

## 中国科技战略 China Technology Strategy

# 华为全连接大会聚焦智能化目标，秋季发布会全场景设备再升级

HUAWEI CONNECT 2023 Focused on Intelligent Goals, All-scenario Devices Further Upgraded at Autumn Launch Conference

Barney Yao

Kai Wang, CFA

barney.sq.yao@htisec.com

k.wang@htisec.com

### 热点速评 Flash Analysis

(Please see APPENDIX 1 for English summary)

#### 事件

2023年9月20-22日，华为于上海举办全连接大会，华为副董事长、轮值董事长、CFO孟晚舟于大会开幕式发表有关智能化目标的演讲，强调华为致力于打造中国算力底座，为国产大模型提供算力、平台和开发工具等支持。9月25日华为秋季新品发布会发布多款智能产品及全新技术，“1+8+N”全场景战略再出发。

#### 点评

**All Intelligence 全面智能化目标三大板块指引下打造坚实算力底座，推进千行万业智能化转型，以人才为本实现产教融合。**“所有对象可联接”包括物理实体及逻辑虚拟概念、传统终端和装置、数字化设备；“所有应用可模型”通过大模型范式加速智能应用服务用户及社会；“所有决策可计算”的核心为通过算力的覆盖激发数据潜力的叠加及释放。大模型时代下 AI 技术的实用性及运用周期大幅优化，华为将持续提升“软硬芯边端云”的融合能力，通过在计算、存储、网络、能源等领域的领先优势，有望改变传统的服务器堆叠模式，以系统架构创新思路打造 AI 集群，实现算力、运力、存力的一体化设计，突破算力瓶颈，为各行各业提供可持续算力，鼓励每个组织自行训练开发行业大模型。华为坚信以“技术为根，人才为本”，与 2600 多所高校共建 ICT 学院，教师数量超过 11000 人，每年培养学生 20 万人，同时与中国 72 所高校深化“智能基座”项目，开设超过 1600 门课程，覆盖 50 多万学生，未来将通过“创新 2.0 机制”与高校联合创新，支持理论研究和前沿探索，实现技术突破和人才涌现。

**盘古汽车大模型缩短自动驾驶学习周期至 2 天内，赋能多个业务场景，实现智能化再加速。**21 日在大会发布盘古大模型，从 NLP 到 CV 实现多模态转换，即将在矿山、政务、气象、汽车、软件开发等场景逐步落地。其中汽车大模型覆盖汽车设计、智能座舱、售后维修、企业管理、生产营销、研发等多个业务场景，大模型涵盖 5 大技能，包括设计标准文档问答、多模态内容理解与生成、多任务理解、代码生成/补全、智能化软件交互集成，致力于让每位车企员工拥有“属于自己的专家助手”；大模型有望解决乘用车自动驾驶领域各类难题，通过构建数字孪生空间，自动生成各种复杂场景样本并加以学习，自动驾驶 Corner Case 学习周期实现从 2 周以上缩短至 2 天内；一汽解放已将盘古汽车行业大模型与现有业务深度融合，重塑人机协同新型生产关系。盘古汽车大模型在商专车场景下可模拟环境扬尘、上下长坡、大曲率转弯等场景并加以自动标注，4 人月即可对新的重卡车型完成适配，华为商专车自动驾驶云服务目前已在新疆疆纳和内蒙古伊敏露天煤矿投用，60 吨重卡横向误差小于 0.2 米、精准停靠误差小于 0.1 米，使无人驾驶重卡在复杂环境下高效安全地工作。我们期待盘古大模型的应用及商业化落地，重塑下游行业生态，解决客户各类难题。

**F5G 创新产品方案赋能 AI 行业运用，携手客户及合作伙伴助力智能化升级。**在 9 月 21 日的 F5G 峰会上，华为发布了面向园区场景的 F5G 全光园区 2.0 解决方案，采用 XGS-PON Pro 技术，传输速率高达 12.5G/25G 到房间、2.5G/10G 到 AP、2.5G 到桌面，旨在建立绿色、万兆级全光网络，加速园区智能化进程；同时推出电力和交通行业的小型化 ONT 解决方案，使用的 OSU 技术提升带宽超过 10 倍，简化网络规划和运维复杂度，降低建设成本；此外，华为还发布了光视联动多维感知周界防护方案，结合光视联动技术和安全系统，提升周界防护能力。

**智慧工厂升级至 2.0 版本，行业领先云服务搭建 AI 时代云底座，ICT 产业链未来可期。** 华为制造与大企业军团 COO 王致雅介绍了面向大企业的解决方案及咨询能力，一站式研发平台作业效率提升 50%以上，研发总资源量下降 40%，软件漏洞安全大幅提升。同时华为升级智慧工厂 2.0 解决方案，基于一云一网一平台+N 应用的架构，昇腾和鲲鹏等云服务能力将提升工厂质量检测、生产排程等场景的 AI 算法训练和部署效果，加速工厂智能化水平；此外，华为提出全栈工业 AI 平台方案，通过开放架构将华为的算力、算法和智能化平台能力应用于汽车、软件、家电等行业的智能化产品创新；为满足企业数字化转型需求，华为提供数字化领导力培训、数字化转型工作坊和数字化转型与 ICT 技术咨询等培训和咨询服务能力；同时，华为与制造业企业、人工智能企业、高校科研机构 and 联盟智库等组织共同发起了"制造业 AI 应用创新联合体"，旨在加速制造业技术创新和产业化落地，推动广泛应用和价值发挥。ICT 的基础设施的智能化逐步走向研发创新、生产供应、销售服务等多项场景的智能化，有望开辟产品智能化的新阶段。

**秋季新品发布会麒麟 A2 芯片首发，HarmonyOS NEXT 鸿蒙原生系统将全面启动，全场景战略再出发。** 海思麒麟 A2 蓝牙芯片首发，应用于手表、耳机等穿戴产品，采用双 DSP 架构，算力提升 50%，时延降低 25%，分辨率精度提升 88%，高清空间音频体验全面提升；Matepad Pro 13.2 预期搭载麒麟 9000s 芯片；首款隔空触控电视智慧屏 V5 Pro 搭载鸿鹄 900 芯片，配备超小型天线，灵犀空间定位等自研技术，为首款支持绝对指向交互的大屏。智界 S7 搭载 HarmonyOS 4 智能座舱、华为高阶智能驾驶，将在今年 11 月下旬正式发布；华为旗舰 SUV 问界 M9 和鸿蒙原生应用将于 12 月发布。华为常务董事、终端 BG CEO、智能汽车解决方案 BU 董事长余承东表示，华为在高阶智能驾驶领域遥遥领先，鸿蒙原生应用全面启动将带来历史性跨越，华为力争成为移动应用底层巨头，向苹果和谷歌看齐。

