

Shanghai Weihong Electronic Technology

(300508 CH)

Initiating coverage: we provide answers to three questions that investors might have about Weihong

We are optimistic about the company's laser-cut system market growth, on top of subsidiary Kaitong Automation's growth prospects in CNC machine tools. We initiate coverage with a BUY call and a target price of RMB101.

An industrial motion control systems market leader

Weihong's main products are industrial motion control, servo driver and industrial Internet of Things (IOT) systems, which are usually deployed in computer numerical control (CNC) machine tools. Its motion control products include engraving and milling control (woodworking, 3C, metal), cutting control (laser, water, flame) and manipulator systems. In January 2021, the company acquired Kaitong Automation, which augmented its turning and milling product line and enhanced the company's competitiveness. Revenue growth reached a fundamental inflection point and grew strongly in 1H21.

Question 1: What is the market scale of laser-cut control systems?

Benefiting from all types of metal and non-metal parts, the laser-cut process equipment market is growing well. A motion control system represents the brains of a laser-cut machine. We expect China's laser equipment market to reach RMB77bn in 2021E, with a laser-cut equipment market scale of RMB19.7bn and annual sales of 72,000 units. We believe the laser-cut control systems market size (RMB1.34bn in 2020) will reach RMB3.72bn in 2025E, with high-powered systems growing faster.

Question 2: What is the outlook for Weihong's laser-cut products market share?

Shanghai Friendess Electronic Technology, the domestic leader in laser-cut control systems, accounted for 70% of the low to medium-powered market and 15% of the high-powered market in 2020. Weihong's laser-cut systems differ little from those of Friendess in product structure, control precision and speed. The company aims to differentiate its products with in-depth cooperation with lead customers, and had good results in terms of product development and customer expansion in 1H20. Its low to medium-powered product market share increased to ~20%; in the high-powered 10,000-20,000W segment, its products entered the trial phase. We believe its market share gap with Friendess will continue to narrow and that its market share will increase in the future.

Question 3: How will the integration of Kaitong impact Weihong's future growth?

Kaitong Automation is positioned in motion control systems in the CNC machine tool market. In a meeting in August 2021, the State-owned Assets Supervision and Administration Commission (SASAC) emphasized technological innovations, ranking industrial "mother" machines ahead of high-end chips. China's CNC machine tools market has grown rapidly but still lags the ones in developed countries. In addition, the localization rate of high-end global CNC machine tools is relatively low, so we see large potential market. We believe that the essence of high-end CNC machine tools is industrial software, especially for CNC systems. The localization of CNC systems is the key to the localization of high-end CNC machine tools, in our view. After acquiring Kaitong Automation, we expect Weihong to step up its products and R&D toward the high-end market, which implies broad headroom for growth.

Valuation and risks

Taking into account Weihong's laser-cut market growth and subsidiary Kaitong Automation's growth in CNC machine tools, we expect total revenue of RMB439m/615m/819m in 2021/22/23E, with net profit at RMB100m/168m/226m. We initiate coverage with a BUY rating and a target price of RMB101 (target market value of RMB9.2bn). **Risks include:** industry profitability coming in less than expected; laser-cut product R&D and customer expansion falling below expectations; and intensifying competition. *Note: our forecast assumptions are subjective.*

Initiation of coverage

BUY

Target price:	RMB101.00
Share price (6 Sep):	RMB61.99
Up/downside	62.9%

Company information

52wk High (08/12/2021)	73.52
52wk Low (02/08/2021)	17.32
P/E (Trailing 12m)	69.81
Dividend Yield	0.06
Price to Book Ratio	9.09
Price to Sales Ratio	15.97
EV / Trail 12M EBITDA	112.05
Shares Outstanding (m)	90.9
Market Cap (RMBm)	5,457.4

Source: Wind

Financial summary (RMB)

	21E	22E	23E
Revenue (m)	439	615	819
YoY Growth (%)	109.96	40.08	33.14
EBITDA (m)	126	203	265
Net profit (m)	100	168	226
YoY Growth (%)	245.11	67.30	34.46
EPS (price/share)	1.10	1.85	2.48
P/E Ratio (x)	54.38	32.50	24.17
Price to Book Ratio (x)	8.41	6.83	5.45
Price to Sales Ratio (x)	12.42	8.87	6.66
EV/EBITDA (x)	42.11	25.15	19.44

Source: Tianfeng Securities estimate

Share price performance



Source: BigData

TFI Asset Management Limited would like to acknowledge the contribution and support provided by **Miao Xin Jun (缪欣君)**, **Li Lu Jing (李鲁靖)** and **Zhang Ruo Fan (张若凡)**, employee of Tianfeng Securities Co., Ltd.

The target price of Shanghai Weihong Electronic Technology (300508 CH) is forecasted by TFI Asset Management Limited based on current information. The target price may fluctuate with reference to market fluctuations or other relevant factors. TFI Asset Management Limited may release publications which are inconsistent with the opinions, speculations, and predictions contained herein.

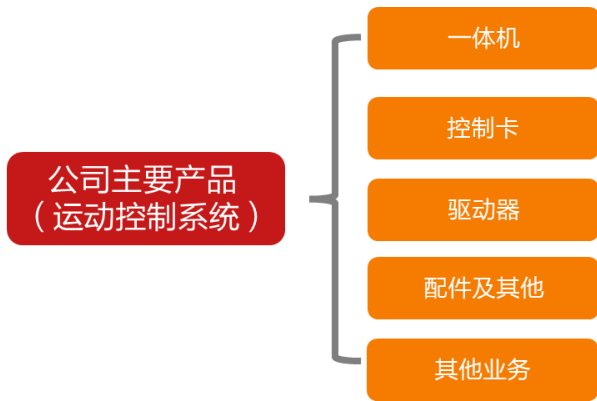
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维宏股份：工业运动控制系统领导者

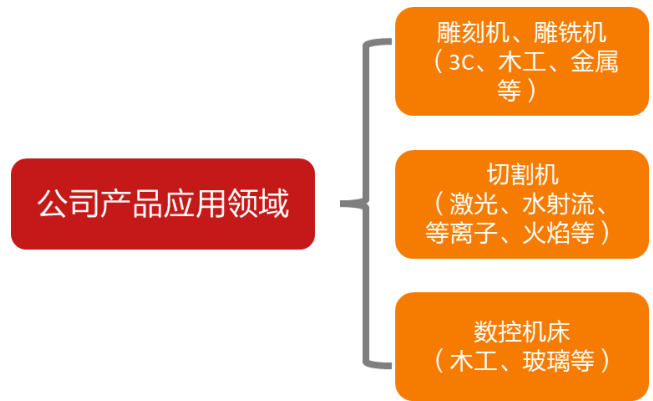
公司主要产品是工业运动控制系统，主要面向数控设备整机制造商。公司主要产品为工业运动控制系统、伺服驱动系统和工业物联网。公司产品主要应用于数控机床，所有运动控制产品均基于同一个软件平台，公司运动控制系统主要有雕刻雕铣控制系统、切割控制系统、机械手控制系统等，可应用于各类雕刻机、雕铣机、加工中心、水射流切割机、激光切割机、等离子切割机、火焰切割机、玻璃加工机床、工业机械手等领域。终端用户广泛分布于家具装饰行业、电子消费品行业、钣金行业、汽车行业、医疗器械、制鞋业、广告业、能源、冶金、交运等领域。

图 1：公司主要产品



资料来源：公司公告，天风证券研究所

图 2：公司产品应用领域



资料来源：公司招股说明书，天风证券研究所

公司数控系统产品是软硬结合的行业整体解决方案，包括**数控系统+CNC 控制单元+朗达控制器**，以硬件产品形式交付。CNC 控制单元按照形态分为一体机、控制卡，**按产品形态，公司产品主要分为三类：**

