPO, which is needed to fund further expansion.
- ▶ **Among the environmental woes: a government report points to arsenic contamination in the groundwater. We also learned in interviews of a 2020 fire at the Beijing factory that has not been disclosed to U.S. investors. That and the use of hazardous chemicals forced AXTI's factory to move half its production to facilities 300 miles away, meaning production involves shipping materials on a 7-plus hour truck ride.**
- ▶ **We show that the \$99.3 mln at cost in buildings reported by AXTI is very unlikely.** The buildings consist principally of a ramshackle factory in Beijing and a lot of dormitories in a tiny rural county in Liaoning.
- ▶ **We think AXTI's inventories—which have soared to 1.3 years while sales fell - may not be there or may be dramatically overstated in value.**
- ▶ **We have also uncovered potential nefarious activities related to the IPO by AXTI's Chinese underwriter, Haitong Securities. Two related parties of Haitong Securities invested in the AXTI IPO, potentially to drum up interest and inflate the orderbook.** Not only has Haitong Securities had 16% of its IPOs withdrawn, but it has been sued numerous times and warned by the CSRC. Haitong was forced to disgorge ¥28.6 mln in illegitimate profit and fined ¥86 mln.
- ▶ If the IPO were to officially collapse, **AXTI would owe more than \$49 mln to Chinese investors. AXTI cannot handle this,** as the company has only \$40 mln in unrestricted cash and short-term investments. AXTI also had \$53 mln in short-term debt at end 2023 and limited operating cash flows for the last three calendar years.
- ▶ These reporting gaps are unsurprising, given that **AXTI's CFO and audit chair, Gary Fischer, was previously banned**

for 5 years from acting as an officer of a listed company.¹

While Gary Fischer was a board member of Integrated Silicon Solution, he was charged by the SEC for options fraud for backdating. He settled with the SEC and repaid over \$500,000 in profits and penalties. **Fischer was previously CFO of ESS, where two credible activist investors alleged undisclosed related-party transactions.**

- ▶ **A Chinese export ban that took effect in December 2023 could affect half of AXTI sales.²**

- ▶ The company has had plenty of troubles in its 20-year past: **in 2004, AXTI settled a lawsuit that alleged “material misrepresentation concerning AXT’s operations and performance.”³**
- ▶ **AXTI’s business is in commodities. It is low-margin and cyclical.** The company competes with large conglomerates like Sumitomo and is susceptible to even the slightest competition. We even see in AXTI’s filings that a former employee copied AXTI’s process and started his own company to compete.

1 See SEC settlement agreement, <https://www.sec.gov/litigation/litreleases/lr-20219#:~:text=ISSI%2C%20without%20admitting%20or%20denying,13%20and%2014a%2D9%20thereunder>.

2 See the article, “Focus on Beijing Tongmei Science and Technology Innovation Board IPO: nearly 50% of revenue comes from gallium and germanium related items, which are greatly affected by export control policies,” July 11, 2023 in China Securities Journal https://www.cs.com.cn/ssgs/gssd/202307/t20230711_6355067.html

3 See AXT Inc. Securities litigation 2004: <https://securities.stanford.edu/filings-case.html?id=103287>

Problems have rained down on AXT Inc. (AXTI) in China – where the company has nearly all its operations, but U.S. investors know little of the peril. ***AXTI sales have crashed, production plummeted, and environmental problems forced the company to move hazardous chemical operations to a rural county 300 miles from the factory.***

AXTI raised about \$49 mln from private Chinese investors who thought they could cash in on a Shanghai IPO of AXTI’s main operating subsidiary. But now sales are just 48% of what they were in the IPO prospectus,⁴ and operational problems plague AXTI’s Chinese operations.

4 The latest period in the prospectus was H1 2022, when company revenues were reported at \$79.1 mln. In the second half of 2023, sales were reported at \$37.8 mln.

The sales collapse plus multiple operation problems stranded the Chinese subsidiary's IPO attempt. That gives Chinese investors an out. They invested at a valuation of \$673 mln, over 3x that of the parent company's current U.S. market value. **A "gamblers clause" in the IPO documents gives the private investors the right to demand that AXTI return their \$49 mln.** With unrestricted cash and short-term investments of \$39.9 mln as of December 31, 2023, \$52.9 mln in short-term bank loans, and limited operating cash flows, we do not think AXTI can survive without a substantial dilutive equity issue in the U.S.

A confusing network of related-party companies supply AXTI with raw materials, lend money, issue dividends, sell AXTI bits of equity, and swap equity among themselves, mostly in a rural Chinese county far from the U.S. offices of the company's highly questionable auditor and CFO. **We question whether the U.S. executives have the ability from Silicon Valley to track operations at 12 subsidiaries, three equity-investee suppliers, 25 related-party companies, and many more Chinese entities that are loosely affiliated with AXTI.**

The U.S. executives may prefer to keep one eye closed. The founder, the CFO, and at least one director have troubling histories: the CFO was charged with options fraud, the founder has been involved in multiple lawsuits, a board member was CFO of a company when it settled fraud charges, and the underwriters of both Chinese and U.S. listcos have been subjected to enforcement actions by exchange regulators. A legal opinion on the Chinese IPO offers the lukewarm comment: "AXT has not committed any major illegal acts in the past three years."⁵

We interviewed three former employees of AXTI China, who all said that production since early 2023 has been at no more than 50% of capacity, and a glut of competition means that sales will not recover. Chinese export and purchase bans on the materials AXTI trades in add a layer of geopolitical challenge that the company may not survive.

AXTI is a commodities company that engages in AI washing

AXTI manufactures ingredients for electronic items such as LED and semiconductor chips, including those used for AI. The company was founded in 1986 and went public in 1998, riding on the tech wave.

In February 2024, AXTI claimed that indium phosphide demand for AI chips could be the new driving force of the AI revolution, and AXTI shares skyrocketed 140%. We think investors are in for disappointment, as we uncover what appears to be

⁵ "Legal Opinion from King & Wood Mallesons on Initial Public Offering and Listing on the STAR Market of Beijing Tongmei Xtal Technology Co., Ltd." Page 3-3-1-97, <https://www.sec.gov/Archives/edgar/data/1051627/000155837022011572/axti-20220801xex99d5.htm>

a short-term share-pump scheme in this company’s 20+ year history of being a small-time, journeyman materials supplier.

On AXTI’s February 22, 2024 Q4 2023 call, ATXI management hawked the AI dream:

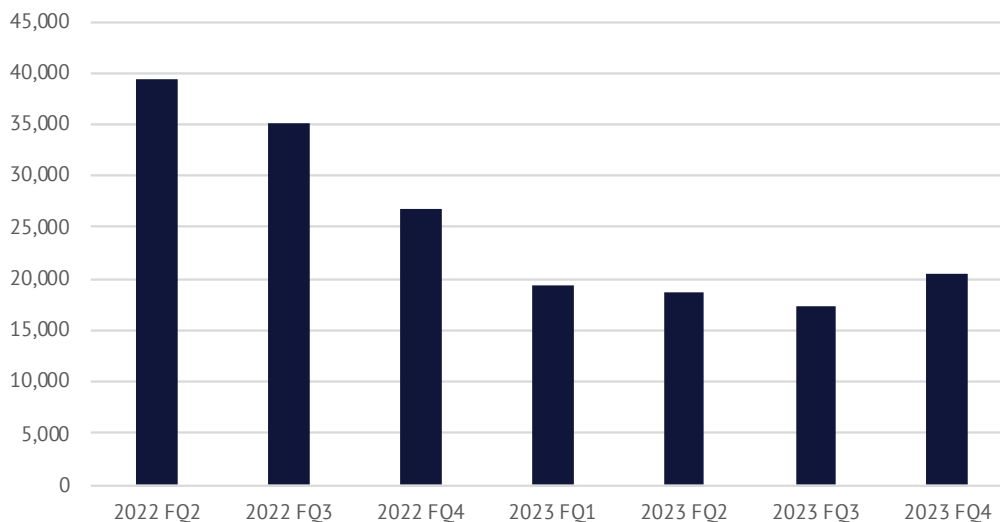
We view AI as an emerging new application for indium phosphide that will develop in exciting ways over the coming years.

Morris Young

And what I think is surprising to us, I think, is the AI application. It first started something like 6 months ago, and we thought it was -- well, first, the customer wouldn't tell us it's AI. And then they come back again and they want more in Q4, and they now give us yet another bigger order in Q1. So cumulatively [indiscernible], it's in the millions of dollars of range. So -- and this time, they also admit to us that it's AI-related.

Yet AXTI sales have been collapsing.

AXTI revenue by quarter (\$,000 USD)



Source: AXTI disclosures/Capital IQ

AXTI’s China IPO pipe dream is blocked, but AXTI has said nothing

AXTI is basically an empty company, with virtually all operations occurring in China via the operating subsidiary Beijing Tongmei Xtal Technology Co. Ltd. In late 2020, AXTI disclosed that it had begun the process of listing Tongmei on the Chinese STAR exchange.

On November 16, 2020 we announced a strategic initiative to access China's capital markets by beginning a process to list shares of Tongmei in an initial public offering (the "IPO") on the STAR Market, an exchange intended to support innovative companies in China. We formed and founded Tongmei in 1998 and believe Tongmei has grown into a company that will be an attractive offering on the STAR Market. To qualify for a STAR Market listing, the first major step in the process was to engage private equity firms in China ("Investors") to invest funds in Tongmei. By December 31, 2020, investors which consists of 10 private equity funds had engaged with Tongmei for a total investment of approximately \$48.1 million. (The currency used in the investment transactions was the Chinese renminbi, which has been converted to approximate U.S. dollars for this report.) The remaining investment of approximately \$1.5 million of new capital was funded in early January. Under China regulations these investments must be formally approved by the

Source: 2020 10K

AXTI has been optimistic about an imminent CSRC approval since October 2022; it is now April 2024.