### 风险

产品线供应恢复不及预期，政策落地不及预期，技术发展不及预期。

全连接大会核心产品亮点

图 1 智慧工厂解决方案



资料来源：公司官网，海通国际

图 2 F5G 全光园区 2.0 解决方案



资料来源：公司官网，海通国际

图 3 昇腾计算软硬件平台



资料来源：公司官网，海通国际

图 4 鲲鹏通用计算平台



资料来源：公司官网，海通国际

图 5 盘古系列 - 汽车大模型解决方案



资料来源：公司官网，海通国际

图 6 高品质万兆工业园区网络



资料来源：公司官网，海通国际

## 秋季新品发布会核心亮点

**鸿蒙原生系统将全面启动，“1+8+N”全场景战略再出发，以手机为中心技术向端、管、云、芯构筑全场景智慧生态。**软件方面，华为宣布即将发布鸿蒙系统的下一个版本，名为 HarmonyOS NEXT，标志着鸿蒙原生应用的全面启动。同时，华为还宣布已经有超过六千万设备安装了 HarmonyOS 4.0，成为迄今升级速度最快的版本。与此同时，华为决定不再兼容安卓应用程序，这意味着华为的软件生态系统正在逐渐脱离安卓平台，加速迈向独立发展的道路。这一举措将进一步推动华为软件生态系统的发展，为用户提供更加独特和优化的应用体验。硬件方面，华为围绕“8”进行全场景设备全面更新，包括车机、音箱、耳机、手表/手环、平板、大屏、PC、AR/VR。自研芯片为全场焦点，重写华为产品定义能力。**自研芯片方面，华为首发麒麟 A2 蓝牙芯片和鸿鹄 900 电视芯片。**鸿鹄 900 芯片相比于行业旗舰电视芯片，在 CPU 性能方面提升了 81%，在 GPU 性能方面提升了 119%，在 NPU 性能方面提升了 212%，使电视在处理复杂任务和高级 AI 计算时表现更为出色。麒麟 A2 主要应用于手表、耳机等穿戴产品，采用双 DSP 架构，算力提升 50%，时延降低 25%，分辨率精度提升 88%，高清空间音频体验全面提升。该芯片此次首发并由新一代 Watch GT4 和 FreeBuds Pro 3 搭载，是既上代 GT 手表蓝牙主控芯片由外采恒玄 BES2500L 替代麒麟 A1 后华为自研蓝牙主控芯片的再度回归，我们认为，从此麒麟 9000S 到此次麒麟 A2 发布，标志着华为芯片自主可控能力全面提升，有望进一步强化供应链安全和韧性，保持软硬件协同发展，为“1+8+N”全场景战略保驾护航。

**智界 S7 正式亮相，旗舰 SUV 问界 M9 计划 12 月上市。**华为智选系列首款轿车智界 S7 正式亮相，该车由华为与奇瑞合作打造，定位为高能大空间智能轿跑，计划 11 月发布。智界 S7 首搭 HarmonyOS 4.0 智能座舱和华为 ADS 2.0 高级智能驾驶辅助系统，智界 S7 将在各个规格上超越特斯拉 Model S。同时，与赛力斯合作打造的旗舰 SUV 问界 M9 计划于今年 12 月上市。余承东表示，问界 M9 不仅是 1000 万以内最佳的 SUV，也是市面上最强大的 SUV 之一。该车采用先进的平台技术，有望成为奔驰 GLS 和路虎揽胜的有力竞争对手。

**高端自主设计品牌“非凡大师”发布 Mate60 RS 大师设计版、首款黄金智能腕表。**高端品牌方面，华为结束与保时捷设计的长期合作，并推出全新自主设计品牌“ULTIMATE DESIGN 非凡大师”，同时邀请刘德华担任品牌大使。手机方面推出 HUAWEI Mate60 RS，售价 11999 元起，相比普通版采用陶瓷稀土工艺和传奇星钻设计，并提供律师咨询等尊享权益。Mate 60 系列开启先锋计划以来，广受消费者喜爱并全系缺货，余承东表示华为正全力恢复手机生产及供应。手表方面推出首款黄金智能腕表 HUAWEI WATCH Ultimate Design 非凡大师，表身镶嵌 6 段 18k 黄金金条，支持双向北斗卫星消息、百米深潜，并拥有超长续航，起售价 21999 元。

**全新平板 Matepad Pro 13.2 英寸搭载麒麟 9000S 支持星闪技术产品。**华为在 8 月份的开发者大会上发布了近距离无线连接技术“星闪”，该技术具有低功耗、快速、低时延、稳定连接和广覆盖等优点。华为在此次发布会上展示了支持星闪技术的产品，包括华为 MatePad Pro 13.2 英寸平板电脑和新一代手写笔 HUAWEI M-Pencil。华为 MatePad Pro 13.2 英寸售价从 5199 元起，采用柔性 OLED 屏幕，支持 360Hz 触控采样率和至高 144Hz 高刷新率，重量仅为 580 克，厚度仅为 5.5 毫米，支持 88W 有线快充技术，搭载麒麟 9000S 处理器。作为全球首款采用星闪技术的终端产品，华为第三代手写笔 HUAWEI M-Pencil 配合全新 MatePad Pro 最高可支持万级压感，写出的线条粗细变化更细腻，笔尖出墨更顺畅，时延可低至 0ms，连接更快更稳定。

新一代智能电视 V5 Pro 搭载鸿鹄 900 电视芯片，创新交互方式带来突破性智能化体验。华为新一代智慧屏旗舰 V5 Pro 正式发布，搭载全新鸿鹄 900 芯片，采用 Super MiniLED 面板，支持 4K 分辨率和 120Hz 刷新率，85/98 英寸版本售价分别为 24999/36999 元。V5 Pro 引入全新“华为灵犀隔空遥控”，实现创新交互方式，用户可以在大屏上进行滑动、拖拽和点按等类似手机的触控操作。在鸿鹄 900 算力加持下，可实现“1080P 秒变 4K”，搭配 HUAWEI SOUND 智慧音响系统，音画体验全面升级。搭载鸿蒙 HarmonyOS 4 智能设备操作系统，支持设备协同交互丰富体验，实现“巨幕手机”。

麒麟 A2 芯片赋能“1+8+N”穿戴设备全场景生态。华为新一代 TWS 耳机 Freebuds Pro 3 搭载麒麟 A2 芯片，应用星闪核心技术和 L2HC 3.0 协议，蓝牙抗干扰能力提升 2 倍，可实现 1.5Mbps 音频信号的超 CD 级蓝牙无损传输，搭载静谧通话 2.0 并由中央音乐学院首席调音团专业调音，降噪、音质功耗全面升级，售价 1499 元。HUAWEI Watch GT4 同样搭载麒麟 A2 和 HarmonyOS 4，首发科学减脂塑形和女性周期智能预测功能，搭载脉搏波房颤和早搏提示软件，可实现更精确的轨迹记录能力及健康监测能力，46/41mm 版本分别售价 1588/1488 元起。其他方面，华为还发布了智能眼镜 2、路由等产品，智能眼镜 Eyewear 2 采用钛合金工艺的，搭载 HarmonyOS 4，支持手机、平板自动连接，同时配备智慧播报和颈椎健康检测等人工智能功能；新一代路由 BE3 Pro 支持最新 Wi-Fi 7 技术，无线速率可达 3600Mbps。

图 7 HUAWEI Mate60 RS 非凡大师版



资料来源：公司官网，海通国际

图 8 HUAWEI WATCH ULTIMATE DESIGN 非凡大师黄金智能腕表



资料来源：公司官网，海通国际

图 9 问界 M9



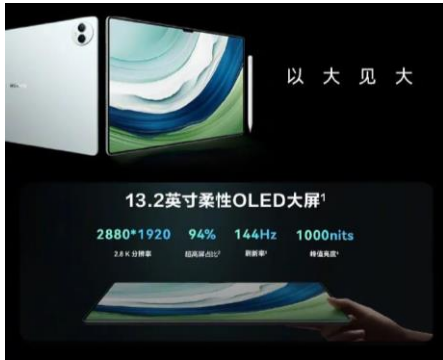
资料来源：公司官网，海通国际

图 10 智界 S7



资料来源：公司官网，海通国际

图 11 HUAWEI Matepad Pro 13.2



资料来源：公司官博，海通国际

图 12 HUAWEI V5 Pro 智能电视



资料来源：公司官网，海通国际

## APPENDIX 1

### Summary

#### Event

From September 20 to 22, 2023, Huawei held Huawei Connect 2023 in Shanghai. Huawei Vice Chairman, Rotating Chairman, and CFO Meng Wanzhou delivered a speech on the goals of intelligence at the opening ceremony of the conference, emphasizing that Huawei is committed to building China's computing power base, providing enhanced computing power, platform, development tools and other support for domestic large models. On September 25, Huawei's autumn new product launch conference released a variety of smart products and new technologies, and the "1+8+N" all-scenario strategy renewed.