运动控制卡：运动控制卡是运动控制系统的底层控制算法的载体以及接口电路，用于连接步进电机驱动器或者伺服电机驱动器以及其他电信号。通常基于计算机标准总线，安装于计算机扩展槽中，需要整机生产商另行运动控制卡配备 PC 机，也可以方便使用 PC 机上安装的 CAD/CAM 等其他软件，从而系统灵活性较高。

一体机：一体机是集成运动控制卡、CPU 主板、显示器、专业操作面板等，基于工业级主板的独立运动控制器。优点是使用方便，并且避免了整机生产商在自行组合环节可能出现的问题，但缺点是价格较贵，整机生产商无法对工业 PC 机配置的型号进行自由选择。

伺服驱动器：伺服驱动器是用来控制伺服电机的一种控制器，主要应用于高精度定位系统。公司伺服驱动器产品，是一种全数字化伺服驱动器，采用高速数字信号处理器(DSP)，配合增益自动调整、自适应滤波器、指令平滑、扰动补偿、摩擦补偿等先进的控制功能和算法，实现转矩、转速、位置精确的数字控制，可以满足客户高速高精定位需求。

图 3：公司三类产品形态示意图



资料来源：公司官网，天风证券研究所

图 4：公司产品群架构图



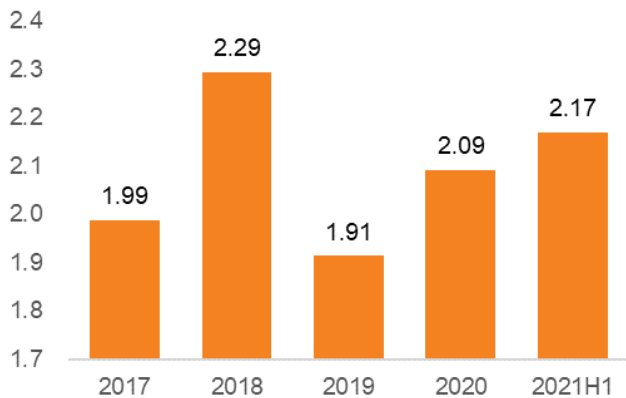
资料来源：公司公告，天风证券研究所

收购南京开通，补足数控车铣领域产品线。2021年1月，公司作价1.25亿元现金收购南京开通100%股权，开通数控系统和工业自动化产品已开发了多个系列数十个品种，产品主要应用于各类数控车床、数控铣床、车铣复合机床、加工中心等，终端应用领域主要包括汽车、能源、冶金、交运等众多工业领域，如磨床控制系统、刨床控制系统、滚齿机控制系统、淬火机控制系统、锯片机控制系统等。收购南京开通是对公司车铣领域产品线的补充，丰富公司产品组合以及对下游应用领域的覆盖度，提升整体竞争力。

2017-2020年公司营收在2亿元上下，投资收益变化导致利润波动较大。2017-2020年营收分别为1.99/2.29/1.91/2.09亿元，净利润分别为0.81/-0.27/0.66/0.29亿元。过去几年公司研发投入重点放在新软件平台—Phoenix平台的打造上，在新行业、新领域的拓展上投入较少，因此收入围绕2亿元波动，证券投资收益变化导致净利润波动较大。

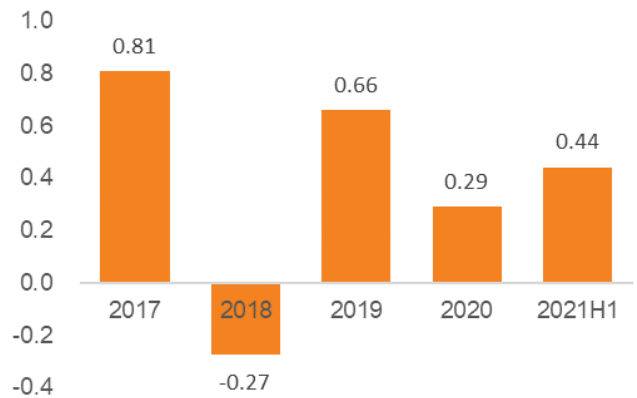
2021H1经营业绩高增，基本面拐点确立。2021H1公司实现营收2.17亿元，同比增长156.5%，实现归母净利润0.44，去年同期亏损496万，去除南京开通并表影响（并入6668万元收入，1340万元净利润）后，同口径下公司营收1.50亿元，同比增长77.7%，归母净利润3072万元，公司基本面拐点确立。

图 5：公司 2017-2021H1 营业收入（亿元）



资料来源：wind，天风证券研究所

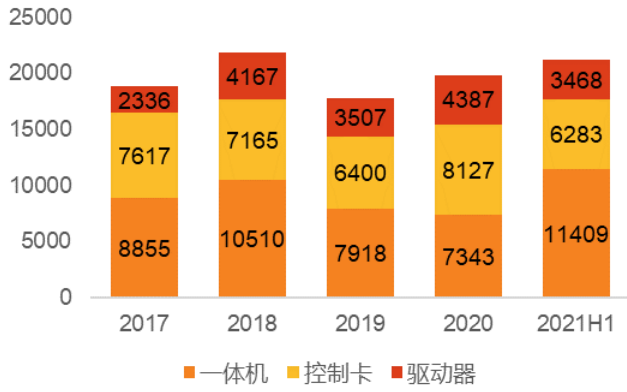
图 6：公司 2017-2021H1 归母净利润（亿元）



资料来源：wind，天风证券研究所

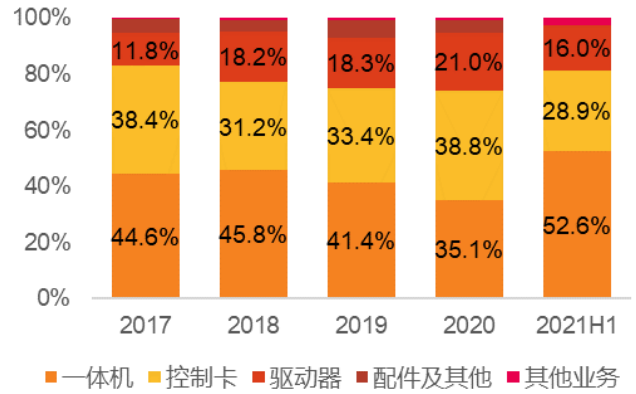
2021H1 三大业务线均高增，一体机增长尤为明显。公司主要收入来自于一体机、控制卡、驱动器三大产品线。一体机 2017-2020 年营业收入分别为 8855/10510/7918/7343 万元，占总营业收入比重为 44.6%/45.8%/41.4%/35.1%；控制卡 2017-2020 年营业收入分别为 7617/7165/6400/8127 万元，占总营业收入比重为 38.4%/31.2%/33.4%/38.8%，2017-2020 年一体机、控制卡两个产品线收入合计占总营业收入比例保持在 70%以上。2021H1 公司一体机、控制卡、驱动器营收分别为 11409/6283/3468 万元，同比增速分别为 303%/92.8%/99.1%，一体卡增速较快主要源于南京开通并入。