Pursuant to the Capital Investment Agreements with the Investors, each Investor has the right to require AXT to redeem any or all Tongmei shares held by such Investor at the original purchase price paid by such Investor, without interest, in the event the IPO fails to pass the audit of the Shanghai Stock Exchange, is not approved by the Chinese Securities Regulatory Commission ("CSRC") or Tongmei cancels the IPO application. The aggregate redemption amount is approximately \$49 million, subject to the foreign exchange rate variable at time of redemption.

Tongmei submitted its IPO application to the Shanghai Stock Exchange in December 2021 and it was formally accepted for review on January 10, 2022. The Shanghai Stock Exchange approved the IPO application on July 12, 2022. On August 1, 2022, the CSRC accepted for review Tongmei's IPO application. The STAR Market IPO remains subject to review and approval by the CSRC and other authorities. The process of going public on the STAR Market includes several periods of review and therefore is a lengthy process. Subject to review and approval by the CSRC and other authorities, Tongmei hopes to accomplish this goal in the coming months. The listing of Tongmei on the STAR Market will not change the status of AXT as a U.S. public company.

Source: AXTI 2023 10K

STAR Market Listing Update

On January 10, 2022, AXT announced that Beijing Tongmei Xtal Technology Co., Ltd. ("Tongmei"), its subsidiary in Beijing, China, submitted to the Shanghai Stock Exchange (the "SSE") its application to list its shares in an initial public offering (the "IPO") on the SSE's Sci-Tech innovAtion boARd (the "STAR Market") and the application was accepted for review. Subsequently, Tongmei responded to several rounds of questions received from the SSE. On July 12, 2022, the SSE approved the listing of Tongmei's shares in an IPO on the STAR Market. On August 1, 2022, the China Securities Regulatory Commission (the "CSRC") accepted for review Tongmei's IPO application. The STAR Market IPO remains subject to review and approval by the CSRC and other authorities. The process of going public on the STAR Market includes several periods of review and, therefore, is a lengthy process. Subject to review and approval by the CSRC and other authorities, Tongmei hopes to accomplish this goal as early as Q4 2022. AXT has posted a brief summary of the plan and the process on its website at <http://www.axti.com>.

Source: AXTI Earnings Release, October 27, 2022

Chinese regulators asked a lot of questions about the original submission, and slowly, AXTI responded. The last submission was in August 2022. Now the process has stalled. ***U.S. investors have been told nothing, but several press outlets in China have reported that the IPO application has been blocked.***

北京通美晶体IPO受阻：美股半导体“壳公司”分拆上市，关联交易价格显失公允，业绩真实性存疑

2023年03月14日 15:41 万点研究



Sina: March 14, 2023

Beijing Tongmei Xtal's IPO blocked: The U.S. semiconductor "shell company" was split for listing, related-party transaction prices were unfair, and the authenticity of company performance was questionable

Source: Sina Finance⁶

This puts AXTI in a risky position. If the listing is formally rejected, AXTI will have to repay private investors the \$49 mln that they put into the company in 2020-2021.

The \$49 mln investment contained what the Chinese press called a “gambling clause”: the money was to be repaid if Tongmei failed to IPO by the end of 2022. But there was an extension: if either the China Securities and Exchange Commission or the Shanghai Stock Exchange accepted the applications, the timing would be extended until there is a formal rejection or until AXTI withdraws it. The Shanghai Stock Exchange accepted the application in January 2022, but the IPO is still in limbo.

AXTI had \$39.9 mln in unrestricted cash and short-term investments at the end of 2023 and \$12.4 mln in restricted cash. The company gained generated just \$3.4 mln in operating cash flows in 2023. Short-term bank debt was already \$52.9 mln at end December 2023. **We believe that a redemption cash call of \$49 mln could destroy the company.**

6 Sina Finance March 14, 2023 https://finance.sina.com.cn/cj/2023-03-14/doc-imykvkrz5216461.shtml?finpagefr=w_105&cref=cj

The company’s STAR IPO prospectus says that two-thirds of the money to be raised will go to working capital needs. If there is no IPO, what happens to those needs?

Chinese press reports reveal a multitude of other problems that were not fully disclosed to U.S. investors.

Problem No. 1: Tongmei production has been halted >10x for environmental infractions

Tongmei’s production process uses toxic chemicals such as sulfuric acid, arsenic, acetic acid, ammonia, and sodium hydroxide. Production was reportedly halted more than 10 times by regulators in a five-year period. The company has been repeatedly fined.



The Beijing Public Security Bureau imposed a fine on Tongmei in 2020, saying “Beijing Tongmei failed to disclose the types, quantities, and throughput of explosive precursor hazardous chemicals by the required deadline.”⁷

In 2018, the Beijing Environmental Bureau ordered Tongmei to correct violations.

In 2019, the Beijing Emergency Management Bureau reported safety violations at Tongmei.

⁷ <https://gaj.beijing.gov.cn/wsgs/sgszl/xzcfgs/>

The screenshot shows the official website of the Beijing Emergency Management Bureau. The header includes the bureau's name in Chinese and English, a search bar, and navigation links for 'Home', 'News', 'Publicity', 'Services', 'Interaction', and 'Education'. The main content area displays a report titled '通州区张家湾镇北京通美晶体技术有限公司存在安全隐患' (Safety hazards exist at Beijing Tongmei Xtal Technology Co., Ltd. in Zhangjiawan Town, Tongzhou District). The report text, dated May 23, 2019, describes a public report of safety hazards including flammable materials, exposed hydrogen pipelines, and hazardous chemicals. It states that the hazards have been rectified after an inspection.

In March 2019, the masses reported that Beijing Tongmei Xtal . . had stacked machines, foam, paper shells, and other flammable materials in the factory, hydrogen pipelines were installed exposed on the outer wall, and a large number of hazardous chemicals were stacked at the work site. . . . Law enforcement officials ordered the company to rectify the situation.

A November 2021 environmental report detected excess levels of arsenic in the soil and groundwater. The company said that the problems did not necessarily results from their manufacturing process. The environmental scientists said: “[It] cannot be ruled out that the problem may be related to the impact of enterprise production. Therefore, it is recommended that the enterprise continue to strengthen environmental management during the continued production process, especially for key facilities and key areas that are of concern for hidden danger investigation.” ***This raises serious environmental governance concerns for U.S. funds holding this stock.***

Hazardous chemicals in the groundwater

9.2. 建议

本企业 2021 年度土壤中污染物检测浓度均未超过对应标准值，但个别土壤点位土壤中砷的检测结果已超过一类用地筛选值；地下水部分重金属超过地下水 IV 类限值，部分常规指标超过 V 类限值，但超标污染物与企业生产活动无关。根据历年监测数据可知，砷的检出浓度逐年有轻微波动，可能与采样和检测过程、

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地下水自然波动等有关，但不排除可能与企业生产影响有关，因此建议企业在后续生产过程中持续加强环境管理，特别是对于隐患排查关注的重点设施和重点区域附近加强监管，并持续开展自行监测工作，观测污染物浓度变化情况。|

9.2. Recommendations

The detected concentrations of pollutants in the soil of our company in 2021 did not exceed the standard values, but some test results of arsenic in the soil at the site have exceeded the screening value; some heavy metals in the groundwater have exceeded Class IV limit . . . it cannot be ruled out that it may be related to the impact of enterprise production.

In 2021, Tongmei was fined for exporting dangerous chemicals without a permit, but Customs does not publicly report the amount of the fine or the specific infraction.

Beijing Customs database of penalties



Source: Beijing Customs⁸

8 http://gongbei.customs.gov.cn/beijing_customs/434756/434804/2941702/3412592/3892317/434813/hgjyxyzcf/db867e12-2.html

Baidu's IPO Views ran an article calling Tongmei's production "illegal."

Beijing Tongmei IPO: Unreasonable back wages owed to employees, repeated illegal production, and failure to change despite repeated admonitions

北京通美IPO: 无故拖欠员工工资, 多次违法生产且屡教不改

科创板上市委 2022年第59次审议会议将于7月12日召开, 审议北京通美晶体技术股份有限公司。北京通美是一家全球知名的半导体材料科技企业, 主要从事碳化硅衬底、磷化镍衬底、锗衬底、PBN 材料及其他高纯材料的研发、生产和销售。

多次违法生产且屡教不改 **Repeated Illegal Production, Yet Refusing to Change**

北京通美在生产中会使用硫酸、乙酸、氨水、氢氧化钠等30余种危险化学品, 属于环境风险企业。作为高危生产企业, 北京通美本应当严格遵守法律安全生产, 但事实并非如此。在过去的5年间, 北京通美多次由于多次违法生产被环境保护局勒令停产整顿, 但北京通美似乎没有意识这一违法行为的严重性, 在被处罚后依然接二连三地违法生产! 这一行为着实令人费解!

Beijing Tongmei uses 30+ dangerous chemicals . . . Tongmei ought to abide by environmental regulation, but this is not the case. In just the past five years, Beijing Tongmei has been ordered by the Environmental Protection Bureau to cease production multiple times due to illegal production.

2017年9月通州区安全生产监督管理局对北京通美作出了行政处罚1.8万元, 主要原因是北京通美未为从业人员提供符合国家标准和行业标准的劳动防护用品, 违反了《中华人民共和国安全生产法》第九十六条第(四)项。

2018年7月31日北京市环境保护局对北京通美位于北京市通州区工业开发区东二街4号的

Source: Baidu IPO View <https://baijiahao.baidu.com/s?id=1738055592526660613&wfr=spider&for=pc>

AXTI's China-based problems with repeated violations of environmental regulations have been widely reported in the press.

从2017年至今北京通美有十次由于违法生产被环境保护局勒令停产整顿! 违法生产且屡教不改的背后可以看出北京通美对待法律法规的态度几乎到了无视的地步!

From 2017 to 2022, production at Beijing Tongmei has been halted more than 10 times due to illegal production!