#### Comments

**All Intelligence builds a solid computing power base under the guidance of the three major sectors of comprehensive intelligence goals, accelerates the intelligent transformation of thousands of industries, and realizes the integration of industry and education based on talents.** "All objects can be connected" includes physical entities and logical virtual concepts, traditional terminals and devices, and digital equipment; "All applications can be modeled" accelerate intelligent applications to serve users and society through the large model paradigm; the core of "All decisions can be calculated" is through the coverage of computing power stimulating the superposition and release of data potential. In the era of big models, the practicality and application cycle of AI technology have been greatly optimized. Huawei will continue to improve the integration capabilities of "software, hardware, edge, and cloud". Through its leading advantages in computing, storage, network, energy and other fields, Huawei is expected to change the traditional server stacking model using innovative system architecture ideas to build AI clusters to achieve integrated design of computing power, transportation capacity, and storage capacity, to break through computing power bottlenecks, provide sustainable computing power for all walks of life, and encourage each organization to train and develop industry leaders on their own model. Huawei firmly believes in "technology as the root, talent as the foundation". It has co-built ICT colleges with more than 2,600 universities, more than 11,000 teachers, and trains 200,000 students every year. At the same time, Huawei is deepening the "smart base" project with 72 universities in China. It has opened more than 1,600 courses, covering more than 500,000 students. In the future, it will jointly innovate with universities through the "Innovation 2.0 Mechanism" to support theoretical research and cutting-edge exploration to achieve technological breakthroughs and the emergence of talents.

**Pangu large automobile model shortens the autonomous driving learning cycle to two days, empowers multiple business scenarios, and accelerates the process of intelligentization.** The Pangu large model was released at the conference on the 21st, realizing multi-modal conversion from NLP to CV, and will be gradually implemented in scenarios such as mining, government affairs, meteorology, automobiles, and software development. Among them, the large car model covers multiple business scenarios such as car design, smart cabin, after-sales maintenance, business management, production and marketing, R&D, etc. The large model covers five major skills, including design standard document question and answer, multi-modal content understanding and generation, and multi-tasking. Understanding, code generation/completion, and intelligent software interactive integration are committed to allowing every car company employee to have "their own expert assistant"; large models are expected to solve various problems in the field of autonomous driving of passenger cars, by building a digital twin space, automatically generates various complex scene samples and learns from them, shortening the self-driving Corner Case learning cycle from more than 2 weeks to less than 2 days; FAW Jiefang has deeply integrated the Pangu Automobile industry model with existing business to reshape a new type of production relationship of human-machine collaboration. Pangu large automobile model can simulate environmental dust, long up and down slopes, large curvature turns and other scenarios in commercial and private vehicle scenarios and then automatically label them. It can complete the adaptation to new heavy truck models in 4-man-month. Huawei's commercial and private vehicle autonomous driving cloud service currently has been put into use in the open-pit coal mines in Jiangna (Xinjiang province) and Yimin (Inner Mongolia). The lateral error of the 60-ton heavy truck is less than 0.2 meters, and the precise parking error is less than 0.1 meters, allowing unmanned heavy trucks to work efficiently and safely in complex environments. We look forward to the application and commercialization of Pangu's large model, reshaping the downstream industry ecology and solving various problems for customers.

**F5G innovative product solutions empower the AI industry and work with customers and partners to promote intelligent upgrades.** At the F5G Summit on September 21st, Huawei released the F5G all-optical campus 2.0 solution for campus scenarios, using XGS-PON Pro technology, with transmission rates as high as 12.5G/25G to the room, 2.5G/10G to the AP, 2.5 G to the desktop, aiming to build a green, 10G all-optical network to accelerate the process of campus intelligence; it also launched miniaturized ONT solutions for the power and transportation industries, using OSU technology to increase bandwidth by more than 10 times and simplify network planning and operation, dimension complexity reduces construction costs; Huawei also released a light-vision linkage multi-dimensional sensing perimeter protection solution, which combines light-vision linkage technology and security systems to improve perimeter protection capabilities.

**The smart factory has been upgraded to version 2.0, and industry-leading cloud services have built a cloud base for the AI era. The future of the ICT industry chain is promising.** Wang Zhiya, COO of Huawei Manufacturing and Large Enterprise Corps, introduced solutions and consulting capabilities for large enterprises. The operating efficiency of the one-stop R&D platform has increased by more than 50%, the total R&D resources have dropped by 40%, and software vulnerability security has been greatly improved. At the same time, Huawei has upgraded its Smart Factory 2.0 solution. Based on the architecture of one cloud, one network, one platform + N applications, cloud service capabilities such as Ascend and Kunpeng will improve the AI algorithm training and deployment effects in scenarios such as factory quality inspection and production scheduling, and accelerate the level of factory intelligence; Huawei has proposed a full-stack industrial AI platform solution, applying Huawei's computing power, algorithms, and intelligent platform capabilities to intelligent product innovation in industries such as automobiles, software, and home appliances through an open architecture. To meet the needs of enterprise digitalization and transformation, Huawei provides training and consulting service capabilities such as digital leadership training, digital transformation workshops, and digital transformation and ICT technology consulting. At the same time, Huawei co-sponsored the initiative with manufacturing companies, artificial intelligence companies, university research institutions, and alliance think tanks and other organizations. The "Manufacturing AI Application Innovation Consortium" was established, aiming to accelerate technological innovation and industrialization in the manufacturing industry, and promote widespread application and value development. The intelligence of ICT infrastructure is gradually moving toward the intelligence of multiple scenarios such as R&D and innovation, production supply, and sales services, which is expected to open up a new stage of product intelligence transformation.

**At the autumn new product launch conference, the Kirin A2 chip was launched, and the HarmonyOS NEXT operating system fully launched, and the full-scenario strategy renewed.** HiSilicon Kirin A2 Bluetooth chip is launched for the first time and is used in wearable products such as watches and headphones. It adopts a dual DSP architecture, computing power rose by 50%, latency reduced by 25%, resolution accuracy increased by 88%, and comprehensively improve the high-definition spatial audio experience; Matepad Pro 13.2 is expected to be equipped with Kirin 9000s chip; the first air-to-air touch TV smart screen V5 Pro is equipped with Honghu 900 chip, and ultra-small antenna, Lingxi spatial positioning and other self-developed technologies. It is the first large screen to support absolute pointing interaction. The Luxeed S7 is equipped with HarmonyOS 4 smart cabin and Huawei's high-end smart driving and will be officially released in late November this year; Huawei's flagship SUV AITO M9 and Harmony's operating applications will be released in December. Yu Chengdong, Managing Director of Huawei, CEO of Terminal BG, and Chairman of Smart Car Solutions BU, said that Huawei is far ahead in the field of high-end intelligent driving, and the full launch of Harmony operating applications will bring a historic upsurge. Huawei strives to become a giant in mobile applications and on par with Apple and Google.

## Risk

Product line supply recovery fell short of expectations, policy implementation fell short of expectations, technological development fell short of expectations.



## 附录 APPENDIX

### 重要信息披露

本研究报告由海通国际分销，海通国际是由海通国际研究有限公司 (HTIRL)，Haitong Securities India Private Limited (HSIPL)，Haitong International Japan K.K. (HTIJKK) 和海通国际证券有限公司 (HTISCL) 的证券研究团队所组成的全球品牌，海通国际证券集团 (HTISG) 各成员分别在其许可的司法管辖区内从事证券活动。

### IMPORTANT DISCLOSURES

This research report is distributed by Haitong International, a global brand name for the equity research teams of Haitong International Research Limited ("HTIRL"), Haitong Securities India Private Limited ("HSIPL"), Haitong International Japan K.K. ("HTIJKK"), Haitong International Securities Company Limited ("HTISCL"), and any other members within the Haitong International Securities Group of Companies ("HTISG"), each authorized to engage in securities activities in its respective jurisdiction.

### HTIRL 分析师认证 Analyst Certification:

我，Barney Yao，在此保证 (i) 本研究报告中的意见准确反映了我们对本研究中提及的任何或所有目标公司或上市公司的个人观点，并且 (ii) 我的报酬中没有任何部分与本研究报告中表达的具体建议或观点直接或间接相关；及就此报告中所讨论目标公司的证券，我们（包括我们的家属）在其中均不持有任何财务利益。我和我的家属（我已经告知他们）将不会在本研究报告发布后的 3 个工作日内交易此研究报告所讨论目标公司的证券。I, Barney Yao, certify that (i) the views expressed in this research report accurately reflect my personal views about any or all of the subject companies or issuers referred to in this research and (ii) no part of my compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report; and that I (including members of my household) have no financial interest in the security or securities of the subject companies discussed. I and my household, whom I have already notified of this, will not deal in or trade any securities in respect of the issuer that I review within 3 business days after the research report is published.