图 7：公司三大产品线收入（万元）



资料来源：wind，天风证券研究所

图 8：公司各产品收入占比



资料来源：wind，天风证券研究所

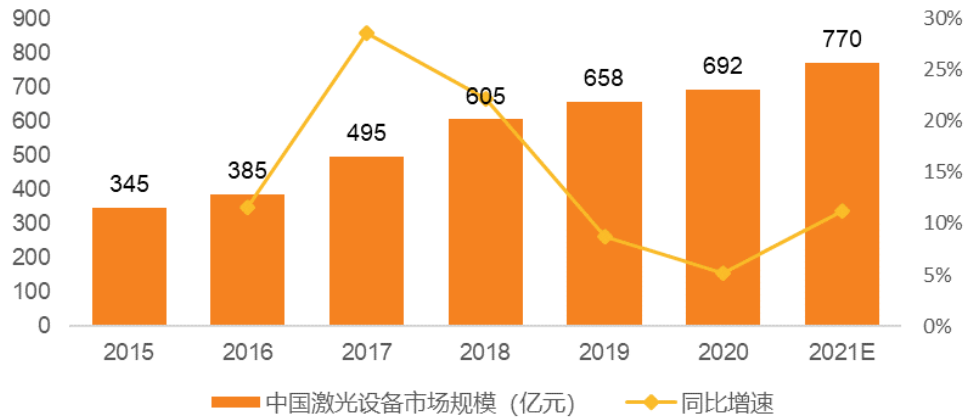
公司三大核心问题释疑：

激光切割控制系统市场规模如何？

激光是指特定频率的光辐射线通过受激反馈共振与辐射放大，产生的准直、单色、相干的定向光束。激光加工利用高强度的激光束，经光学系统聚焦后，通过激光束与加工工件的相对运动来实现对工件的加工，实现对材料进行打孔、切割、焊接、熔覆等加工。相对于传统加工工艺，激光加工具有适用对象广、材料变形小、加工精度高、低能耗、污染小、非接触式加工、自动化加工等优点，目前已成为一种新型制造技术和手段，广泛应用于材料加工、通讯、研发、军事、医疗等领域。

预计 2021 年中国激光设备市场规模达到 770 亿元。随着中国制造业对自动化、智能化需求提升，中国激光产业高速发展期。受益于各类金属及非金属部件加工的旺盛需求，近年来激光加工设备市场持续稳定增长。根据中国科学院武汉文献情报中心数据，2020 年疫情影响下我国激光设备中国激光设备市场依旧维持增长，预计 2021 年市场规模达到 770 亿元，同比增长 11.3%。

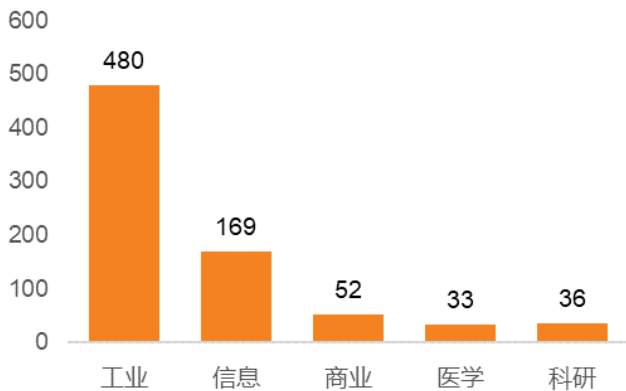
图 9：中国激光设备市场规模及增速



资料来源：中国科学院武汉文献情报中心，天风证券研究所

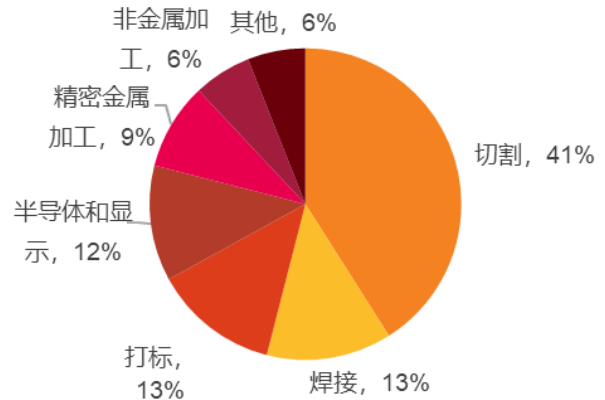
预计 2021 年我国激光切割设备市场规模达到 197 亿元。根据中国科学院武汉文献情报中心数据，激光设备主要应用于工业、信息、商业、医学、科研五大领域，其中工业是最大的应用领域，2020 年市场规模约 432 亿元，预计 2021 年达到 480 亿元。根据中国科学院武汉文献情报中心数据，切割是工业激光最大的应用场景，市场规模占比约 41%，预计 2021 年我国激光切割设备市场规模达到 197 亿元。

图 10：2021 年中国激光设备各应用领域市场规模（亿元）



资料来源：中国科学院武汉文献情报中心，天风证券研究所

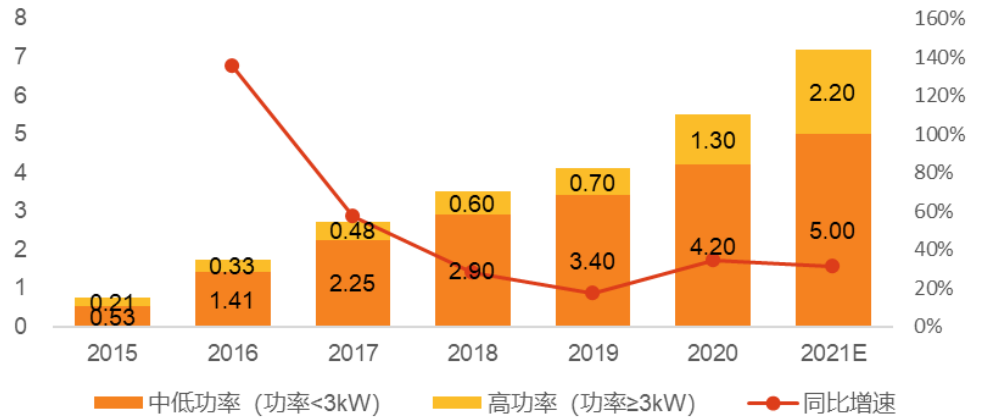
图 11：工业激光应用领域分布



资料来源：中国科学院武汉文献情报中心，天风证券研究所

我国激光切割设备销量持续高增，预计 2021 年销量 7.2 万台，激光切割高功率发展是趋势。高功率激光切割设备可以提升加工效率，目前中低功率激光切割设备主要用于机箱机柜、门业、杯业、五金制品、电子行业、家电厨具、广告装饰业等；高功率激光切割主要用于轨道机车、船舶行业、汽车行业的零部件制造、重型机械、模型制作，石油管道、建筑行业等，随着技术能力提升和成本降低，激光切割设备更高功率、更高精度、更大幅面是发展趋势。根据中国科学院武汉文献情报中心数据，2020 年我国激光切割设备销量 5.5 万台，同比增长 34%，预计 2021 年达到 7.2 万台，其中包括 5 万台中低功率（功率 3kW 以下）和 2.2 万台高功率（功率 3kW 及以上）。

图 12：中国激光切割设备销量（万台）



资料来源：中国科学院武汉文献情报中心，天风证券研究所

运动控制系统是激光设备的“大脑”。运动控制系统是自动化机械的核心，其功能是根据控制程序，经计算机处理后，实时控制执行机构的动作。运动控制系统一般由控制器、功率放大器与变换装置、电动机、负载，及相关的传感器等部件组成。控制器下达指令后，驱动器将其转化为能够运行电机的电流，驱动电机旋转，带动工作机械运行，同时，电机上的传感器经过信号处理将电机的实时信息反馈给控制器，控制器进行实时调整，从而保证整个系统的稳定运转。作为各类设备的大脑，运动控制系统决定了设备的精度、效率，是不同品牌设备形成差异化的重要环节。