<https://baijiahao.baidu.com/s?id=1738055592526660613&wfr=spider&for=pc>

AXTI did not disclose these incidents. In its Chinese IPO prospectus, the company generalized the subject and claimed it had no issues with pollution.

During the reporting period, the Company has no major environment pollution accidents, and is not subject to major administrative punishment related to environment protection.

Source: AXTI 8K January 10, 2022, Page 1-1-169

A former production worker at Tongmei in Beijing said that AXTI **was required to move its raw chemicals out of Beijing in 2020**, a key reason why the company closed down one production line and moved dangerous chemicals to the anything-goes region of Kazuo in Liaoning.

The engineer said the company experienced a major fire in 2020, and after that, many employees left.

Refusing to rectify repeated environmental violations

Tongmei seemed unfazed by the disclosures. While continuing non-compliant production, the company was fined by regulators for failing to implement basic factory safety protocol, including, according to Chinese press reports:

1. Proper storage of flammable material and chemical products,
2. Informing employees of hazards and possible accidents at the factory,
3. Organizing regular emergency drills.

定。北京市环境保护局责令北京通美停止违法行为，建立环境安全隐患排查治理制度开展环境安全隐患排查治理工作，建立隐患排查治理档案。

The Beijing Environmental Protection Bureau ordered Beijing Tongmei to cease illegal production, establish an environmental safety hazard inspection process, investigate the management of environmentally unsafe products, and provide investigation findings.

责令北京通美晶体技术有限公司改正违法行为 决定书 ([2018]Y4号)
来源：监察总队 时间：2018年09月06日

当事人名称：北京通美晶体技术有限公司

法定代表人：莫里斯·杨

地址：北京市通州区工业开发区东二街4号

9/6/2018:
Resolution ordering
Beijing Tongmei Xtal
Co. Ltd. to rectify its
illegal activity

Source: Inspection team of the Beijing Environmental Bureau, reported by Baidu July 11, 2022 <https://baijiahao.baidu.com/s?id=1738055592526660613&wfr=spider&for=pc>

Several government notices indicate that Tongmei was still out of compliance with safety regulations in 2021.

The screenshot shows the website of the Beijing Emergency Management Bureau (北京市应急管理局). The main content is a safety inspection report for Beijing Tongmei (北京通美晶体技术股份有限公司) dated 2021-10-28. The report includes the following details:

被检查单位或个人名称:	北京通美晶体技术股份有限公司		
检查时间:	2021-10-28	出具检查书的部门:	北京市应急管理局
执法检查文书编号:	(京)应急理记(2021)执00561号		
是否双随机:	是		
执法结果:	不合格		

The report is titled "北京通美晶体技术股份有限公司" and "Beijing Tongmei 10/28/2021". A red box highlights the "不合格" (Not up to standard) result.

https://yjgli.beijing.gov.cn/art/2021/10/28/art_7476_42460.html

We wonder if AXTI's production process may be fundamentally unviable.

Problem No. 2: Plummeting production

We learned from interviews with former managers that **production volume tumbled starting in early 2023 to an average of about 50% previous levels and in some months, just 10%**. The Chinese market became glutted with product, and customers demanded price cuts from AXTI China. "When the market goes bad, [the customer] says: 'We won't buy unless the price is lowered. We have a lot of inventory anyway.' It's a vicious cycle, forcing us to lower prices."

One interviewee told us that production efficiency in Liaoning, where the company blends gallium and arsenic and grows crystals, has dropped by two-thirds in two years. **"The company's yield rate is not very good now," the former production leader said. "In the past, probably in 2022, the yield was 40-60%. Now the lowest is only in the teens and usually between 10-20%. When yield is high, it is only 30%."** The former employee was speaking of the proportion of arsenic and gallium to gallium arsenide crystals.⁹

⁹ See an explanation of gallium arsenide's manufacture and uses here: <https://www.waferworld.com/post/everything-need-know-gaas-wafers#:~:text=GaAs%20crystals%20can%20be%20created,is%20the%20Bridgman%2DStockbarger%20technique.>

Problem No. 3: The company is being sued for allegedly stealing IP

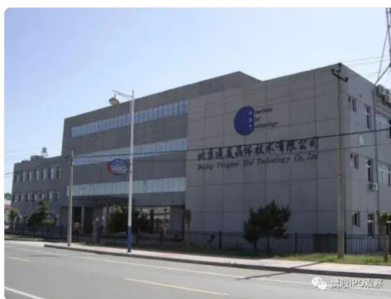
An allegation against Tongmei of IP infringement is reportedly among the issues blocking an IPO. A company called Shandong Guojing reportedly filed suit against Tongmei in 2021 for allegedly stealing technology.¹⁰

Beijing Tongmei IPO Blocked?

独家：北京通美晶体上市受阻，“山东国晶被侵犯商业秘密案”完成侦查等待公诉

财经IPO观察 2023-03-14 11:10 山东

经济导报记者 石亮亮



<https://baijiahao.baidu.com/s?id=1760311197609191094&wfr=spider&for=pc>

March 14, 2023: Exclusive: Beijing Tongmei Crystal's listing is blocked, "Shandong Guojing's trade secret infringement case" has been investigated and is awaiting public prosecution

Problem No. 4: Fishy related-party sales

At the time of the IPO application, **related-party sales and purchases made up just under 50% of revenue**. The purchases appear to have occurred at sweetheart prices. **AXTI marked up products from the subsidiaries by as much as 62%, according to the company's own disclosures.**¹¹

Tongmei price for substrate materials 2019-2021 RMB

Item	Sales to AXT	AXT External sales	GM for Tongmei
Gallium arsenide substrate	¥391	¥377	3.8%
Indium phosphide substrate	¥483	¥1,275	-62.1%
Germanium substrate	¥428	¥431	-0.6%

Source: AXTI 8K August 1, 2022 page 1-1-4

10 See this Chinese-language report: <https://www.163.com/dy/article/IHC9Q4500519WTTG.html>

11 See page 1-1-4 of the AXTI 8K published August 1, 2022, which can be accessed [here](#).

Chinese reports question the legitimacy of related-party pricing and financial accounts, and the margin improvements have drawn the attention of securities regulators.

关于规范并减少关联交易的承诺函

Letter of Commitment on Standardizing and Reducing the Related Transactions

4、 保证不利用关联交易非法转移发行人的资金、利润或从事其他损害发行人及其他股东、债权人利益的行为。

2/10/2023 12:01 PM 译文-10.22_、475-关Promise to
manage related party transactions properly.docx Folder-

1 of 3

Response to Chinese regulators, included in AXTI 2023 10K Exhibit 10.22

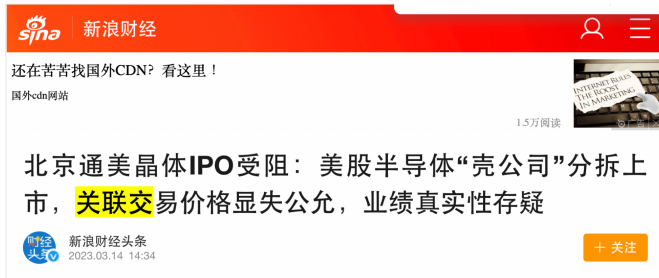
From 2018–2021 related-party sales from Tongmei to AXT averaged just under 50% of Tongmei’s revenues. In the same period, gross profit rose some 27%. Tongmei claims changes in margin are due to “business switches.”

AXTI reports that it was justified in charging a mark-up because of various expenses.

To sum up, the main reasons for the difference in revenue and net profit between the Company and AXT during the reporting period lie in: (1) AXT undertook the function of overseas sales, who set prices independently on the market with a certain margin; (2) AXT’s financing in the United States, maintaining its listing status and paying relevant expenses, among others, led to its higher period expenses in the consolidation scope; (3) the profit and loss of AXT on equity investment in relevant companies led to the difference in its investment incomes from the Company; (4) the difference in accounting estimates and policies between China and the United States affected relevant accounting treatment;

Source: AXTI 8K April 18, 2022, Page 8-1-1-84¹²

12 <https://d18rn0p25nwr6d.cloudfront.net/CIK-0001051627/9b60fd0f-e77f-43ac-898e-292079b4bdd6.pdf>



Beijing Tongmei Crystal's IPO blocked: The U.S. semiconductor 'shell company' was split off for a listing, related-party transaction prices were unfair, and the authenticity of company performance was questionable.

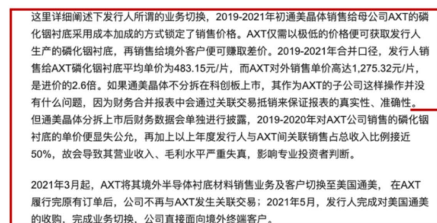
Thanks to related – party transactions, Tongmei’s gross profit margin was 19.43%, 25.68%, and 34.53% respectively, displaying an upward trend. Tongmei claims that margin improvements are due to “product upgrades, process streamlining, and cost controls.” However, the sharp increase in profit margins have drawn the attention of the China Securities Regulatory Commission, prompting Tongmei to provide detailed analysis.

受关联交易影响，报告期内，公司综合毛利率分别为 19.43%、25.68%和 34.53%，整体呈现上升态势。发行人虽表示这主要得益于产品升级、工艺改进、丰富产品类型、加强成本控制等经营水平的全方面提高。但短期内毛利率的大幅提升引起了证监会的关注，并要求发行人给出详细分析。

Source: Sina Finance, March 14, 2023¹³

Chinese articles question the profit margins:

“What is noteworthy,” says a research note by a sell-side shop called Ten Thousand Points research, “is that Tongmei’s gross profit margin jumped from 40% to 51.68% in just three years. **Large increases in profit margins are usually due to major technological advancements or product upgrades. However, this does not seem to be the case for Tongmei.**”



In 2019-2021, the indium phosphide substrate sold by Tongmei Crystal to its parent company AXT was sold on a cost-plus basis. AXT only needs to obtain the indium phosphide substrate produced by the issuer at a very low price and then sell it to overseas customers to earn the price difference. ... [T]he financial data of Tongmei Crystal will be disclosed separately after the spin-off and listing, and the unit price of the indium phosphide substrate sold by AXT in 2019-2020 is obviously unfair .