我，Kai Wang，在此保证 (i) 本研究报告中的意见准确反映了我们对本研究中提及的任何或所有目标公司或上市公司的个人观点，并且 (ii) 我的报酬中没有任何部分与本研究报告中表达的具体建议或观点直接或间接相关；及就此报告中所讨论目标公司的证券，我们（包括我们的家属）在其中均不持有任何财务利益。我和我的家属（我已经告知他们）将不会在本研究报告发布后的 3 个工作日内交易此研究报告所讨论目标公司的证券。I, Kai Wang, certify that (i) the views expressed in this research report accurately reflect my personal views about any or all of the subject companies or issuers referred to in this research and (ii) no part of my compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report; and that I (including members of my household) have no financial interest in the security or securities of the subject companies discussed. I and my household, whom I have already notified of this, will not deal in or trade any securities in respect of the issuer that I review within 3 business days after the research report is published.

### 利益冲突披露 Conflict of Interest Disclosures

海通国际及其某些关联公司可从事投资银行业务和/或对本研究中的特定股票或公司进行做市或持有自营头寸。就本研究报告而言，以下是有关该等关系的披露事项（以下披露不能保证及时无遗漏，如需了解及时全面信息，请发邮件至 ERD-Disclosure@htisec.com）

HTI and some of its affiliates may engage in investment banking and / or serve as a market maker or hold proprietary trading positions of certain stocks or companies in this research report. As far as this research report is concerned, the following are the disclosure matters related to such relationship (As the following disclosure does not ensure timeliness and completeness, please send an email to ERD-Disclosure@htisec.com if timely and comprehensive information is needed).

杭州塞帕思投资管理有限公司 - 塞帕思特斯拉指数增强私募证券投资基金目前或过去 12 个月内是海通的客户。海通向客户提供非投资银行业务的证券相关业务服务。

杭州塞帕思投资管理有限公司 - 塞帕思特斯拉指数增强私募证券投资基金 is/was a client of Haitong currently or within the past 12 months. The client has been provided for non-investment-banking securities-related services.

海通在过去的 12 个月中从杭州塞帕思投资管理有限公司 - 塞帕思特斯拉指数增强私募证券投资基金获得除投资银行服务以外之产品或服务的报酬。

Haitong has received compensation in the past 12 months for products or services other than investment banking from 杭州塞帕思投资管理有限公司 - 塞帕思特斯拉指数增强私募证券投资基金.

## 评级定义 (从 2020 年 7 月 1 日开始执行):

海通国际 (以下简称“HTI”) 采用相对评级系统来为投资者推荐我们覆盖的公司: 优于大市、中性或弱于大市。投资者应仔细阅读 HTI 的评级定义。并且 HTI 发布分析师观点的完整信息, 投资者应仔细阅读全文而非仅看评级。在任何情况下, 分析师的评级和研究都不能作为投资建议。投资者的买卖股票的决策应基于各自情况 (比如投资者的现有持仓) 以及其他因素。

### 分析师股票评级

**优于大市**, 未来 12-18 个月内预期相对基准指数涨幅在 10%以上, 基准定义如下

**中性**, 未来 12-18 个月内预期相对基准指数变化不大, 基准定义如下。根据 FINRA/NYSE 的评级分布规则, 我们会将中性评级划入持有这一类别。

**弱于大市**, 未来 12-18 个月内预期相对基准指数跌幅在 10%以上, 基准定义如下

各地股票基准指数: 日本 – TOPIX, 韩国 – KOSPI, 台湾 – TAIEX, 印度 – Nifty100, 美国 – SP500; 其他所有中国概念股 – MSCI China.

### Ratings Definitions (from 1 Jul 2020):

Haitong International uses a relative rating system using Outperform, Neutral, or Underperform for recommending the stocks we cover to investors. Investors should carefully read the definitions of all ratings used in Haitong International Research. In addition, since Haitong International Research contains more complete information concerning the analyst's views, investors should carefully read Haitong International Research, in its entirety, and not infer the contents from the rating alone. In any case, ratings (or research) should not be used or relied upon as investment advice. An investor's decision to buy or sell a stock should depend on individual circumstances (such as the investor's existing holdings) and other considerations.

### Analyst Stock Ratings

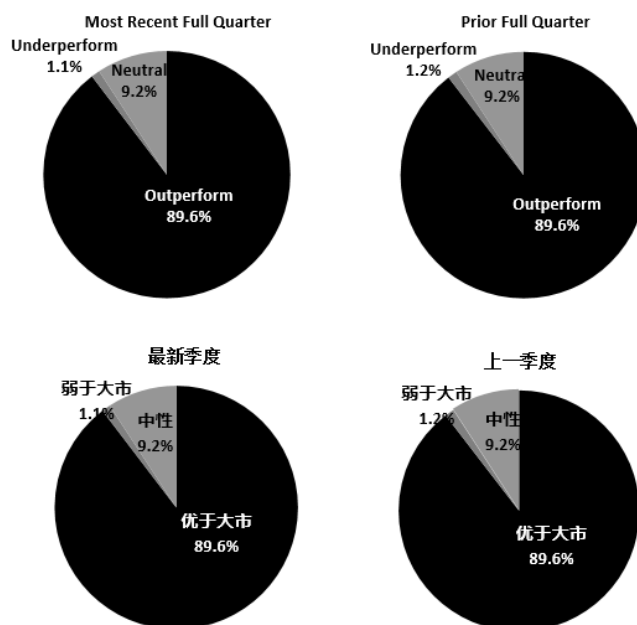
**Outperform:** The stock's total return over the next 12-18 months is expected to exceed the return of its relevant broad market benchmark, as indicated below.

**Neutral:** The stock's total return over the next 12-18 months is expected to be in line with the return of its relevant broad market benchmark, as indicated below. For purposes only of FINRA/NYSE ratings distribution rules, our Neutral rating falls into a hold rating category.

**Underperform:** The stock's total return over the next 12-18 months is expected to be below the return of its relevant broad market benchmark, as indicated below.

**Benchmarks for each stock's listed region are as follows: Japan – TOPIX, Korea – KOSPI, Taiwan – TAIEX, India – Nifty100, US – SP500; for all other China-concept stocks – MSCI China.**

## 评级分布 Rating Distribution



### 截至 2023 年 6 月 30 日海通国际股票研究评级分布

	优于大市	中性 (持有)	弱于大市
海通国际股票研究覆盖率	89.6%	9.2%	1.1%
投资银行客户*	4.7%	5.6%	10.0%

\*在每个评级类别里投资银行客户所占的百分比。

上述分布中的买入, 中性和卖出分别对应我们当前优于大市, 中性和落后大市评级。

只有根据 FINRA/NYSE 的评级分布规则, 我们才将中性评级划入持有这一类别。请注意在上表中不包含非评级的股票。

### 此前的评级系统定义 (直至 2020 年 6 月 30 日):

买入, 未来 12-18 个月内预期相对基准指数涨幅在 10%以上, 基准定义如下

中性, 未来 12-18 个月内预期相对基准指数变化不大, 基准定义如下。根据 FINRA/NYSE 的评级分布规则, 我们会将中性评级划入持有这一类别。

卖出, 未来 12-18 个月内预期相对基准指数跌幅在 10%以上, 基准定义如下

各地股票基准指数: 日本 – TOPIX, 韩国 – KOSPI, 台湾 – TAIEX, 印度 – Nifty100; 其他所有中国概念股 – MSCI China.