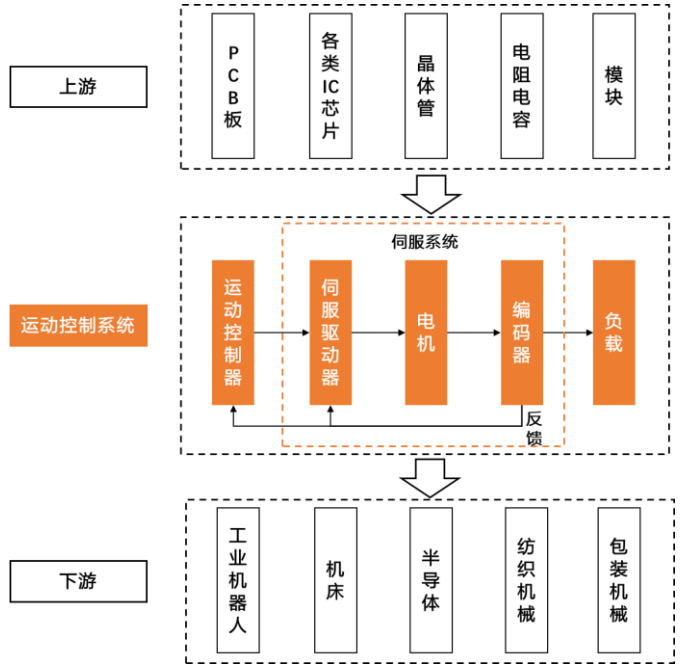
软件是运动控制系统核心。运动控制系统由硬件和软件两部分集成，硬件即工业控制板卡，包括主控单元、信号处理等部分，软件是控制算法。基于硬件的架构，将软件算法集成其中，形成最终的运动控制器。硬件的质量、结构，算法的优劣，共同决定了运动控制系统的精度、效率；在硬件的差异化不明显的情况下，软件算法是运动控制系统的关键。

图 13：激光行业产业链



资料来源：柏楚电子招股书，天风证券研究所

图 14：运动控制系统产业链



资料来源：柏楚电子招股书，天风证券研究所

测算 2020 年激光切割控制系统市场规模 13.42 亿元，预计 2025 年达到 37.23 亿元。我们假设未来激光切割控制系统销量持续增长，且高功率激光切割控制系统增速更快；假设激光切割控制系统单价持续降低，考虑高功率激光切割控制系统国产化率提升，单价降幅更大，测算 2020 年我国激光控制系统市场规模约为 13.42 亿元，2021 年将达到 18.16 亿元，预计 2025 年达到 37.23 亿元。按 2021 年控制系统市场规模与整机设备市场规模对比，控制系统占整机价值量约 9.2%。

表 1：激光切割控制系统销量及市场规模测算

	2018	2019	2020	2021E	2022E	2023E	2024E	2025E
中低功率控制系统销量（万台）	2.90	3.40	4.20	5.00	6.00	6.90	7.94	9.13
yoy	28.9%	17.2%	23.5%	19.0%	20.0%	15.0%	15.0%	15.0%
单价（万元）	1.46	1.42	1.35	1.28	1.22	1.17	1.13	1.1
yoy	-3.3%	-2.7%	-4.9%	-5.2%	-4.7%	-4.1%	-3.4%	-2.7%
中低功率控制系统市场规模（亿元）	4.23	4.83	5.67	6.40	7.32	8.07	8.97	10.04
yoy	24.6%	14.0%	17.4%	12.9%	14.4%	10.3%	11.1%	11.9%
高功率控制系统销量（万台）	0.60	0.70	1.30	2.20	3.30	4.62	5.78	6.93
yoy	25.00%	16.67%	85.71%	69.23%	50%	40%	25%	20%
单价（万元）	7.0	6.62	5.96	5.35	4.84	4.45	4.14	3.92
yoy	-6.6%	-5.5%	-9.9%	-10.4%	-9.4%	-8.2%	-6.8%	-5.3%
高功率控制系统市场规模（亿元）	4.20	4.63	7.75	11.76	15.99	20.55	23.93	27.19
yoy	16.7%	10.3%	67.4%	51.7%	35.9%	28.5%	16.5%	13.6%
激光切割控制系统销量（万台）	3.50	4.10	5.50	7.20	9.30	11.52	13.71	16.06
yoy	28.2%	17.1%	34.1%	30.9%	29.2%	23.9%	19.0%	17.1%
激光切割控制系统市场规模（亿元）	8.43	9.46	13.42	18.16	23.31	28.62	32.89	37.23
yoy	20.6%	12.2%	41.9%	35.3%	28.3%	22.8%	14.9%	13.2%

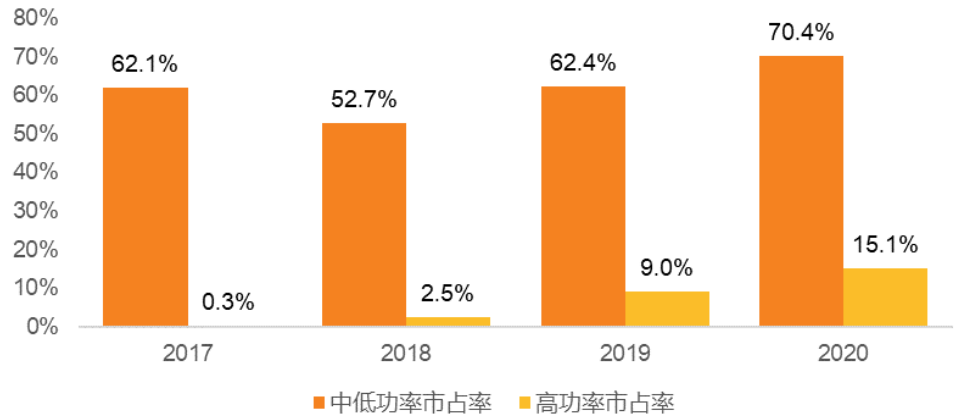
资料来源：中国科学院武汉文献情报中心，柏楚电子招股说明书，天风证券研究所

公司激光产品市场份额展望如何？

中低功率控制系统基本实现国产替代，高功率国产化率低。中低功率激光切割控制系统领域中，国产控制系统凭借着良好的产品使用性能和综合性价比，已经基本实现了进口替代，截至 2019 年，三家国产运动控制系统公司（柏楚电子、维宏股份、奥森迪科）国内中低功率市场占有率约为 90%。高功率激光切割控制系统领域中，德国倍福、PA、西门子等国际厂商依然占据绝对优势，2019 年国产激光运动控制系统仅占据约 10% 的市场份额，且国产厂商份额几乎全部为柏楚电子占有。

测算 2020 年柏楚中低功率市占率 70%，高功率市占率 15%。除极个别产品外，柏楚随动系统和板卡系统成套销售，我们以板卡系统销量代表中低功率控制系统销量，总线系统销量代表高功率控制系统销量，则 2020 年柏楚中低功率市占率 70.4%，高功率市占率 15.1%，近年柏楚电子中低功率控制系统市占率整体呈上升趋势，高功率市占率迅速提升。