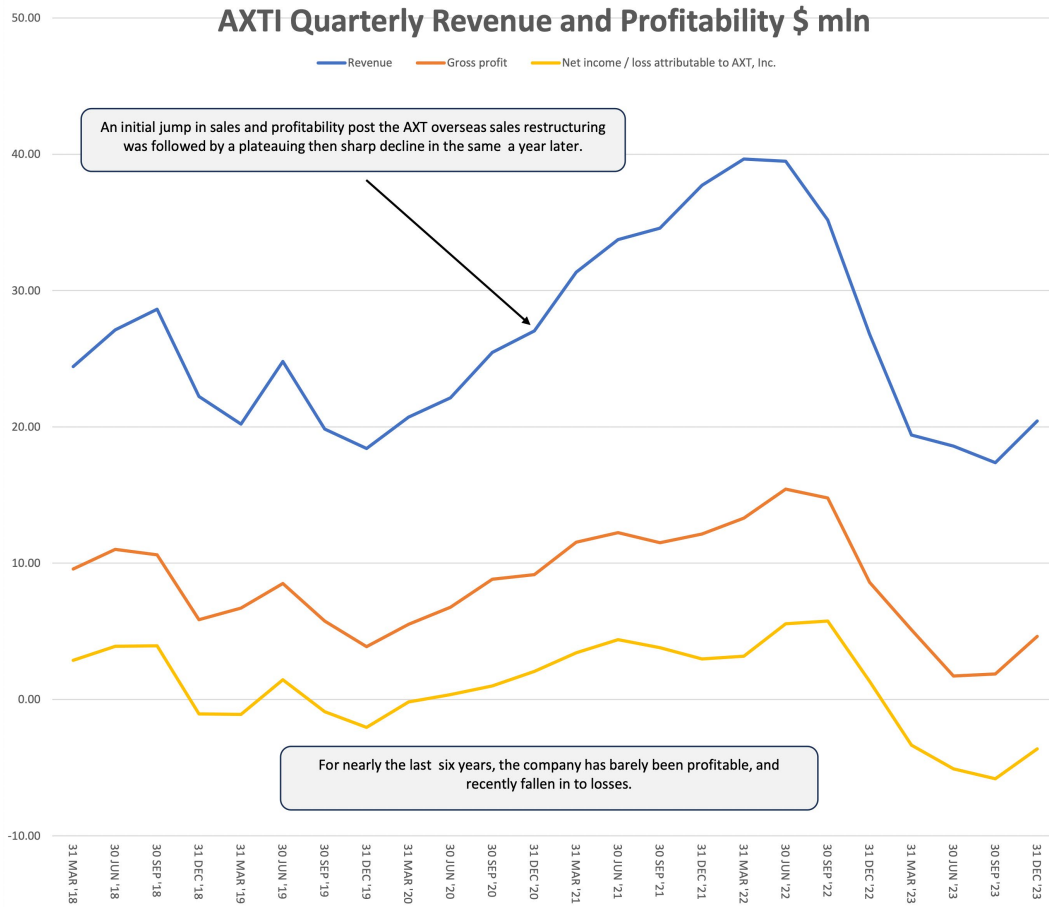
Source: <https://baijiahao.baidu.com/s?id=1760328463905433087&wfr=spider&for=pc>

During the first half of 2021, AXTI, apparently in response to questions around the related-party sales, restructured in order to place international sales under the Chinese subsidiary, Tongmei, instead of under the U.S. parent company. AXTI told Chinese regulators that the change was made in order to facilitate a Chinese listing.

13 Report by Ten Thousand Points Research, <https://finance.sina.cn/cj/2023-03-14/detail-imy-kvkrz5216461.d.html?from=wap>

Soon, sales and profitability began to hurtle downwards, and the company is now loss-making despite AI optimism.

AXTI Revenue 2022-2023



Source: AXTI disclosures/Factset

Problem No. 5: Tongmei has been sued multiple times for defaulting on wages to employees¹⁴

In 2022, Baidu IPO reported: **“Publicly available documents indicated that Beijing Tongmei was brought to court on various occasions due to failure to pay on time or outright refusal to pay wages. In the end, Beijing Tongmei lost every lawsuit.”**

北京通美IPO：无故拖欠员工工资，多次违法生产且屡教不改

IPO看点 2022-07-11 19:29 上海

科创板上市委 2022年第59次审议会议将于7月12日召开，审议北京通美晶体技术股份有限公司。北京通美是一家全球知名的半导体材料科技企业，主要从事碳化硅衬底、砷化镓衬底、锗衬底、PBN 材料及其他高纯材料的研发、生产和销售。

报告期内，北京通美资产总额分别为133,621.6万元、180,304.38万元和197,898.7万元，营业收入分别为46,222.68万元、58,317.04万元和85,734.5万元，由这组数据可以看出过去三年北京通美资产规模与营收规模均实现了快速增长。

虽然过去三年，北京通美的营收和净利润增长都非常抢眼，但是未来的发展依然存在诸多风险。首先值得注意的是，这是一家有外资控股的企业，其存在很大的政策风险。截至本招股说明书签署日，AXT持有公司85.51%的股权，为公司的控股股东。而AXT是一家成立于加州的美国企业。在全球化大背景下，中美两国关系仍然存在有大的不确定性，特别是美国对中国高科技半导体行业的限制，由此产生的政策风险对于北京通美未来的发展有很大的影响。这值得投资者以及社会公众的高度重视！

Beijing Tongmei IPO: Unpaid Wages, Multiple Cases of Illegal Production, and Failure to Change Despite Repeated Fines

A typical case is that of Cui Dongmei, a Beijing-based employee who did not want to move to Liaoning Province when the company closed down half of its production in Beijing and moved it to a rural county about 300 miles north. Cui won most of her claims.



Beijing Third Intermediate Court: Decision in the labor dispute of Cui Dongmei against Beijing Tongmei Xtal for ¥385,410.25 in unpaid wages. Ms. Cui had refused a transfer when Tongmei moved to Liaoning Province in February 2021, and Tongmei declined payment. Ms. Cui won of most of her claims.

Source: Beijing Third Intermediate Court ¹⁵

14 See “Beijing Tongmei IPO: Unreasonable arrears of wages to employees, illegal production many times, and failure to change despite repeated admonitions,” Baidu News July 7, 2022: <https://capture.dropbox.com/MzliaqerW7q8g1qc>

15 <https://wenshu.court.gov.cn/website/wenshu/181107ANFZ0BXSK4/index.html?docId=nOE3NrYf+UZ8tmrynYHtpS6X+QhqsZV2Spm5P2fGED/OLUBs/Ucz5/dgBYosE2gfj4diIpA1QcWyw1IP+y8AU3Ofxy+KCL3vOKYGzqpW3+InFjtz4orBS7i7ObbIBOS>

Problem No. 6: Numerous legal violations

A section of AXTI’s January 2022 8K, providing an English version of the Chinese prospectus, stretches for seven pages, from 1-1-270 to 1-1-277 describes **22 “Violations of laws and regulations of the Issuer” incurred during just four years of the company’s lengthy existence. They include tax evasion, many environmental violations, and one that is especially concerning to investors: providing “false statistics.”**

The company was also fined for avoiding “the inspection of import and export commodities which are subject to compulsory inspection.” In other words, it exported hazardous chemicals without an inspection. But AXTI assures investors that the fines imposed “would not have a material adverse impact on the Issuer’s business or financial conditions.”

Nanjing Jinmei failed to apply for and avoided the inspection of import and export commodities which are subject to compulsory inspection, so it was fined RMB6,100

In accordance with the provisions of Paragraph 1 of Article 46 of the Regulations for the Implementation of the Law of the People’s Republic of China on Import and Export Commodity Inspection, the consignor of import and export commodities fails to apply for and avoids inspection of import and export commodities which are subject to compulsory inspection, the entry - exit inspection and quarantine agency shall confiscate illegal income and impose a fine of 5% up to 20% of the total commodity value. Nanjing Jinmei’s duty-paid (taxable) price for the goods involved in the aforesaid violation totals RMB68,469.71, and subsequently the Customs of the Capital Airport of the People’s Republic of China imposed a fine of RMB6,100, representing not more than 10% of the duty-paid price for the goods involved, a small amount. Such violation does not belong to a serious case, and therefore it does not constitute a material violation.