## Haitong International Equity Research Ratings Distribution, as of Jun 30, 2023

	Outperform	Neutral (hold)	Underperform
HTI Equity Research Coverage	89.6%	9.2%	1.1%
IB clients*	4.7%	5.6%	10.0%

\*Percentage of investment banking clients in each rating category.

BUY, Neutral, and SELL in the above distribution correspond to our current ratings of Outperform, Neutral, and Underperform.

For purposes only of FINRA/NYSE ratings distribution rules, our Neutral rating falls into a hold rating category. Please note that stocks with an NR designation are not included in the table above.

### Previous rating system definitions (until 30 Jun 2020):

**BUY:** The stock's total return over the next 12-18 months is expected to exceed the return of its relevant broad market benchmark, as indicated below.

**NEUTRAL:** The stock's total return over the next 12-18 months is expected to be in line with the return of its relevant broad market benchmark, as indicated below. For purposes only of FINRA/NYSE ratings distribution rules, our Neutral rating falls into a hold rating category.

**SELL:** The stock's total return over the next 12-18 months is expected to be below the return of its relevant broad market benchmark, as indicated below.

**Benchmarks for each stock's listed region are as follows: Japan – TOPIX, Korea – KOSPI, Taiwan – TAIEX, India – Nifty100; for all other China-concept stocks – MSCI China.**

**海通国际非评级研究:** 海通国际发布计量、筛选或短篇报告，并在报告中根据估值和其他指标对股票进行排名，或者基于可能的估值倍数提出建议价格。这种排名或建议价格并非为进行股票评级、提出目标价格或进行基本面估值，而仅供参考使用。

**Haitong International Non-Rated Research:** Haitong International publishes quantitative, screening or short reports which may rank stocks according to valuation and other metrics or may suggest prices based on possible valuation multiples. Such rankings or suggested prices do not purport to be stock ratings or target prices or fundamental values and are for information only.

**海通国际 A 股覆盖:** 海通国际可能会就沪港通及深港通的中国 A 股进行覆盖及评级。海通证券 (600837.CH)，海通国际于上海的母公司，也会于中国发布中国 A 股的研究报告。但是，海通国际使用与海通证券不同的评级系统，所以海通国际与海通证券的中国 A 股评级可能有所不同。

**Haitong International Coverage of A-Shares:** Haitong International may cover and rate A-Shares that are subject to the Hong Kong Stock Connect scheme with Shanghai and Shenzhen. Haitong Securities (HS; 600837 CH), the ultimate parent company of HTISG based in Shanghai, covers and publishes research on these same A-Shares for distribution in mainland China. However, the rating system employed by HS differs from that used by HTI and as a result there may be a difference in the HTI and HS ratings for the same A-share stocks.

**海通国际优质 100 A 股 (Q100) 指数:** 海通国际 Q100 指数是一个包括 100 支由海通证券覆盖的优质中国 A 股的计量产品。这些股票是通过基于质量的筛选过程，并结合对海通证券 A 股团队自下而上的研究。海通国际每季对 Q100 指数成分作出复审。

**Haitong International Quality 100 A-share (Q100) Index:** HTI's Q100 Index is a quant product that consists of 100 of the highest-quality A-shares under coverage at HS in Shanghai. These stocks are carefully selected through a quality-based screening process in combination with a review of the HS A-share team's bottom-up research. The Q100 constituent companies are reviewed quarterly.

**盟浪义利 (FIN-ESG) 数据免责声明条款:** 在使用盟浪义利 (FIN-ESG) 数据之前，请务必仔细阅读本条款并同意本声明：

第一条 义利 (FIN-ESG) 数据系由盟浪可持续数字科技有限责任公司 (以下简称“本公司”) 基于合法取得的公开信息评估而成，本公司对信息的准确性及完整性不作任何保证。对公司的评估结果仅供参考，并不构成对任何个人或机构投资建议，也不能作为任何个人或机构购买、出售或持有相关金融产品的依据。本公司不对任何个人或机构投资者因使用本数据表述的评估结果造成的任何直接或间接损失负责。

第二条 盟浪并不因此收到此评估数据而将收件人视为客户，收件人使用此数据时应根据自身实际情况作出自我独立判断。本数据所载内容反映的是盟浪在最初发布本数据日期当日的判断，盟浪有权在不发出通知的情况下更新、修订与发出其他与本数据所载内容不一致或有不同结论的数据。除非另行说明，本数据 (如财务业绩数据等) 仅代表过往表现，过往的业绩表现不作为日后回报的预测。

第三条 本数据版权归本公司所有，本公司依法保留各项权利。未经本公司事先书面许可授权，任何个人或机构不得将本数据中的评估结果用于任何营利性目的，不得对本数据进行修改、复制、编译、汇编、再次编辑、改编、删减、缩写、节选、发行、出租、展览、表演、放映、广播、信息网络传播、摄制、增加图标及说明等，否则因此给盟浪或其他第三方造成损失的，由用户承担相应的赔偿责任，盟浪不承担责任。

第四条 如本免责声明未约定，而盟浪网站平台载明的其他协议内容 (如《盟浪网站用户注册协议》《盟浪网用户服务 (含认证) 协议》《盟浪网隐私政策》等) 有约定的，则按其他协议的约定执行；若本免责声明与其他协议约定存在冲突或不一致的，则以本免责声明约定为准。

**SusallWave FIN-ESG Data Service Disclaimer:** Please read these terms and conditions below carefully and confirm your agreement and acceptance with these terms before using SusallWave FIN-ESG Data Service.

1. FIN-ESG Data is produced by SusallWave Digital Technology Co., Ltd. (In short, SusallWave)'s assessment based on legal publicly accessible information. SusallWave shall not be responsible for any accuracy and completeness of the information. The assessment result is for reference only. It is not for any investment advice for any individual or institution and not for basis of purchasing, selling or holding any relative financial products. We will not be liable for any direct or indirect loss of any individual or institution as a result of using SusallWave FIN-ESG Data.

2. SusallWave do not consider recipients as customers for receiving these data. When using the data, recipients shall make your own independent judgment according to your practical individual status. The contents of the data reflect the judgment of us only on the release day. We have right to update and amend the data and release other data that contains inconsistent contents or different conclusions without notification. Unless expressly stated, the data (e.g., financial performance data) represents past performance only and the past performance cannot be viewed as the prediction of future return.

3. The copyright of this data belongs to SusallWave, and we reserve all rights in accordance with the law. Without the prior written permission of our company, none of individual or institution can use these data for any profitable purpose. Besides, none of individual or institution can take actions such as amendment, replication, translation, compilation, re-editing, adaption, deletion, abbreviation, excerpts, issuance, rent, exhibition, performance, projection, broadcast, information network transmission, shooting, adding icons and instructions. If any loss of SusallWave or any

third-party is caused by those actions, users shall bear the corresponding compensation liability. SusallWave shall not be responsible for any loss.

4. If any term is not contained in this disclaimer but written in other agreements on our website (e.g. *User Registration Protocol of SusallWave Website*, *User Service (including authentication) Agreement of SusallWave Website*, *Privacy Policy of Susallwave Website*), it should be executed according to other agreements. If there is any difference between this disclaimer and other agreements, this disclaimer shall be applied.