图 15：柏楚电子激光切割控制系统市占率



资料来源：中国科学院武汉文献情报中心，柏楚电子招股说明书，天风证券研究所

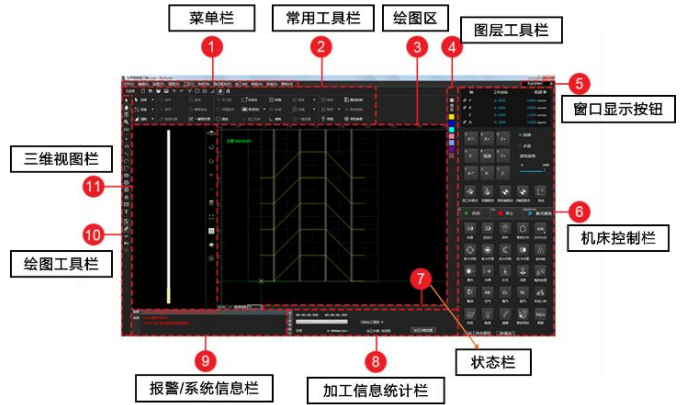
维宏补强激光产品线，中低功率市场份额提升至约 20%，高功率进入试用阶段。2019 年下半年公司投入资源开发 CAD/CAM 及套料软件，补强激光切割运动控制系统短板，经过一年多的升级迭代，功能得到提升，激光头部厂商开始使用，份额开始提升。目前维宏激光切割系统与柏楚在产品结构、控制精度、速度上相差不大，公司通过与头部客户深度合作做差异化产品。2021 年上半年维宏激光控制系统销售套数 5000 多套，同比增长 82%，市占率明显提升，2021 年中低功率市占率预计达到 17-21%。激光产品团队目前是维宏最大的产品团队，公司也将资源向激光产品线倾斜，目前激光切割领域的研发人员和资金在公司所有产品线中排名第一。公司激光领域产品包括板切控制系统、管切控制系统，2021 年开始进入万瓦级以上，目前最大功率到 2 万瓦，1-2 万瓦产品已经进入试用阶段。

图 16：维宏 NcStudio V15 激光切割系统



资料来源：公司官方微信公众号，天风证券研究所

图 17：维宏 NcStudio V15 激光切割系统软件主界面



资料来源：公司官网，天风证券研究所

国内首创板卡总线高功率激光平面切割系统，引领行业创新。维宏 LS6000M 系统为国内首创板卡总线高功率激光平面切割系统，专业应用于中高功率板材切割，软件内包含了随动控制系统、激光切割工艺处理、常用排样功能和激光加工控制。LS6000M 系统支持 6kw-20kw 大功率激光切割，同时提供切割头监控、气体监控、激光器监控，在使用大功率激光切割的同时提高安全性。配套维宏 WISE EtherCAT 协议伺服系统，可实现延迟更低，响应更快，适用于单台面、交换台等激光切割机。

图 18: LS6000M 激光平面切割系统功能



资料来源：公司官方微信公众号，天风证券研究所

合作激光头部客户差异化竞争，Phoenix 平台提高公司定制化能力。公司近些年研发新的软件平台-Phoenix 平台，经过几年的打磨，新平台已逐渐稳定，新产品可以在 Phoenix 平台进行开发。Phoenix 运动控制平台拥有全新的系统架构，具有较强的现场二次开发能力，理论上可以支持无限制组件扩展。该平台是行业运动控制业务的综合性支撑平台，让开发方式更加灵活，大幅缩短产品研发周期、有效降低产品的定制成本，有效增强了用户粘度和产品市场竞争力。

Phoenix 平台已于 2019 年基本完成转换，目前所有新产品均基于 Phoenix 平台开发，Phoenix 平台具有三个优势：1) 通过聚合底层技术通用性，比如多轴多通道、五轴技术、现场总线等，加快公司面向新行业新市场的产品开发速度；2) 可以将小定制研发下沉到销售端，贴近客户，快速响应；3) 高端定制，通过一些有实力的企业深度合作开发，帮助其建立独特的产品优势。

图 19: 维宏 Phoenix 高度定制化数控平台



资料来源：公司官网，天风证券研究所

2021 上半年维宏多个客户收入增速超过 10 倍，新客户开拓成效显著。2021 上半年公司控制卡产品前五大客户营收约 2508 万元，占控制卡总营收比例约 39%，同比增长 167%，有三家客户新进入前五大客户，其中两个客户营收同比增长超过 15 倍；一体机产品前五大客户营收约 927 万，占一体机总营收比例约 18%，同比增长 221%，有两家客户新进入五大客户，其中一个客户营收同比增长超过 18 倍。

表 2：维宏控制卡、一体机前五大客户情况（去除南京开通）

产品类别	前五大客户	2021H1 营收（万元）	占该产品类别比率	同比增速
控制卡	客户 1	1482.4	23.6%	91%
	客户 2	333.0	5.3%	259%
	客户 3	261.5	4.2%	1697%
	客户 4	217.3	3.5%	327%
	客户 5	213.8	3.4%	2625%
	小计	2508.0	39.9%	167%
一体机	客户 1	225.2	4.6%	126%
	客户 2	219.2	4.4%	272%
	客户 3	168.2	3.4%	1872%
	客户 4	159.5	3.2%	354%
	客户 5	154.6	3.1%	78%
	小计	926.8	18.8%	221%

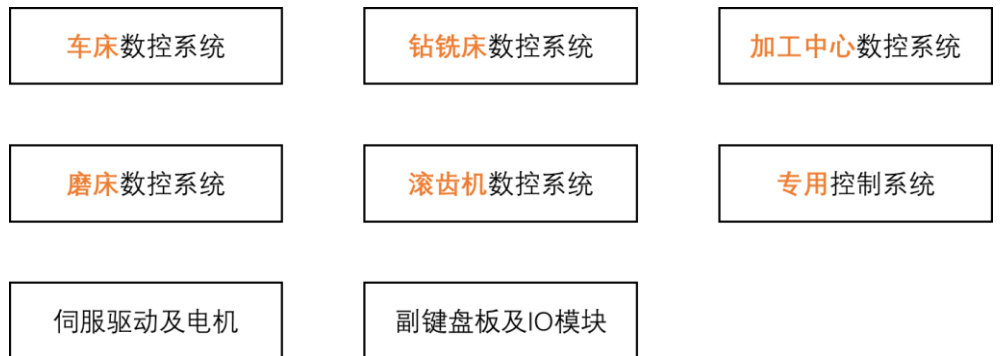
资料来源：公司公告，天风证券研究所

我们认为维宏与柏楚份额差距有望继续缩小，未来有望占据更大市场份额。维宏未来在激光领域的发展方向主要有三点：1) CAD/CAD 及套料软件等劣势部分加速优化；2) 完善高功率段产品，目前最高做到 2 千瓦；3) 与头部客户深度合作，满足客户定制化需求。2021 年维宏在激光切割控制系统领域份额增加，中低功率市占率有望达到 20%，我们认为未来其与柏楚差距有望进一步缩小，未来有望占据更大市场份额。

子公司南京开通成长性如何？

南京开通定位数控机床运动控制系统，“工业母机”核心供应商。南京开通成立于 2006 年，主要产品为数控机床控制系统，产品基本覆盖了机床工具行业各类数控车床、数控铣床、车铣复合机床、加工中心等领域，同时推出了各种专用控制系统，如磨床控制系统、刨床控制系统、滚齿机控制系统、淬火机控制系统、锯片机控制系统等。