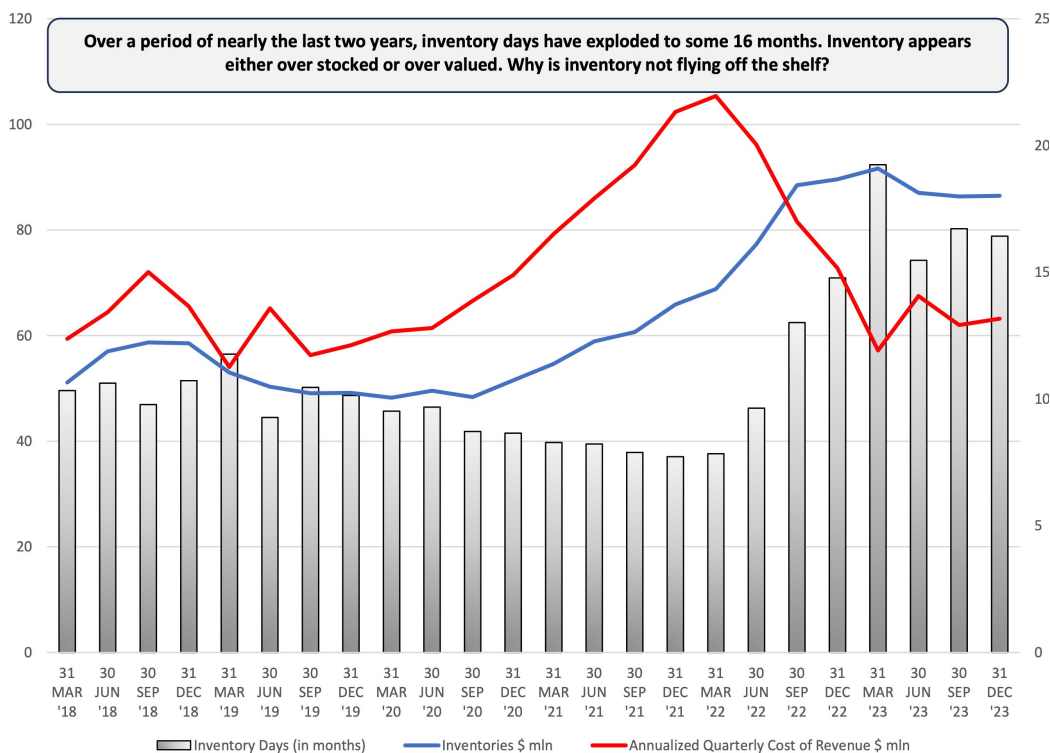
AXTI January 10, 2022 8K Page 1-1-276

Propping up margins: inventory levels rose even as sales collapsed

We question whether AXTI may be using inflated inventory values to push up visible profit margins. Holding off selling expensively acquired inventory can mean costs of materials in the income statement are lower, inflating profits.

U.S. GAAP filings show that inventory, already high at about eight months equivalent inventory days by end June 2021, jumped to a huge 16 months by end December 2023. **And yet a knowledgeable former employee we interviewed claimed that inventories never rose above five months.**

AXTI Excessive Inventory \$ mln



At the end of June 2021, the company reported about \$51 mln in inventory. Of that, \$39.5 mln consisted of raw materials, semi-finished goods, and works in progress. We find it difficult to believe that all that inventory was sitting in the warehouses the company reported owning in the Mongolian Autonomous County of Kazuo.

In RMB'000

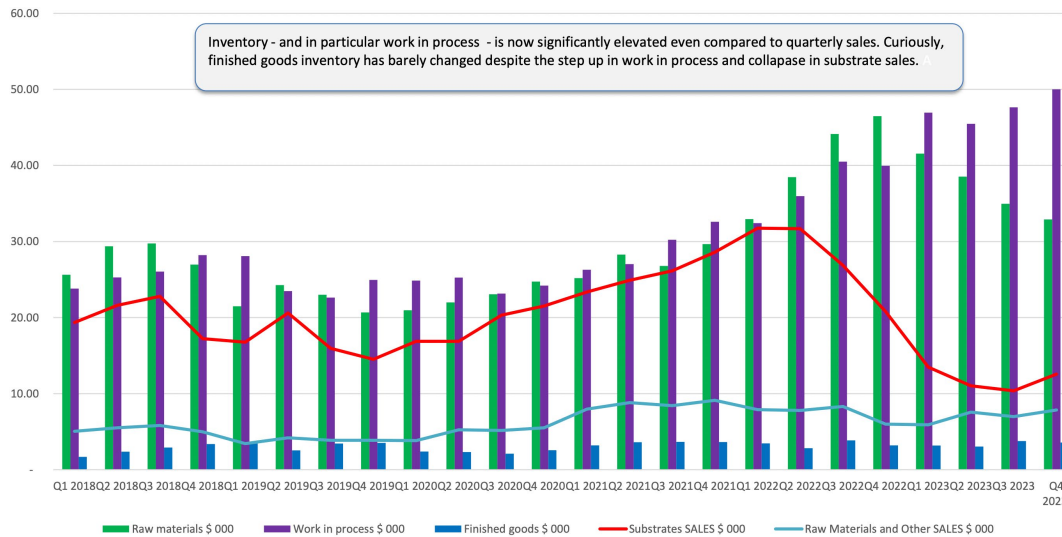
Period	Item	Book balance	Provision for decline in value	Book value	Proportion of book value
June 30, 2021	Raw materials	9,999.91	446.23	9,553.68	28.92%
	Semi-finished goods	9,555.88	670.74	8,885.14	26.90%
	Work in progress	7,113.01	-	7,113.01	21.53%
	Goods on hand	6,617.40	590.95	6,026.45	18.24%
	Goods upon delivery	1,457.46	-	1,457.46	4.41%
	Total	34,743.66	1,707.92	33,035.74	100.00%

Source: January 10, 2022 8K page 1-1-405

Some \$10.3 mln of the inventories consisted of “goods on hand.” An engineer we interviewed said that there were no finished goods in inventory.

Raw materials and work-in-process inventories closely tracked quarterly sales up until Q2 2022, then substrates ***sales tanked while inventories remained high.***

AXTI Quarterly Inventory and Sales By Type \$ mln



Source: Company filings, Factset

Given the company’s stated policy of writing off inventory after 12 months, we believe a write-down is coming.

“[W]e have a policy of writing off material which we don't sell for 12 months period of time. And when the revenue comes down, then the write-off for the excess inventory will start to impact us.”

Morris S. Young Co-Founder, CEO & Chairman, AXTI Q4 2023 Earnings Call, February 22, 2024

No dramatic pick-up in sales is coming to the rescue; in the last quarter of 2023, revenue was \$20.4 mln, while the company guidance for Q1 2024 was only between \$20 mln and \$22 mln.

Suspicious loans

AXTI began to accelerate borrowing from banks as inventories rose. The company has multiple small loans from different Chinese banks. Their small sizes, short time frames, and dispersion among many banks suggest that these loans are for working capital. The \$52.9 mln in short-term bank loans compares to just \$10.5 mln at end June 2021. Many of the 2023 bank loans appear to be replacements from expired loans taken in 2022.

During 2022, the company spent a big chunk of cash funded from bank borrowing for inventory purchases. Why borrow money to overstock?

AXT, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2023	2022	2021
Cash flows from operating activities:			
Net income (loss)	\$ (19,193)	\$ 18,742	\$ 16,509
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	8,722	8,119	7,078
Amortization of marketable securities premium	18	58	68
Stock-based compensation	3,540	4,006	4,519
Provision for credit losses	272	(177)	87
Loss on sale of equity investment	166	—	—
(Gain) Loss on disposal of equipment	21	(85)	(8)
Return of equity method investments as dividends	4,316	1,608	774
Equity in income of unconsolidated joint ventures	(2,050)	(5,957)	(4,409)
Deferred tax assets	553	104	2,340
Changes in operating assets and liabilities:			
Accounts receivable	9,306	4,535	(9,748)
Inventories	1,073	(31,412)	(12,401)
Prepaid expenses and other current assets	(652)	(3,486)	(798)
Other assets	419	(471)	(6,283)
Accounts payable	(162)	(5,519)	3,563
Accrued liabilities	(1,897)	(2,127)	(3,445)
Other long-term liabilities	(1,049)	3,297	(1,151)
Net cash provided by (used in) operating activities	3,403	(8,765)	(3,305)
Cash flows from investing activities:			
Purchases of property, plant and equipment	(10,475)	(28,465)	(29,645)
Purchases of available-for-sale debt securities	—	(2,158)	(9,645)
Proceeds from sales and maturities of available-for-sale debt securities	9,582	5,400	480
Proceeds from sales of equity securities - 15% of Jia Mei	827	—	—
Investments in non-marketable equity investments	(2,538)	—	—
Net cash used in investing activities	(2,604)	(25,223)	(38,810)
Cash flows from financing activities:			
Proceeds from common stock options exercised	10	518	1,670
Proceeds from sale of subsidiary shares to noncontrolling interests	—	—	538
Proceeds from short-term bank loans	56,470	53,078	20,543
Proceeds from long-term loan from noncontrolling interest	—	—	1,834
Payments on short-term bank loans	(49,210)	(17,798)	(19,066)
Proceeds from capital increase in subsidiary shares from noncontrolling interests	708	2,233	—
Proceeds from long-term loan	635	—	—
Formation of new subsidiary with noncontrolling interests	—	—	1,283
Proceeds from issuance of Tongmei's common stock to redeemable noncontrolling interests, net of costs	—	—	(1,077)
Net cash provided by financing activities	8,613	38,031	5,725

Questionable building costs

Between 2018 and the year of the Tongmei prospectus, AXTI added \$69 mln in buildings, going from \$39.8 mln in buildings at cost at the end of 2018 to \$99.3 mln at end June 2021. This represented the value of 44 buildings owned by Tongmei in China. Of these, according to AXTI disclosures, 15 are residences and six are warehouses, some with shared use. All but five are in the tiny rural area of Gongyingzi Village in Kazuo County, Liaoning, an enclave of people of the Mongolian ethnicity. Kazuo is a tiny, rural county that has aspirations to develop a semiconductor park but so far looks very undeveloped.

Fourteen of the properties, including six of the residences, belong to the subsidiary Chaoyang Jinmei in Kazuo. But, despite a land-use table presented in the January 2022 8K showing extensive holdings,¹⁶ Chinese government records show that Chaoyang Jinmei owns just one piece of land, for which it paid ¥53,000 or \$7,339. Possibly AXTI is consolidating holdings and Chinese records are not, but we would expect a land-use table to name the specific entity that holds the land.