#### 重要免责声明:

**非印度证券的研究报告:** 本报告由海通国际证券集团有限公司 (“HTISGL”) 的全资附属公司海通国际研究有限公司 (“HTIRL”) 发行, 该公司是根据香港证券及期货条例 (第 571 章) 持有第 4 类受规管活动 (就证券提供意见) 的特牌法团。该研究报告在 HTISGL 的全资附属公司 Haitong International (Japan) K.K. (“HTIJKK”) 的协助下发行, HTIJKK 是由日本关东财务局监管为投资顾问。

**印度证券的研究报告:** 本报告由从事证券交易、投资银行及证券分析及受 Securities and Exchange Board of India (“SEBI”) 监管的 Haitong Securities India Private Limited (“HSIPL”) 所发行, 包括制作及发布涵盖 BSE Limited (“BSE”) 和 National Stock Exchange of India Limited (“NSE”) 上市公司 (统称为「印度交易所」) 的研究报告。HSIPL 于 2016 年 12 月 22 日被收购并成为海通国际证券集团有限公司 (“HTISG”) 的一部分。

所有研究报告均以海通国际为名作为全球品牌, 经许可由海通国际证券股份有限公司及/或海通国际证券集团的其他成员在其司法管辖区发布。

本文件所载信息和观点已被编译或源自可靠来源, 但 HTIRL、HTISGL 或任何其他属于海通国际证券集团有限公司 (“HTISG”) 的成员对其准确性、完整性和正确性不做任何明示或暗示的声明或保证。本文件中所有观点均截至本报告日期, 如有更改, 恕不另行通知。本文件仅供参考使用。文件中提及的任何公司或其股票的说明并非意图展示完整的内容, 本文件并非/不应被解释为对证券买卖的明示或暗示地出价或征价。在某些司法管辖区, 本文件中提及的证券可能无法进行买卖。如果投资产品以投资者本国货币以外的币种进行计价, 则汇率变化可能会对投资产生不利影响。过去的表现并不一定代表将来的结果。某些特定交易, 包括设计金融衍生工具的, 有产生重大风险的可能性, 因此并不适合所有的投资者。您还应认识到本文件中的建议并非为您量身定制。分析师并未考虑到您自身的财务情况, 如您的财务状况和风险偏好。因此您必须自行分析并在适用的情况下咨询自己的法律、税收、会计、金融和其他方面的专业顾问, 以期在投资之前评估该项建议是否适合于您。若由于使用本文件所载的材料而产生任何直接或间接的损失, HTISG 及其董事、雇员或代理人对此均不承担任何责任。

除对本文内容承担责任的分析师除外, HTISG 及我们的关联公司、高级管理人员、董事和雇员, 均可不时作为主事人就本文件所述的任何证券或衍生品持有长仓或短仓以及进行买卖。HTISG 的销售员、交易员和其他专业人士均可向 HTISG 的相关客户和公司提供与本文件所述意见相反的口头或书面市场评论意见或交易策略。HTISG 可做出与本文件所述建议或意见不一致的投资决策。但 HTIRL 没有义务来确保本文件的收件人了解到该等交易决定、思路或建议。

请访问海通国际网站 [www.equities.htisec.com](http://www.equities.htisec.com), 查阅更多有关海通国际为预防和避免利益冲突设立的组织 and 行政安排的内容信息。

**非美国分析师披露信息:** 本项研究首页上列明的海通国际分析师并未在 FINRA 进行注册或者取得相应的资格, 并且不受美国 FINRA 有关与本项研究目标公司进行沟通、公开露面和自营证券交易的第 2241 条规则之限制。

#### IMPORTANT DISCLAIMER

**For research reports on non-Indian securities:** The research report is issued by Haitong International Research Limited (“HTIRL”), a wholly owned subsidiary of Haitong International Securities Group Limited (“HTISGL”) and a licensed corporation to carry on Type 4 regulated activity (advising on securities) for the purpose of the Securities and Futures Ordinance (Cap. 571) of Hong Kong, with the assistance of Haitong International (Japan) K.K. (“HTIJKK”), a wholly owned subsidiary of HTISGL and which is regulated as an Investment Adviser by the Kanto Finance Bureau of Japan.

**For research reports on Indian securities:** The research report is issued by Haitong Securities India Private Limited (“HSIPL”), an Indian company and a Securities and Exchange Board of India (“SEBI”) registered Stock Broker, Merchant Banker and Research Analyst that, inter alia, produces and distributes research reports covering listed entities on the BSE Limited (“BSE”) and the National Stock Exchange of India Limited (“NSE”) (collectively referred to as “Indian Exchanges”). HSIPL was acquired and became part of the Haitong International Securities Group of Companies (“HTISG”) on 22 December 2016.

All the research reports are globally branded under the name Haitong International and approved for distribution by Haitong International Securities Company Limited (“HTISCL”) and/or any other members within HTISG in their respective jurisdictions.

The information and opinions contained in this research report have been compiled or arrived at from sources believed to be reliable and in good faith but no representation or warranty, express or implied, is made by HTIRL, HTISCL, HSIPL, HTIJKK or any other members within HTISG from which this research report may be received, as to their accuracy, completeness or correctness. All opinions expressed herein are as of the date of this research report and are subject to change without notice. This research report is for information purpose only. Descriptions of any companies or their securities mentioned herein are not intended to be complete and this research report is not, and should not be construed expressly or impliedly as, an offer to buy or sell securities. The securities referred to in this research report may not be eligible for purchase or sale in some jurisdictions. If an investment product is denominated in a currency other than an investor's home currency, a change in exchange rates may adversely affect the investment. Past performance is not necessarily indicative of future results. Certain transactions, including those involving derivatives, give rise to substantial risk and are not suitable for all investors. You should also bear in mind that recommendations in this research report are not tailor-made for you. The analyst has not taken into account your unique financial circumstances, such as your financial situation and risk appetite. You must, therefore, analyze and should, where applicable, consult your own legal, tax, accounting, financial and other professional advisers to evaluate whether the recommendations suits you before investment. Neither HTISG nor any of its directors, employees or agents accepts any liability whatsoever for any direct or consequential loss arising from any use of the materials contained in this research report.

HTISG and our affiliates, officers, directors, and employees, excluding the analysts responsible for the content of this document, will from time to time have long or short positions in, act as principal in, and buy or sell, the securities or derivatives, if any, referred to in this research report. Sales, traders, and other professionals of HTISG may provide oral or written market commentary or trading strategies to the relevant clients and the companies within HTISG that reflect opinions that are contrary to the opinions expressed in this research report. HTISG may make investment decisions that are inconsistent with the recommendations or views expressed in this research report. HTI is under no obligation to ensure that such other trading decisions, ideas or recommendations are brought to the attention of any recipient of this research report.

Please refer to HTI's website [www.equities.htisec.com](http://www.equities.htisec.com) for further information on HTI's organizational and administrative arrangements set up for the prevention and avoidance of conflicts of interest with respect to Research.

**Non U.S. Analyst Disclosure:** The HTI analyst(s) listed on the cover of this Research is (are) not registered or qualified as a research analyst with FINRA and are not subject to U.S. FINRA Rule 2241 restrictions on communications with companies that are the subject of the Research; public appearances; and trading securities by a research analyst.

#### 分发和地区通知:

除非下文另有规定, 否则任何希望讨论本报告或者就本项研究中讨论的任何证券进行任何交易的收件人均应联系其所在国家或地区的海通国际销售人员。

**香港投资者的通知事项:** 海通国际证券股份有限公司(“HTISCL”)负责分发该研究报告, HTISCL 是在香港有权实施第 1 类受规管活动(从事证券交易)的持牌公司。该研究报告并不构成《证券及期货条例》(香港法例第 571 章)(以下简称“SFO”)所界定的要约邀请, 证券要约或公众要约。本研究报告仅提供给 SFO 所界定的“专业投资者”。本研究报告未经过证券及期货事务监察委员会的审查。您不应仅根据本研究报告中所载的信息做出投资决定。本研究报告的收件人就研究报告中产生或与之相关的任何事宜请联系 HTISCL 销售人员。