图 20：南京开通主要产品

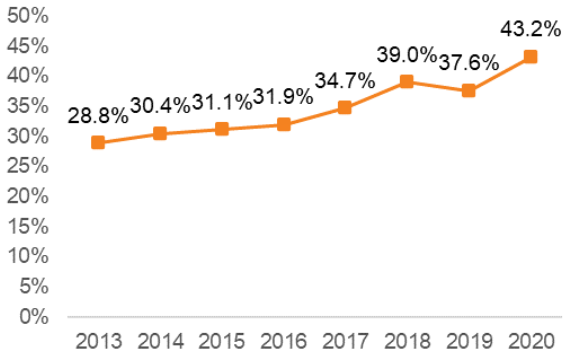


资料来源：南京开通官网，天风证券研究所

国资委会议强调科技创新，“工业母机”排序位于“高端芯片”之前。8 月 19 日，国资委召开扩大会议，分析总结当前央企经济运行情况，研究部署下阶段重点工作。会议强调：要把科技创新摆在更加突出的位置，推动中央企业主动融入国家基础研究、应用基础研究创新体系，针对工业母机、高端芯片、新材料、新能源汽车等加强关键核心技术攻关。工业母机即机床，国资委会议中将工业母机位于首位，排序在高端芯片、新材料、新能源汽车之前，体现其重要地位，我们认为我国高端数控机床产业链技术独立自主将是未来趋势。

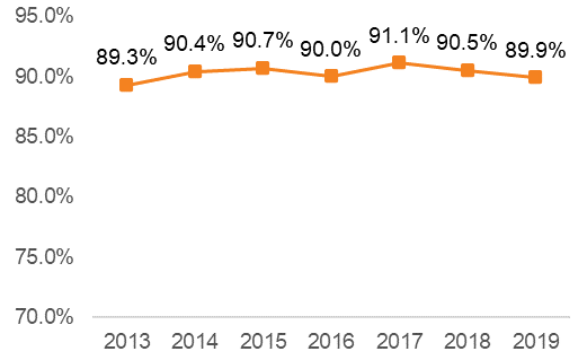
我国机床数控化率快速提升，但对比日本等发达国家仍有较大差距。机床数控化、高端化是长期趋势，我国新增机床数控率持续提升，以金属切削机床为例，根据国家统计局数据计算，2020 年我国新增数控金属切削机床占比达到 43.2%，相较 2019 年 37.6% 的比例有明显提升，但对比日本 2019 年新增机床数控化率已达 89.9%，我国机床数控化程度与海外发达国家仍有较大差距。

图 21：中国新增金属切削机床数控率



资料来源：wind，国家统计局，天风证券研究所

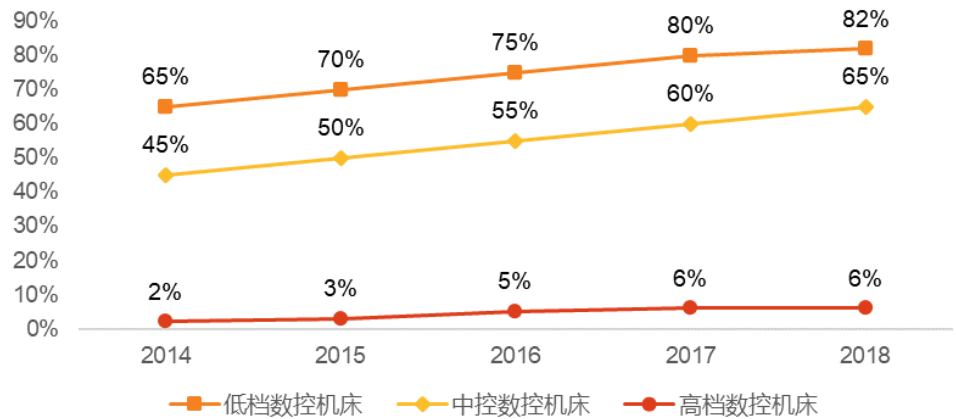
图 22：日本机床数控化率



资料来源：上海情报服务平台，日本机床工业协会，天风证券研究所

高端数控机床国产化率较低。高端数控机床需要实现高精度、高复杂性、高效高动态加工，主要应用于航空航天、精密模具、军工、电子、船舶等高端工业领域，中国制造业转型升级使得国内高端数据机床需求增加。根据科德数控招股书，目前我国数控机床企业主要定位于中低端，已在中低端领域实现了较大比例的国产替代，但直到 2018 高端数控机床国产化率仅约 6%，未来提升空间广阔。

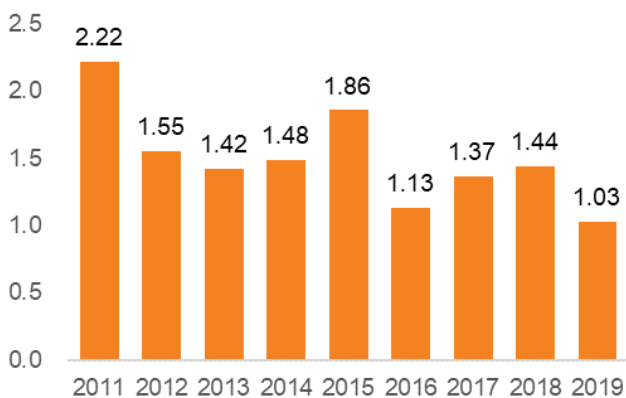
图 23：我国机床国产化率



资料来源：科德数控招股说明书，天风证券研究所

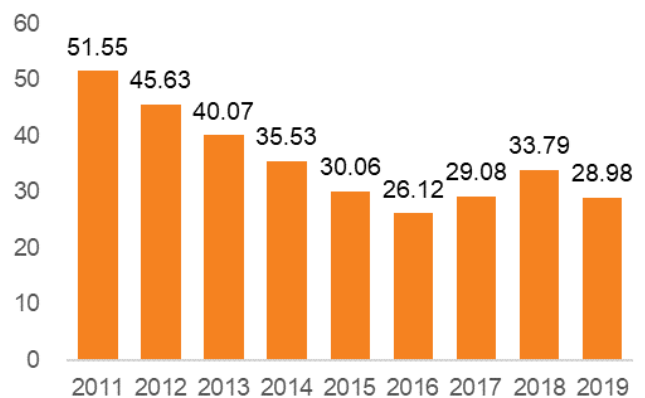
我国进口数控机床数量和金额呈现下降趋势，国产数控机床挤压海外品牌市场。近年我国数控机床进口数量和金额均呈现下降趋势，2019 年进口数控机床 1.03 万台，为近 9 年最低，相比 2011 年周期高点下降 53%，相比 2013 周期低点也下降约 27%，我们认为这说明国产高端数控机床正挤压替代海外品牌市场。

图 24：我国数控机床进口数量（万台）



资料来源：wind，海关总署，天风证券研究所

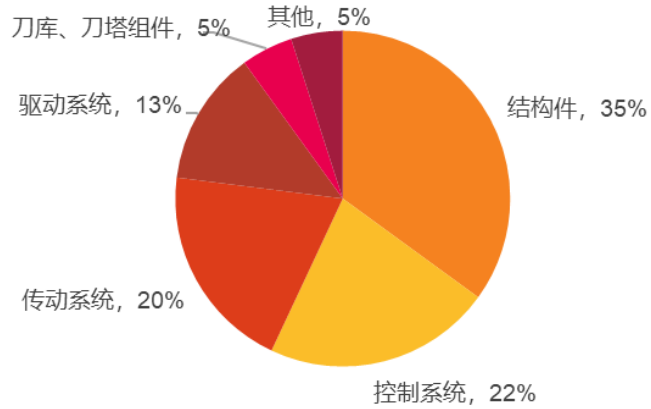
图 25：我国数控机床进口金额（亿美元）



资料来源：wind，海关总署，天风证券研究所

高端数控机床本质是工业软件，尤其是控制系统。数控机床由数控系统、传动系统、结构件、驱动系统、刀库刀塔组件等构成，其中控制系统用于实现各类数控机床的复杂运动控制，是数控机床的大脑，是最具价值的核心部件。高端数控系统通常由控制单元、驱动单元、电机单元、传感器单元构成完整闭环控制系统，对应的技术复杂，直接影响数据机床的精度、动态特性等重要参数。在高端数控机床整机价值分配中，控制系统占比约 20%-40%。