We also find it difficult to believe that AXTI could have spent over \$60 mln on

16 See pages 1-1-509 and 1-1-510 <https://d18rn0p25nwr6d.cloudfront.net/CIK-0001051627/bb851482-44b9-4f5b-bf9d-f2634a20c9a3.pdf>

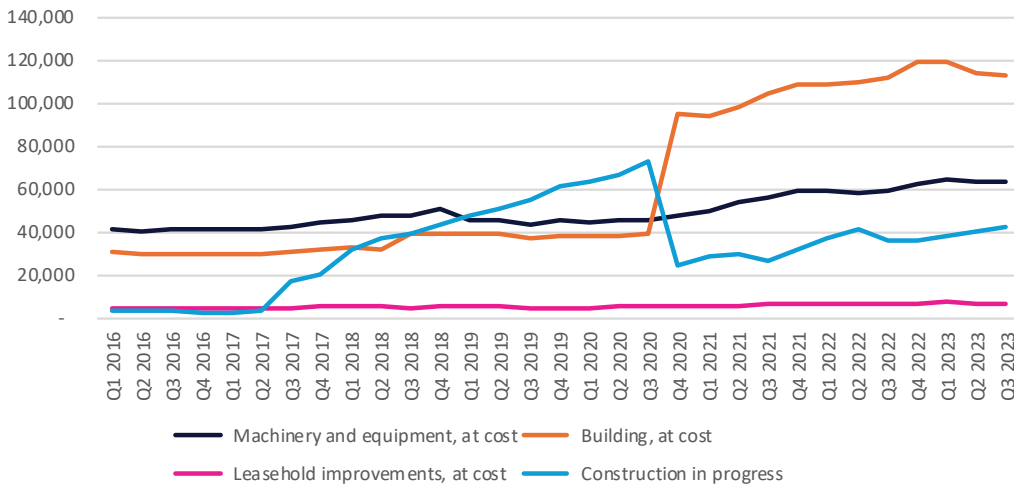
building on this cheap land in a god-forsaken part of northern China.



Source: Chinese government land record

The cost of buildings shot up at the time of the IPO prospectus, in late 2020. Instead of installing only new machinery, it appears existing older machinery was transferred to the new buildings.

AXTI PPE at cost before depreciation \$mln



Source: AXTI disclosures

AXTI's principal manufacturing plant is in Tongzhou, a suburb of Beijing. The distance from Kazuo to Beijing is about 300 miles and driving time for a truck is around four hours and 45 minutes. We wonder, could an efficient production process actually be split between Kazuo and Beijing?



Kazuo promotional video

Source: https://www.cnr.cn/ln/tpxw/20230615/t20230615_526289971.shtml

The Tongzhou facility does not look like it cost millions either. Here are images from a 2021 report by Beijing's Environmental Bureau.



图 2-3 公司厂区现状图



厂区东侧-比泽尔压缩机



厂区西侧-奥托博克假肢厂



Source: Beijing Tongmei Crystal Technology Co., Ltd. Soil and Groundwater Hazard Investigation and Self-monitoring Report, Beijing Academy of Ecological and Environmental Protection Sciences, November 2021

Procuring from and investing in the same companies

AXTI purchases many raw materials from its own equity investments.

We also invest in equity instruments of privately held raw material companies in China for business and strategic purposes. Investments in our unconsolidated PRC joint venture raw material companies are classified as other assets and accounted for under either the equity or fair value method, depending on whether we have the ability to exercise significant influence over their operations or financial decisions. We monitor our investments for impairment and record reductions in carrying value when events or changes in circumstances indicate that the carrying value may not be recoverable. Determination of impairment is highly subjective and is based on a number of factors, including an assessment of the strength of the subsidiary's management, the length of time and extent to which the fair value has been less than our cost basis, the financial condition and near-term prospects of the subsidiary, fundamental changes to the business prospects of the subsidiary, share prices of subsequent offerings, and our intent and ability to hold the investment for a period of time sufficient to allow for any anticipated recovery in our carrying value.

Related-party suppliers

Name of the company	Shareholding proportion (%)
Beijing JiYa Semiconductor Material Co., Ltd.	39
Emeishan Jiamei High Pure Materials Co., Ltd	10
XiLinGol Tongli Ge Refine Co., Ltd.*	0

Source: AXTI 2023 10K

In 2023, the company had no shareholding in XiLinGol because AXTI wrote off its 25% share in 2019, according to the 10K.

There are numerous disclosures of transactions for small amounts of equity being traded among these entities and minimal disclosures that quantify actual sales transaction amounts with raw-material supplier subsidiaries recorded as unconsolidated equity interests.

This disclosure could indicate circularity:

For the year ended December 31, 2023, three customers of our consolidated subsidiaries, in aggregate, accounted for 31% of raw material sales. For the year ended December 31, 2022, three customers of our consolidated subsidiaries, in aggregate, accounted for 29% of raw material sales and for the year ended December 31, 2021, three customers accounted for 28% of raw material sales.

Source: AXTI 2023 10K page 13

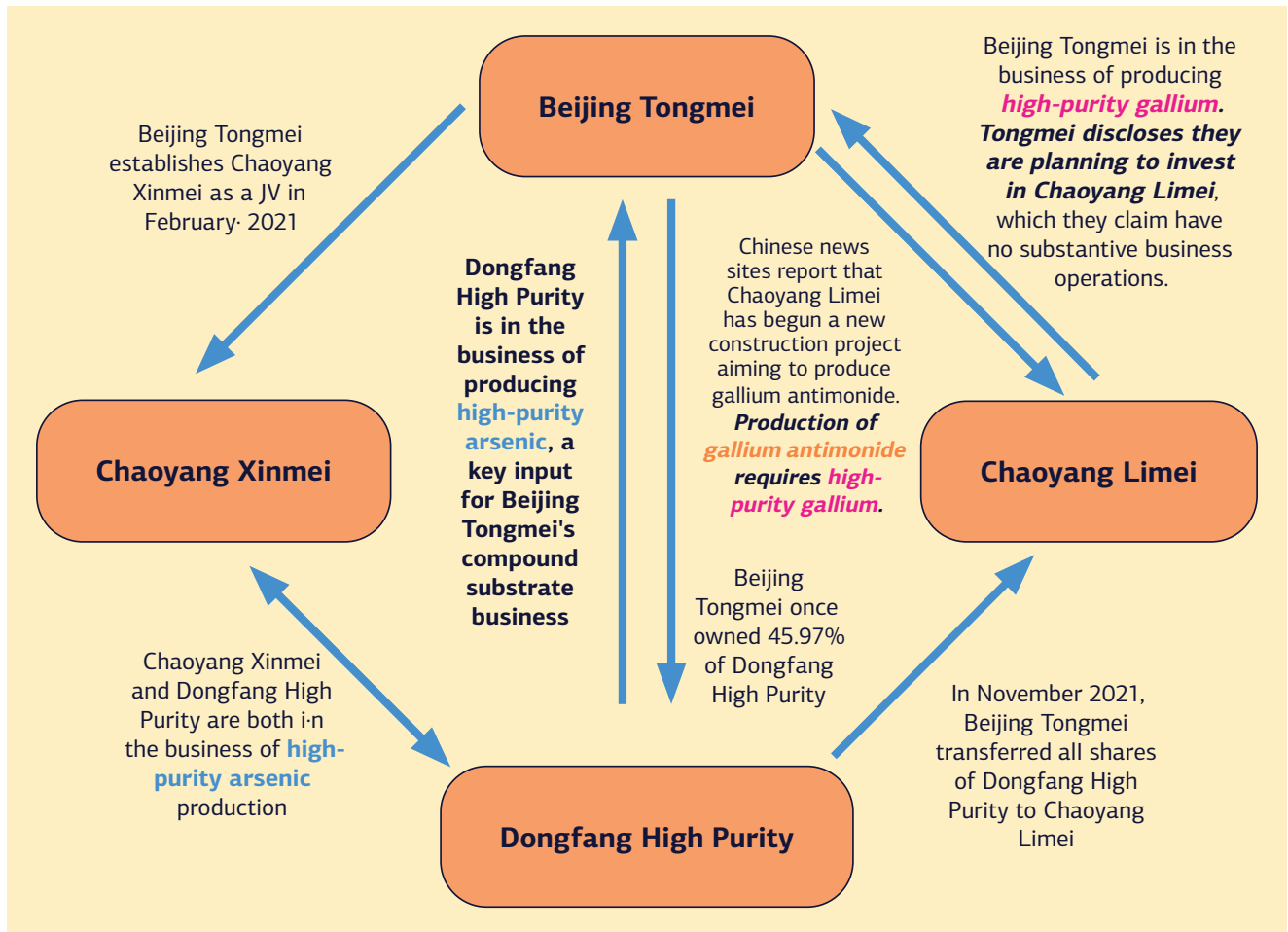
The profitability of affiliates appears to have fallen in the last year, and that could also suggest supplying at a loss.

Net (Income) loss Attributable to Noncontrolling Interests and Redeemable Noncontrolling Interests

	Years Ended Dec. 31			2022 to 2023		2021 to 2022	
	2023	2022	2021	Increase (Decrease)	% Change	Increase (Decrease)	% Change
	(S in thousands)						
Net (income) loss attributable to noncontrolling interests and redeemable noncontrolling interests	\$ 1,312	\$ (2,931)	\$ (1,934)	\$ (4,243)	(144.8)%	\$ 997	51.6 %
<i>% of total revenue</i>	<i>1.7 %</i>	<i>(2.1)%</i>	<i>(1.4)%</i>				

The decrease in noncontrolling interests and redeemable noncontrolling interests' share of income to a loss for 2023 as compared to 2022 was primarily due to losses at four of our consolidated subsidiaries in China, partially offset by a profit from our other consolidated subsidiary in China.

Source: AXTI 2023 10K



The blizzard of transactions with suppliers is truly amazing. AXTI/Tongmei borrows from them, gets dividends, buys equity, moves equity among investees, all without disclosure about the amounts of materials the company is buying from these investees and whether they are making or losing money. Tongmei's only disclosure is the amount of accounts receivable owed by these companies at the end of a period, and naturally, it is easy to make those numbers look small for the audit period.

The cross-holdings and multiple positions of subsidiary directors incentivize and could enable non-economical inter-company transactions.