**美国投资者的通知事项:** 本研究报告由 HTIRL, HSIPL 或 HTIJKK 编写。HTIRL, HSIPL, HTIJKK 以及任何非 HTISG 美国联营公司, 均未在美国注册, 因此不受美国关于研究报告编制和研究分析人员独立性规定的约束。本研究报告提供给依照 1934 年“美国证券交易法”第 15a-6 条规定的豁免注册的「美国主要机构投资者」(“Major U.S. Institutional Investor”)和「机构投资者」(“U.S. Institutional Investors”)。在向美国机构投资者分发研究报告时, Haitong International Securities (USA) Inc. (“HTI USA”)将对报告的内容负责。任何收到本研究报告的美国投资者, 希望根据本研究报告提供的信息进行任何证券或相关金融工具买卖的交易, 只能通过 HTI USA。HTI USA 位于 340 Madison Avenue, 12th Floor, New York, NY 10173, 电话 (212) 351-6050。HTI USA 是在美国于 U.S. Securities and Exchange Commission (“SEC”)注册的经纪商, 也是 Financial Industry Regulatory Authority, Inc. (“FINRA”)的成员。HTIUSA 不负责编写本研究报告, 也不负责其中包含的分析。在任何情况下, 收到本研究报告的任何美国投资者, 不得直接与分析师直接联系, 也不得通过 HSIPL, HTIRL 或 HTIJKK 直接进行买卖证券或相关金融工具的交易。本研究报告中出现的 HSIPL, HTIRL 或 HTIJKK 分析师没有注册或具备 FINRA 的研究分析师资格, 因此可能不受 FINRA 第 2241 条规定的与目标公司的交流, 公开露面和分析师账户持有的交易证券等限制。投资本研究报告中讨论的任何非美国证券或相关金融工具(包括 ADR)可能存在一定风险。非美国发行的证券可能没有注册, 或不受美国法规的约束。有关非美国证券或相关金融工具的信息可能有限。外国公司可能不受审计和汇报的标准以及与美国境内生效相符的监管要求。本研究报告中以美元以外的其他货币计价的任何证券或相关金融工具的投资或收益的价值受汇率波动的影响, 可能对该等证券或相关金融工具的价值或收入产生正面或负面影响。美国收件人的所有问询请联系:

Haitong International Securities (USA) Inc.  
340 Madison Avenue, 12th Floor  
New York, NY 10173  
联系人电话: (212) 351 6050

#### DISTRIBUTION AND REGIONAL NOTICES

Except as otherwise indicated below, any Recipient wishing to discuss this research report or effect any transaction in any security discussed in HTI’s research should contact the Haitong International salesperson in their own country or region.

**Notice to Hong Kong investors:** The research report is distributed by Haitong International Securities Company Limited (“HTISCL”), which is a licensed corporation to carry on Type 1 regulated activity (dealing in securities) in Hong Kong. This research report does not constitute a solicitation or an offer of securities or an invitation to the public within the meaning of the SFO. This research report is only to be circulated to “Professional Investors” as defined in the SFO. This research report has not been reviewed by the Securities and Futures Commission. You should not make investment decisions solely on the basis of the information contained in this research report. Recipients of this research report are to contact HTISCL salespersons in respect of any matters arising from, or in connection with, the research report.

**Notice to U.S. investors:** As described above, this research report was prepared by HTIRL, HSIPL or HTIJKK. Neither HTIRL, HSIPL, HTIJKK, nor any of the non U.S. HTISG affiliates is registered in the United States and, therefore, is not subject to U.S. rules regarding the preparation of research reports and the independence of research analysts. This research report is provided for distribution to “major U.S. institutional investors” and “U.S. institutional investors” in reliance on the exemption from registration provided by Rule 15a-6 of the U.S. Securities Exchange Act of 1934, as amended. When distributing research reports to “U.S. institutional investors,” HTI USA will accept the responsibilities for the content of the reports. Any U.S. recipient of this research report wishing to effect any transaction to buy or sell securities or related financial instruments based on the information provided in this research report should do so only through Haitong International Securities (USA) Inc. (“HTI USA”), located at 340 Madison Avenue, 12th Floor, New York, NY 10173, USA; telephone (212) 351 6050. HTI USA is a broker-dealer registered in the U.S. with the U.S. Securities and Exchange Commission (the “SEC”) and a member of the Financial Industry Regulatory Authority, Inc. (“FINRA”). HTI USA is not responsible for the preparation of this research report nor for the analysis contained therein. Under no circumstances should any U.S. recipient of this research report contact the analyst directly or effect any transaction to buy or sell securities or related financial instruments directly through HSIPL, HTIRL or HTIJKK. The HSIPL, HTIRL or HTIJKK analyst(s) whose name appears in this research report is not registered or qualified as a research analyst with FINRA and, therefore, may not be subject to FINRA Rule 2241 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account. Investing in any non-U.S. securities or related financial instruments (including ADRs) discussed in this research report may present certain risks. The securities of non-U.S. issuers may not be registered with, or be subject to U.S. regulations. Information on such non-U.S. securities or related financial instruments may be limited. Foreign companies may not be subject to audit and reporting standards and regulatory requirements comparable to those in effect within the U.S. The value of any investment or income from any securities or related financial instruments discussed in this research report denominated in a currency other than U.S. dollars is subject to exchange rate fluctuations that may have a positive or adverse effect on the value of or income from such securities or related financial instruments. All inquiries by U.S. recipients should be directed to:

Haitong International Securities (USA) Inc.  
340 Madison Avenue, 12<sup>th</sup> Floor  
New York, NY 10173  
Attn: Sales Desk at (212) 351 6050

**中华人民共和国的通知事项:** 在中华人民共和国(下称“中国”, 就本报告目的而言, 不包括香港特别行政区、澳门特别行政区和台湾)只有根据适用的中国法律法规而收到该材料的人员方可使用该材料。并且根据相关法律法规, 该材料中的信息并不构成“在中国从事生产、经营活动”。本文件在中国并不构成相关证券的公共发售或认购。无论根据法律规定或其他任何规定, 在取得中国政府所有的批准或许可之前, 任何法人或自然人均不得直接或间接地购买本材料中的任何证券或任何实益权益。接收本文件的人员须遵守上述限制性规定。

**加拿大投资者的通知事项:** 在任何情况下该等材料均不得被解释为在任何加拿大的司法管辖区内出售证券的要约或认购证券的要约邀请。本材料中所述证券在加拿大的任何要约或出售行为均只能在豁免向有关加拿大证券监管机构提交招股说明书的前提下由 Haitong International Securities (USA) Inc. (“HTI USA”)予以实施, 该公司是一家根据 National Instrument 31-

103 Registration Requirements, Exemptions and Ongoing Registrant Obligations (“NI 31-103”)的规定得到「国际交易商豁免」(“International Dealer Exemption”)的交易商,位于艾伯塔省、不列颠哥伦比亚省、安大略省和魁北克省。在加拿大,该等材料在任何情况下均不得被解释为任何证券的招股说明书、发行备忘录、广告或公开发行。加拿大的任何证券委员会或类似的监管机构均未审查或以任何方式批准该等材料、其中所载的信息或所述证券的优点,任何与此相反的声明即属违法。在收到该等材料时,每个加拿大的收件人均将被视为属于 National Instrument 45-106 Prospectus Exemptions 第 1.1 节或者 Securities Act (Ontario)第 73.3(1)节所规定的「认可投资者」(“Accredited Investor”),或者在适用情况下 National Instrument 31-103 第 1.1 节所规定的「许可投资者」(“Permitted Investor”)。

**新加坡投资者的通知事项:** 本研究报告由 Haitong International Securities (Singapore) Pte Ltd (“HTISSPL”)[公司注册编号 201311400G]于新加坡提供。HTISSPL 是符合《财务顾问法》(第 110 章) (“FAA”)定义的豁免财务顾问,可 (a) 提供关于证券,集体投资计划的部分,交易所衍生品合约和场外衍生品合约的建议 (b) 发行或公布有关证券、交易所衍生品合约和场外衍生品合约的研究分析或研究报告。本研究报告仅提供给符合《证券及期货法》(第 289 章)第 4A 条项下规定的机构投资者。对于因本研究报告而产生的或与之相关的任何问题,本研究报告的收件人应通过以下信息与 HTISSPL 联系:

Haitong International Securities (Singapore) Pte. Ltd

50 Raffles Place, #33-03 Singapore Land Tower, Singapore 048623

电话:(65) 6536 1920

**日本投资者的通知事项:** 本研究报告由海通国际证券有限公司所发布,旨在分发给从事投资管理的金融服务提供商或注册金融机构(根据日本金融机构和交易法(“FIEL”))第 61 (1) 条,第 17-11 (1) 条的执行及相关条款)。

**英国及欧盟投资者的通知事项:** 本报告由从事投资顾问的 Haitong International Securities Company Limited 所发布,本报告只面向有投资相关经验的专业客户发布。任何投资或与本报告相关的投资行为只面对此类专业客户。没有投资经验或相关投资经验的客户不得依赖本报告。Haitong International Securities Company Limited 的分支机构的净长期或短期金融权益可能超过本研究报告中提及的实体已发行股本总额的 0.5%。特别提醒有些英文报告有可能此前已经通过中文或其它语言完成发布。