图 26：机床整机价值量分布

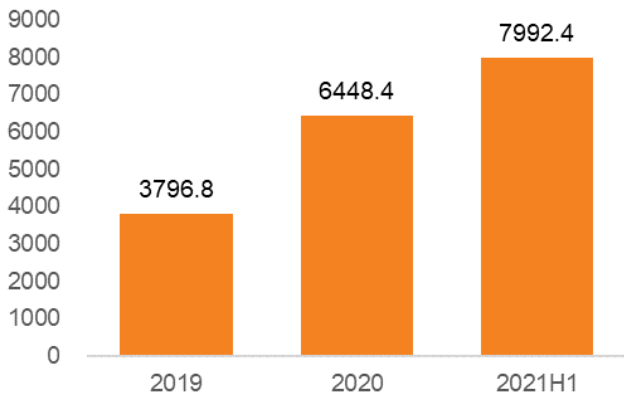


资料来源：贤集网，前瞻产业研究院，天风证券研究所

目前我国高端数控系统大部分来源于进口，如西门子、发那科等品牌，国内高端数控系统国产化率不足 10%。我们认为，**高端数控机床本质是工业软件，尤其是数控系统，数控系统国产化是高端数控机床国产化关键。**

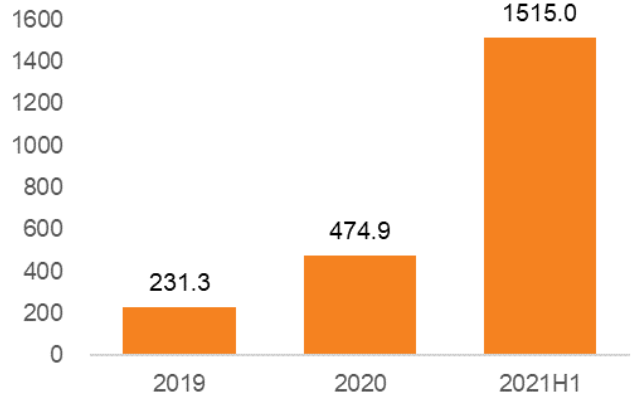
维宏赋能南京开通，高端化是未来方向。维宏主要致力于面向复杂曲面曲线的高速高精度运动控制技术，主要应用于能量加工领域、刀具加工领域，但是在传统的而且量大面广的车铣领域涉足未深。南京开通产品主要应用于各类数控车床、数控铣床、车铣复合机床、加工中心等领域，对维宏是横向产品补充。南京开通与维宏主营产品虽然应用于不同的下游细分应用领域，但是在软件的核心算法、软件和硬件的集成设计及工艺、生产管理等方面具有一定的互通。**我们认为，南京开通可以借助维宏 Phoenix 平台和研发力量，不断开发产品新功能，推出新产品，快速响应客户的定制化要求，进一步提高产品竞争力。**高端车铣复合领域是未来南京开通发展方向。2021 上半年南京开通实现营收 7992 万元，同比增长 176%，实现净利润 1515 万元，同比增长近 200%，我们认为南京开通上半年营收和净利润均超过去年全年，体现了维宏赋能作用。

图 27：南京开通营业收入（万元）



资料来源：公司公告，天风证券研究所

图 28：南京开通净利润（万元）



资料来源：公司公告，天风证券研究所

盈利预测与估值

我们预计，公司 2021-2023 年营收分别为 4.39/6.15/8.19 亿元，毛利率分别为 56.81%/57.63%/58.13%。考虑到南京开通在 2021 年 2 月开始并表，南京开通产品形式为一体机，我们将南京开通收入单拆，南京开通毛利率由 2021 上半年公司一体机营收及毛利率测算。2021-2023 年各产品收入增速及毛利率假设如下：

表 3：公司营收及毛利率预测

	2019	2020	2021E	2022E	2023E
一体机（百万元）	79.18	73.43	102.80	133.64	167.05
yoy	-24.67%	-7.26%	40%	30%	25%
毛利率	67.99%	68.86%	68%	68%	68%
控制卡（百万元）	64.00	81.27	130.03	195.05	273.07
yoy	-10.67%	26.98%	60%	50%	40%
毛利率	80.53%	79.88%	79%	80%	80%
驱动器（百万元）	35.07	43.87	65.81	92.13	119.77
yoy	-15.86%	25.10%	50%	40%	30%
毛利率	28.84%	31.64%	28%	28%	28%
配件及其他（百万元）	11.73	9.58	9.58	11.50	12.65
yoy	22.24%	-18.40%	0%	20%	10%
毛利率	42.51%	39.34%	36%	36%	36%
其他业务（百万元）	1.37	1.10	1.1	1.1	1.1
yoy	8.57%	-19.81%	0%	0%	0%
毛利率	44.55%	44.55%	44.55%	44.55%	44.55%
南京开通（百万元）			130	182	245.7
yoy				40.00%	35.00%
毛利率			42.00%	42.50%	43.00%
总营收（百万元）	191.35	209.24	439.32	615.41	819.33
yoy	-16.55%	9.35%	109.96%	40.08%	33.14%
毛利率	63.28%	63.45%	56.81%	57.63%	58.13%

资料来源：wind，天风证券研究所（注：一体机不包括南京开通产品；南京开通 2021 年 2 月开始并表，2021 年营收为并表营收）

预计公司 2021-2023 年净利润分别为 1.00/1.68/2.26 亿元。我们认为公司费用相对刚性，考虑到并购南京开通，以及公司 Phoenix 平台搭建完成，2021 收入体量大幅拓张等因素影响，我们预计公司 2021 年销售、管理、研发费用率有较大幅度降低，2022-2023 年维持不变。

表 4：公司盈利预测

	2019	2020	2021E	2022E	2023E
营业收入（百万元）	191.35	209.24	439.32	615.41	819.33
同比增速	-16.55%	9.35%	109.96%	40.08%	33.14%
净利润（百万元）	65.87	29.08	100.37	167.92	225.79
同比增速		-55.85%	245.11%	67.30%	34.46%

资料来源：wind，天风证券研究所

2022 年公司目标市值 92 亿元。在激光切割行业快速增长背景下，公司 2021 上半年激光切割领域产品、客户均有突破，中低功率产品市占率约 20%，1-2 万瓦高功率产品也开始试用，我们认为未来公司激光切割控制系统市场份额有望持续提升。同时，高端机床控制系统有较大国产化空间，公司收购南京开通后，基于自身平台和研发能力为其赋能，南京开通向高端化方向发展，成长空间广阔。我们选取工业自动化、工业运动控制系统公司柏楚电子、埃斯顿、汇川技术作为可比公司，给予 2022 年 55X PE，2022 年目标市值 92 亿元，目标价 101 元。

表 5：可比公司估值

代码	公司简称	PE		
		2021E	2022E	2023E
688188.SH	柏楚电子	83.12	61.38	46.41
002747.SZ	埃斯顿	90.30	60.41	43.34
300124.SZ	汇川技术	57.19	43.12	33.32
均值		76.87	54.97	41.02