Partial list of executive cross-holdings

HAO Ze	Director, Deputy General Manager, Chief Financial Officer	Beijing Jiya	Director	Equity Participation Company of Controlling Shareholder
WANG Yuxin	Director, Deputy General Manager	Beijing Liaoyan	Executive Partner	Shareholder of the Issuer
GUO Tao	Director, Deputy	Xing'an Gallium	Supervisor	Equity Participation Company
	General Manager	Guangxi Tiandong Jinxin Rare Metal Materials Co., Ltd.	Supervisor	Xing'an Gallium Holding its 30% Equity Interest
		Jiamei Hi-purity	Supervisor	Equity Participation Company of Controlling Shareholder
		Nanjing Jinchao Enterprise Management Co., Ltd.	General Manager, Executive Director	
SICC CO., LTD.	Director	Haitong New Energy Private Equity Investment Management Co., Ltd.	Director, Deputy General Manager	
		Brite Semiconductor (Shanghai) Co., Ltd.	Director	-
		Liaoning Zhonglan Electronic Technology Co., Ltd.	Director	-
WANG Huan	Director	Shenzhen Suteng Juchuang Technology Co., Ltd.	Director	
		Beijing Chuangan Microchip Technology Co., Ltd.	Manager, Executive Director	
		Hefei Jixin Enterprise Management Partnership (Limited Partnership)	Executive Partner	
		Changxin Memory Technologies, Inc.	Director, General Manager	
ZHAO Lun	Independent Director	Changxin Xinyuan Equity Investment (Anhui) Co., Ltd.	Executive Director and General Manager	

		Changxin Jidian (Beijing) Storage Technology Co., Ltd.	Chairman
		Changxin Xinqiao Storage Technology Co., Ltd.	Executive Director, General Manager
		Hefei Jixinshuochi Enterprise Management Co., Ltd.	Supervisor
		Ruili Integrated Circuit Co., Ltd.	General Manager
		Changxin Memory Technologies (Xi'an), Co., Ltd.	Executive Director, General Manager
		Changxin Memory Technologies (Shanghai), Co., Ltd.	Executive Director, General Manager
		Beijing Chengdixin Certified Public Accountants (General Partnership)	Executive Partner
PANG Fengzheng	Independent Director	Beijing Xinda Jiayuan Tax Agents Co., Ltd.	Manager, Executive Director
LIU Yanfeng	Independent Director	Zhongzhi Capital Management Co., Ltd.	General Manager of the Financial Management Center

Source: AXTI August 2, 2022 8K, translating response to the Chinese CSRC

No central Treasury?

The subsidiaries appear to be independent, without centralized treasury or management control for day-to-day operations. AXTI states that cash generated from one Chinese subsidiary is not used to fund another PRC subsidiary's operations. That is very unusual and implies that subsidiaries are more like independent operating units with decentralized control yet brought under a single umbrella for the listed company. Without full management control, it is not difficult to see situations where raw-material supplier subsidiaries could overstock at inflated prices.

Although we have representation on the board of directors of each of the privately held raw material companies, the daily operations of each of these companies are managed by local management and not by us. Decisions concerning their respective short-term strategy and operations, ordinary course of business capital expenditures and sales of finished product, are made by local management with regular guidance and input from us.

Source AXTI 2023 10K

Historic quality issues

AXTI discloses that it has experienced quality problems that drove customers away. The disclosure speaks for itself:

Our operating results depend in large part on continued customer acceptance of our substrate products manufactured in China and continued improvements in product quality.

We manufacture all of our products in China, and source most of our raw materials in China. We have in the past experienced quality problems with our China manufactured products. Our previous quality problems caused us to lose market share to our competitors, as some of our customers reduced their orders until our wafer surface quality was as good and as consistent as that offered by our competitors and instead allocated their requirements for compound semiconductor substrates to our competitors. If we are unable to continue to achieve customer qualifications for our products, or if we are unable to control product quality, customers may not increase purchases of our products, our China facilities will become underutilized, and we will be unable to achieve revenue growth.

Source AXTI 2023 10K

Excessive optimism

AXTI may have nurtured hugely optimistic plans for the Tongmei IPO. In its 2021 Chinese prospectus, AXTI projected that it would need to nearly triple inventory by 2024. The projection was issued to support a requirement for working capital.

Item	At the end of 2021	Average proportion for the past three years
Accounts receivable	22,195.99	26.88%
Notes receivable	1,489.15	3.16%
Receivables financing	6,188.39	5.21%
Prepayments	779.51	0.84%
Inventories	40,103.45	52.11%
Total operating current assets	70,756.49	88.20%
Accounts payable	12,251.26	20.92%
Contract liabilities	515.39	0.37%
Total operating current liabilities	12,766.65	21.19%
Amount occupied by working capital	57,989.84	67.01%

By assuming that there is no material change in the Company's overall operating environment, international trade policies, market demand and external conditions, the calculation process of the Company's demand for replenishing working capital from 2022 to 2024 is as follows:

Item	2022 (Forecast)	2023 (Forecast)	2024 (Forecast)	In RMB'000
Operating income	116,761.84	159,017.95	216,566.55	
Accounts receivable	31,379.86	42,736.23	58,202.47	
Notes receivable	3,690.16	5,025.63	6,844.41	
Receivables financing	6,083.56	8,285.20	11,283.62	
Prepayments	976.16	1,329.43	1,810.55	
Inventories	60,849.06	82,870.33	112,861.17	
Total operating current assets	102,978.80	140,246.82	191,002.16	
Accounts payable	24,428.44	33,269.09	45,309.18	
Contract liabilities	429.42	584.83	796.48	
Total operating current liabilities	24,857.86	33,853.92	46,105.66	
Amount occupied by working capital	78,120.94	106,392.90	144,896.50	
New working capital demand			86,906.66	

According to the above calculation, the Company's new working capital demand

Beijing Tongmei prospectus Page 8-1-122

Now, on an annualized basis, inventories approximate to about 1.3 years. That is extremely high.

An auditor ranked 33rd in the U.S.

AXTI's auditor is BPM, ranked about 33rd in size in the United States for 2023 according to the PCAOB. BPM is based in California, yet most of AXTI's business is in China. BPM cannot directly audit in China, so to whom do they contract this service? Or are they wholly relying on management representations for their audit information?"

The IPO underwriter was fined by Chinese regulators and hid a related-party investment into the company

The chief underwriter for AXTI’s Chinese subsidiary is a broker called Haitong Securities. Despite being one of the largest securities firms in China, Haitong has NEVER been on the country’s White List, published eight times. The Chinese press is full of criticisms of Haitong, including that it sponsors expensive but low-quality IPOs of companies whose share prices subsequently tank. Haitong was part of the Luckin Coffee IPO. As recently as November 7, 2023, the Chinese regulator issued a warning letter to Haitong about problems such as failing to perform their duties proper due diligence in a recent IPO.¹⁷

Through two subsidiaries, Haitong invested in Beijing Tongmei. Haitong’s promotion of the IPO looks self-interested.

In 2022, Haitong increased its shareholding, and Chinese commentators believed that was to grease wheels for an IPO approval.

第二代半导体材料商北京通美恢复科创板IPO 海通证券关联公司突击入股

市场资讯
2022.02.20 21:31 + 关注

北京通美方面并没有直接回复《科创板日报》记者关于海通证券关联公司突击入股的原因，仅表示：“新增股东认可发行人的发展前景，自愿认购发行人增资。”但有市场人士认为，或基于业务合作及利益绑定等诉求考虑，加快推动公司科创板IPO。

Beijing Tongmei, a second-generation semiconductor materials company, resumes its IPO on the Science and Technology Innovation Board, and a company affiliated with Haitong Securities makes a surprise investment in shares.

Some market participants believe that the IPO . . . may be accelerated based on business cooperation [with Haitong].

Source: Sina February 20, 2022 <https://finance.sina.cn/stock/ssgs/2022-02-20/detail-imcwiwss1985723.d.html>

17 https://www.yicai.com/star50news/2023_11_116622414587897577483
<https://asia.nikkei.com/Spotlight/Caixin/Haitong-Securities-probed-in-fraudulent-financial-reporting-case>
<https://inf.news/en/economy/5700bbe33ee015d1caf3a7e651a589dc.html>
<https://www.financeasia.com/article/luckin-coffee-fraud-has-big-implications-for-chinese-issuers/459386>
<https://www.reuters.com/article/china-haitong-regulator-investigation-idUSL1N2I4005/>
<https://www.wallstreetoasis.com/forum/investment-banking/exposing-a-complete-scam-shop>

The IIC Shanghai, a financial newspaper, wrote that Haitong's *intention in making this sudden stock purchase before the listing was obvious.*¹⁸

Some 16% of Haitong Securities' IPO prospectuses have been withdrawn, according to the Chinese press, and Haitong's investment banking business has been fined a number of times. In September 2023, Haitong was warned by the CSRC, forced to disgorge ¥28.6 mln in illegitimate profit, and fined ¥86 mln.¹⁹

A checkered history for the executives and board

VP & CFO: Gary Fischer

AXTI CFO Gary Fischer, while a board member of Integrated Silicon Solution, was charged with options fraud for backdating. Fischer settled with the SEC without admitting guilt, agreeing to repay over \$500,000 in profits and penalties.²⁰

The SEC alleged that the memory chip designer and Fischer concealed millions of dollars of stock option compensation expenses by providing executives and employees with options while backdating the grants to avoid reporting the expenses.

From 2004-2007, Fischer was a board member of ESS Technology. Two credible activist reports on that company alleged that ESS conducted undisclosed related-party transactions.²¹ Fischer himself was accused of making false representations.

Like the company auditor, the CFO's profile suggests he is based in California, yet most of the company's operations are in China. Can he possibly be on top of all the issues in the many subsidiaries?

Board member Christine Russell

Russell has a long history in Roth and Craig-Hallum IPOs. Both companies have a poor record for promoting small, often fraudulent stocks.