**澳大利亚投资者的通知事项:** Haitong International Securities (Singapore) Pte Ltd, Haitong International Securities Company Limited 和 Haitong International Securities (UK) Limited 分别根据澳大利亚证券和投资委员会(以下简称“ASIC”)公司(废除及过度性)文书第 2016/396 号规章在澳大利亚分发本项研究,该等规章免除了根据 2001 年《公司法》在澳大利亚为批发客户提供金融服务时海通国际需持有澳大利亚金融服务许可的要求。ASIC 的规章副本可在以下网站获取: [www.legislation.gov.au](http://www.legislation.gov.au)。海通国际提供的金融服务受外国法律法规规定的管制,该等法律与在澳大利亚所适用的法律存在差异。

**印度投资者的通知事项:** 本报告由从事证券交易、投资银行及证券分析及受 Securities and Exchange Board of India (“SEBI”)监管的 Haitong Securities India Private Limited (“HTSIPL”)所发布,包括制作及发布涵盖 BSE Limited (“BSE”)和 National Stock Exchange of India Limited (“NSE”) (统称为「印度交易所」)研究报告。

研究机构名称: Haitong Securities India Private Limited

SEBI 研究分析师注册号: INH000002590

地址: 1203A, Floor 12A, Tower 2A, One World Center

841 Senapati Bapat Marg, Elphinstone Road, Mumbai 400 013, India

CIN U74140MH2011FTC224070

电话: +91 22 43156800 传真: +91 22 24216327

合规和申诉办公室联系人: Prasanna Chandwaskar; 电话: +91 22 43156803; 电子邮箱: [prasanna.chandwaskar@htisec.com](mailto:prasanna.chandwaskar@htisec.com)

“请注意, SEBI 授予的注册和 NISM 的认证并不保证中介的表现或为投资者提供任何回报保证”。

本项研究仅供收件人使用,未经海通国际的书面同意不得予以复制和再次分发。

版权所有: 海通国际证券集团有限公司 2019 年。保留所有权利。

**People’s Republic of China (PRC):** In the PRC, the research report is directed for the sole use of those who receive the research report in accordance with the applicable PRC laws and regulations. Further, the information on the research report does not constitute “production and business activities in the PRC” under relevant PRC laws. This research report does not constitute a public offer of the security, whether by sale or subscription, in the PRC. Further, no legal or natural persons of the PRC may directly or indirectly purchase any of the security or any beneficial interest therein without obtaining all prior PRC government approvals or licenses that are required, whether statutorily or otherwise. Persons who come into possession of this research are required to observe these restrictions.

**Notice to Canadian Investors:** Under no circumstances is this research report to be construed as an offer to sell securities or as a solicitation of an offer to buy securities in any jurisdiction of Canada. Any offer or sale of the securities described herein in Canada will be made only under an exemption from the requirements to file a prospectus with the relevant Canadian securities regulators and only by Haitong International Securities (USA) Inc., a dealer relying on the “international dealer exemption” under National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations (“NI 31-103”) in Alberta, British Columbia, Ontario and Quebec. This research report is not, and under no circumstances should be construed as, a prospectus, an offering memorandum, an advertisement or a public offering of any securities in Canada. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed upon this research report, the information contained herein or the merits of the securities described herein and any representation to the contrary is an offence. Upon receipt of this research report, each Canadian recipient will be deemed to have represented that the investor is an “accredited investor” as such term is defined in section 1.1 of National Instrument 45-106 Prospectus Exemptions or, in Ontario, in section 73.3(1) of the Securities Act (Ontario), as applicable, and a “permitted client” as such term is defined in section 1.1 of NI 31-103, respectively.

**Notice to Singapore investors:** This research report is provided in Singapore by or through Haitong International Securities (Singapore) Pte Ltd (“HTISSPL”) [Co Reg No 201311400G. HTISSPL is an Exempt Financial Adviser under the Financial Advisers Act (Cap. 110) (“FAA”) to (a) advise on securities, units in a collective investment scheme, exchange-traded derivatives contracts and over-the-counter derivatives contracts and (b) issue or promulgate research analyses or research reports on securities, exchange-traded derivatives contracts and over-the-counter derivatives contracts. This

research report is only provided to institutional investors, within the meaning of Section 4A of the Securities and Futures Act (Cap. 289). Recipients of this research report are to contact HTISSPL via the details below in respect of any matters arising from, or in connection with, the research report:

Haitong International Securities (Singapore) Pte. Ltd.

10 Collyer Quay, #19-01 - #19-05 Ocean Financial Centre, Singapore 049315

Telephone: (65) 6536 1920

**Notice to Japanese investors:** This research report is distributed by Haitong International Securities Company Limited and intended to be distributed to Financial Services Providers or Registered Financial Institutions engaged in investment management (as defined in the Japan Financial Instruments and Exchange Act ("FIEL") Art. 61(1), Order for Enforcement of FIEL Art. 17-11(1), and related articles).

**Notice to UK and European Union investors:** This research report is distributed by Haitong International Securities Company Limited. This research is directed at persons having professional experience in matters relating to investments. Any investment or investment activity to which this research relates is available only to such persons or will be engaged in only with such persons. Persons who do not have professional experience in matters relating to investments should not rely on this research. Haitong International Securities Company Limited's affiliates may have a net long or short financial interest in excess of 0.5% of the total issued share capital of the entities mentioned in this research report. Please be aware that any report in English may have been published previously in Chinese or another language.

**Notice to Australian investors:** The research report is distributed in Australia by Haitong International Securities (Singapore) Pte Ltd, Haitong International Securities Company Limited, and Haitong International Securities (UK) Limited in reliance on ASIC Corporations (Repeal and Transitional) Instrument 2016/396, which exempts those HTISG entities from the requirement to hold an Australian financial services license under the Corporations Act 2001 in respect of the financial services it provides to wholesale clients in Australia. A copy of the ASIC Class Orders may be obtained at the following website, [www.legislation.gov.au](http://www.legislation.gov.au). Financial services provided by Haitong International Securities (Singapore) Pte Ltd, Haitong International Securities Company Limited, and Haitong International Securities (UK) Limited are regulated under foreign laws and regulatory requirements, which are different from the laws applying in Australia.

**Notice to Indian investors:** The research report is distributed by Haitong Securities India Private Limited ("HSIPL"), an Indian company and a Securities and Exchange Board of India ("SEBI") registered Stock Broker, Merchant Banker and Research Analyst that, inter alia, produces and distributes research reports covering listed entities on the BSE Limited ("BSE") and the National Stock Exchange of India Limited ("NSE") (collectively referred to as "Indian Exchanges").

Name of the entity: Haitong Securities India Private Limited

SEBI Research Analyst Registration Number: INH000002590

Address : 1203A, Floor 12A, Tower 2A, One World Center

841 Senapati Bapat Marg, Elphinstone Road, Mumbai 400 013, India

CIN U74140MH2011FTC224070

Ph: +91 22 43156800 Fax:+91 22 24216327

Details of the Compliance Officer and Grievance Officer : Prasanna Chandwaskar : Ph: +91 22 43156803; Email id: [prasanna.chandwaskar@htisec.com](mailto:prasanna.chandwaskar@htisec.com)

"Please note that Registration granted by SEBI and Certification from NISM in no way guarantee performance of the intermediary or provide any assurance of returns to investors".

This research report is intended for the recipients only and may not be reproduced or redistributed without the written consent of an authorized signatory of HTISG.

Copyright: Haitong International Securities Group Limited 2019. All rights reserved.

<http://equities.htisec.com/x/legal.html>