资料来源：wind，天风证券研究所

风险提示

1. 行业景气度不及预期

公司产品下游应用木工、3C、金属等行业具备一定周期性，若下游行业景气度不及预期，可能影响公司产品销售。

2. 激光切割产品研发及客户拓展不及预期

公司激光切割产品向高功率段发展，目前仍在客户试用阶段，若产品研发、客户拓展不顺利，激光切割产品发展将收到影响。

3. 行业竞争加剧

目前激光切割行业增速较快，若未来竞争加剧，一定程度上面临价格战风险，影响公司盈利能力。

4. 预测假设具有主观性

报告中对于未来激光切割控制系统销量、价格等预测，具有一定主观性。

Financial forecast summary

Balance Sheet (RMBm)	2019	2020	2021E	2022E	2023E	Income statement (RMBm)	2019	2020	2021E	2022E	2023E
Cash and Cash Equivalents	13.29	110.36	35.15	157.41	113.31	Revenue	191.35	209.24	439.32	615.41	819.33
Trade, Notes and Other receivables	19.56	34.73	129.18	87.37	181.48	Cost of Sales	70.26	76.48	189.73	260.72	343.05
Prepayments	2.10	2.06	8.26	5.93	12.73	Business Taxes and Surcharges	2.49	2.32	4.87	6.82	9.08
Inventories	23.57	27.61	116.31	81.45	178.76	Operating Expenses	19.90	17.48	24.16	30.77	40.97
Other Current assets	360.64	183.53	191.09	189.46	195.17	Administrative Expenses	37.07	35.77	39.54	49.23	69.64
Total Current Assets	419.15	358.29	479.98	521.62	681.45	R&D Expenses	69.61	62.89	68.10	86.16	114.71
Long-Term Equity Investments	0.00	0.00	0.00	0.00	0.00	Financial Expense	2.57	1.63	4.89	4.86	(0.18)
Non-Current Assets	101.29	98.30	161.07	223.54	272.82	Impairment Losses	(0.65)	(0.82)	(1.00)	0.00	0.00
Construction-In-Progress	11.18	118.52	107.11	112.27	97.36	Gain/(loss) of Fair Value Change	47.66	(7.76)	(3.52)	1.68	0.06
Intangible Assets	44.57	42.50	40.22	37.94	35.66	Net Investment Income	29.50	15.34	5.00	5.00	5.00
Other Current assets	30.24	25.04	21.27	17.82	17.82	Other Current assets	(159.80)	(28.54)	(2.96)	(13.35)	(10.11)
Total Non-Current Assets	187.28	284.36	329.67	391.56	423.66	Operating income	72.74	34.46	110.52	183.53	247.12
Total Assets	606.43	642.65	809.65	913.18	1,105.11	Non-Operating Revenue	1.50	0.26	1.00	1.00	1.00
Short-Term Loan	25.54	0.00	78.82	0.00	0.00	Non-Operating Expenses	0.19	0.00	0.00	0.00	0.00
Trade Payables and Other Payables	17.15	48.56	23.50	75.52	54.77	Profit Before Tax	74.05	34.71	111.52	184.52	248.12
Other Current assets	23.23	29.50	37.23	33.30	44.19	Income Taxes	8.18	5.63	11.15	16.61	22.33
Total Current Liabilities	65.92	78.06	139.55	108.82	98.96	Net Profit	65.87	29.08	100.37	167.92	225.79
Long-Term Loan	0.00	0.00	15.82	0.00	0.00	Net Profit Attributable to NCI	0.00	0.00	0.00	0.00	0.00
Bonds Payable	0.00	0.00	0.00	0.00	0.00	Net Profit Attributable to The Parent	65.87	29.08	100.37	167.92	225.79
Other Current assets	4.51	5.24	5.24	5.24	5.24	EPS (RMB)	0.72	0.32	1.10	1.85	2.48
Total Non-Current Liabilities	4.51	5.24	21.05	5.24	5.24						
Total Liabilities	70.43	83.30	160.60	114.06	104.20	Financial ratio	2019	2020	2021E	2022E	2023E
Non-Controlling Interest	0.00	0.00	0.00	0.00	0.00	Growth					
Share Capital	90.91	90.91	90.91	90.91	90.91	Revenue	-16.55%	9.35%	109.96%	40.08%	33.14%
Capital Reserves	166.04	166.04	166.04	166.04	166.04	Operating income	-295.29%	-52.63%	220.74%	66.06%	34.65%
Retained Earnings	445.09	468.44	558.14	708.21	910.00	Net Profit Attributable to The Parent	-340.20%	-55.85%	245.11%	67.30%	34.46%
Other Current assets	(166.04)	(166.04)	(166.04)	(166.04)	(166.04)	Profitability					
Total Equity	536.00	559.36	649.05	799.12	1,000.91	Gross Profit Margin	63.28%	63.45%	56.81%	57.63%	58.13%
Total Equity and Liabilities	606.43	642.65	809.65	913.18	1,105.11	Net Profit Margin	34.42%	13.90%	22.85%	27.29%	27.56%
						ROE	12.29%	5.20%	15.46%	21.01%	22.56%
						ROIC	35.38%	17.65%	42.00%	33.57%	50.24%
						Solvency					
Cash Flow Statement (RMBm)	2019	2020	2021E	2022E	2023E	Debt to Asset Ratio	11.61%	12.96%	19.84%	12.49%	9.43%
Net Profit	65.87	29.08	100.37	167.92	225.79	Net Debt Ratio	2.29%	-19.73%	9.17%	-19.70%	-11.32%
Depreciation & Amortization	11.87	11.88	10.91	14.66	17.90	Current Ratio	6.36	4.59	3.44	4.79	6.89
Financial Expense	2.54	2.08	4.89	4.86	(0.18)	Quick Ratio	6.00	4.24	2.61	4.04	5.08
Investment Gain/(Loss)	(29.59)	(15.34)	(5.00)	(5.00)	(5.00)	Operation					
Change of Working Capital	15.74	15.90	(206.94)	130.49	(213.84)	Receivable Turnover Ratio	4.73	7.71	5.36	5.68	6.10
Others	(28.90)	(8.17)	(3.52)	1.68	0.06	Inventory Turnover Ratio	6.42	8.18	6.11	6.22	6.30
Cash Flows from Operating Activities	37.52	35.42	(99.29)	314.60	24.72	Asset Turnover Ratio	0.33	0.34	0.61	0.71	0.81
CapEx	58.97	108.63	60.00	80.00	50.00	Indicator Per Share					
Long Term Investments	0.00	0.00	0.00	0.00	0.00	EPS	0.72	0.32	1.10	1.85	2.48
Other Current assets	(131.42)	(15.56)	(115.00)	(155.00)	(95.00)	Operating Cash Flow Per Share	0.41	0.39	-1.09	3.46	0.27
Cash Flows from Investing Activities	(72.44)	93.07	(55.00)	(75.00)	(45.00)	Net Asset Per Share	5.90	6.15	7.14	8.79	11.01
Proceeds from Issuance of Debt	25.54	0.00	94.63	0.00	0.00	Valuation					
Proceeds from Issuance of Equity	(2.57)	(1.63)	(4.89)	(4.86)	0.18	PE	82.85	187.65	54.38	32.50	24.17
Other Current assets	(15.54)	(29.44)	(10.67)	(112.48)	(24.00)	PB	10.18	9.76	8.41	6.83	5.45
Cash flows from financing activities	7.43	(31.07)	79.08	(117.34)	(23.82)	EV/EBITDA	15.35	19.78	42.11	25.15	19.44
Impact of FX	0.00	0.00	0.00	0.00	0.00	EV/EBIT	16.11	21.42	46.09	27.10	20.85
Net increase (decrease) in cash, cash equivalents and restricted cash	(27.49)	97.42	(75.22)	122.26	(44.10)						

Source: Company data, Tianfeng Securities estimate

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		Underperform	Expected increase of industry index below -5%

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