Russell was CFO of Uni-Pixel from 2015 to 2018. In March 2016, Uni-Pixel was

18 IIC Shanghai, "Beijing Tongmei, a second-generation semiconductor materials company, resumes its IPO on the Science and Technology Innovation Board, and Haitong Securities affiliates make a surprise investment in shares," February 20, 2022: <https://www.eet-china.com/mp/a112183.html>

19 <https://www.ljzfin.com/info/23194.aspx>,
<https://www.163.com/dy/article/IP8Q3DJ80519B9KP.html>

20 <https://www.reuters.com/article/sec-integratedsilicon-idUSN0136376820070801/>,
<https://www.sec.gov/litigation/litreleases/lr-20219>

21 <https://www.bonitasresearch.com/company/ess-tech-inc-nyse-gwh/>,
<https://grizzlyreports.com/caught-red-handed-we-present-evidence-that-ess-tech-inc-s-biggest-customer-is-really-an-undisclosed-related-party-without-operations/>

required to pay the SEC \$750,000 to settle fraud charges.²² Seeking Alpha reports on the company have indicated very poor operations.²³

Russell was also a director of MariaDB from 2022 to 2023, when auditor Malone & Bailey issued a going-concern warning. Since 2005, she has been a director of QuickLogic Corp., which fell out of listing compliance.

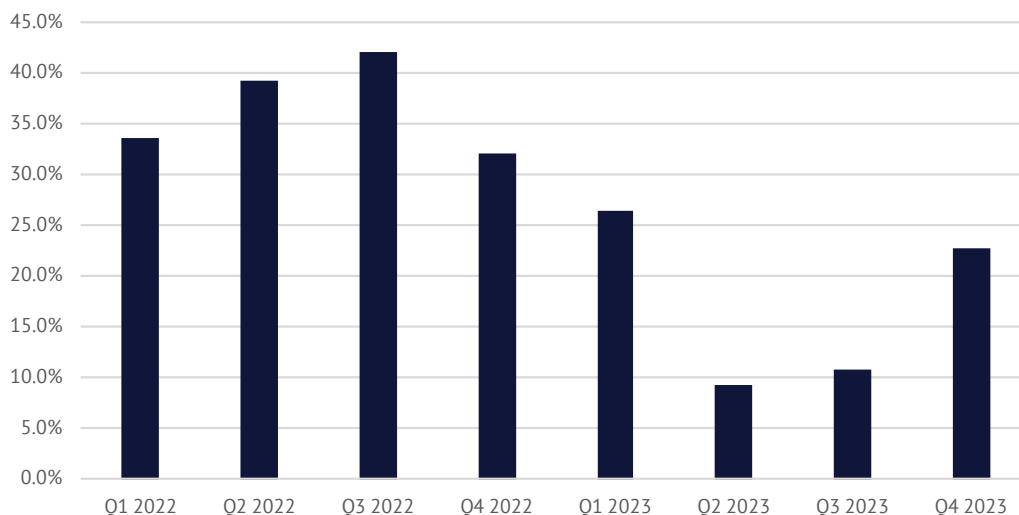
Parent company underwriters were subject to dozens of enforcement actions

AXTI was brought to market by Needham & Company. Needham has been the subject of 27 separate SEC enforcement actions since 1985.²⁴

The fundamentals: falling revenue and margins, plumped-up inventories, uncompetitive manufacturing process

Providing germanium, gallium arsenide, and indium phosphide is ultra-competitive, and company margins are eroding.

AXTI revenue by quarter (\$,000 USD)



Source: Capital IQ

22 <https://www.reuters.com/article/unipixel-sec-fraud/uni-pixel-pays-u-s-sec-750000-to-settle-fraud-charges-idUSL1N16H1XN>

23 See these stories:
<https://seekingalpha.com/article/1470801-musings-on-minneapolis-uni-pixel-is-moving-backwards>,
<https://seekingalpha.com/article/1445991-kodak-doesnt-think-much-of-uniboss-so-why-should-you>,
<https://web.archive.org/web/20130612122959/http://www.citronresearch.com/wp-content/uploads/2013/04/UNXL-final.pdf>,
<https://seekingalpha.com/article/1105271-uni-pixel-bright-future-promised-by-clouding-the-gruesome-reality-for-the-less-informed>,
<https://seekingalpha.com/article/3062726-uni-pixel-this-steamroller-is-about-to-squash-investors>,
<https://moxreports.com/unipixel-one-billion-dollars/>

24 https://files.brokercheck.finra.org/firm/firm_16360.pdf

AXTI faces competition from giants such as Sumitomo, JX Nippon, and Logitech. Among others, Huawei is investing heavily in indium phosphide, as is the Chinese government.²⁵

In contrast to the cautious optimism heard on their earnings call, the company discloses in filings:

The level and intensity of competition has increased over the past years, and we expect competition to continue to increase in the future. Competitive pressures have resulted in reductions in the prices of our products, and continued or increased competition could reduce our market share, require us to further reduce the prices of our products, affect our ability to recover costs and result in reduced gross margins and profitability.... ***We believe that at least two of our major competitors are shipping high volumes of GaAs substrates manufactured using a process similar to our VGF process technology.***

Source: AXTI 2023 Q3 Report

AXTI warns that former Chinese employees are knocking off the product and starting up their own GaAs wafer companies that now compete against AXTI.

In addition, new competitors have and may continue to emerge, ***such as a crystal growing company established by a former employee in China that is supplying semi-conducting GaAs wafers to the LED market.***

Source: AXTI 2023 Q3 Report

Chinese export controls pose a risk to the business

China [imposed restrictions](#) on gallium and germanium early in 2023, following the Biden Administration's export restrictions on high-end semiconductors.

Chinese export controls on gallium and germanium took effect on December 1, 2023. Products falling under the new controls cannot be exported from China unless approval is obtained through China's Ministry of Commerce.²⁶

25 <https://www.haythink.com/insights/detail.asp?ID=10150>

26 <https://think.ing.com/articles/china-strikes-back-in-the-tech-war-restricting-exports-of-gallium-and-germanium/>

A Securities Daily article estimates that half of AXTI's product could be affected.

聚焦北京通美科创板IPO:

近五成收入来自镓锗相关物项 受出口管制政策影响大

The Tongmei IPO: Almost 50% of revenue comes from gallium- and germanium-related materials that are restricted for export.

Source: Securities Daily, July 11, 2023

Scrubbing records of bad behavior?

We believe that AXTI may have engaged in an effort to remove negative information from Chinese websites. When we tried to get a credit report on the company, we found a notice that Tongmei had applied in September 2021 to have its credit report expunged from the "Credit China" website.

北京通美晶体技术股份有限公司 存续 守信激励对象
统一社会信用代码: 91110000700004889C

Beijing Tongmei Xtal

重要提示:
1. 如认为所展示信息存在错误、遗漏、公开期限不符合规定以及其他侵犯信息主体合法权益的, 可按《信用信息异议申诉指南》提出异议申诉; 如需对相关行政处罚信息进行信用修复, 可按《行政处罚信用信息信用修复流程指引》提出信用修复申请。
2. 本查询结果仅依现有数据展示相关信息, 供社会参考使用, 使用相关信息的单位和个人应对信息使用行为的合法性负责。
3. "信用中国"网站公示信息与认定单位公示信息不一致的, 以认定单位相关系统公示信息为准。
4. 因篇幅有限, 单条数据仅按更新程度展示前10000条信息。

基础信息

法定代表人/负责人/执行事务合伙人	莫里斯·杨	企业类型	--
成立日期	1998-09-25	住所	北京市通州区工业开发区东二街4号

行政管理 44 | 诚实守信 5 | 严重失信 0 | 经营异常 0 | 信用承诺 4 | 信用评价 0 | 司法判决 0 | 其他 0

全部 4 | 企业信用承诺信息 (新标准) 3 | 企业信用承诺信息 (旧标准) 1

承诺类型	信用修复型
承诺事由	信用修复型, 申请在"信用中国"网站办理行政处罚信息信用修复
承诺作出日期	2021-09-18

Application for a repair of administrative penalty information on the "Credit China" website

9/18/2021

Source: Creditchina.gov.cn, accessed March 25, 2024

A history of fraud

In 2001, AXTI [settled a lawsuit](#) claiming that the company knowingly shipped defective products.

In his Consolidated Complaint for Violations of the Federal Securities Laws (hereinafter, the “Complaint”), Plaintiff alleges that AXT and Defendant Young, AXT’s former Chairman and Chief Executive Officer, violated §§ 10 (b) and 20 (a) of the Securities and Exchange Act of 1934 (“Exchange Act”), 15 U.S.C. §§ 78j(b) and 78(t)a, and Securities and Exchange Commission (“SEC”) Rule 10b-5, 17 C.F.R § 240.10b-5. According to Plaintiff, during the Class Period, Defendants knowingly shipped products that did not conform to customer testing requirements or specifications. Plaintiff alleges that **Defendants failed to properly account for products that were defective or could not be sold by improperly recognizing revenue on those sales even though Defendants knew the products would be returned and failing to accrue adequate reserves. Plaintiff claims that Defendants violated the securities laws by knowingly issuing false or misleading statements about AXT’s reserves, revenue, and income** (hereinafter, the “financial statements”), and by knowingly issuing false or misleading statements touting the quality of AXT’s products and AXT’s ability to meet customer requirements (hereinafter, the “quality statements”).

In 2004, AXTI shares fell by over 35% in two days when the company delayed release of its 10Q due to a previously undisclosed investigation by the Audit Committee. One month later, AXT disclosed that, for an undisclosed number of years, AXT had "not followed requirements for testing of products and provision of testing data and information relating to customer requirements for certain shipments made over the past several years."

The class action lawsuit named the former chief technology officer as a defendant.

AXTI settled an IP infringement lawsuit

AXTI had to settle a lawsuit in 2004 that alleged the company had infringed on gallium nitride thin film technology used in LEDs that Boston University had developed in the 1990s. AXT settled the lawsuit by agreeing to pay BU and Cree an undisclosed amount.

The patent AXTI allegedly infringed upon in [Trustees of Boston University and Cree Lighting Company v. AXT Inc.](#) had been licensed to Cree on an exclusive basis.

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