Media Release:

E Ink Holdings Inc. Assigned 'twA-/twA-2' Ratings; Outlook Stable

May 17, 2023

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Rating Action Overview

- Taiwan-based E Ink Holdings Inc. focuses on the manufacture of electronic paper display (EPD). In 2022, the company generated about NT$30.1 billion revenue and NT$10.3 billion EBITDA.
- E Ink's narrower technology and product applications and significant long-term competition risk from alternative display technologies constrain its credit strengths. This is despite E Ink has a dominant share in the electronic paper market with relatively strong profitability.
- E Ink has a strong financial buffer for the ratings over the next one to two years against rising capital expenditure (capex) and uncertainty in widening the company's revenue from its existing and new applications through heavy investments in new products.
- We have assigned our 'twA-' long-term and 'twA-2' short-term issuer credit ratings to E Ink.
- The stable rating outlook reflects our view that E Ink could maintain its better profitability while keeping its ratio of debt to EBITDA at around zero in 2023-2024, despite materially rising capex.

Rating Action Rationale

The pace of widespread adoption of electronic paper is somewhat uncertain, despite positive long-term growth prospects.

Labor shortages during the COVID-19 pandemic forced some large retailers in developed countries to adopt electronic shelf labels (ESLs) to reduce manpower and costs, despite higher initial installation costs. We forecast that a continued manpower shortage and sharply rising labor costs will continue to drive this trend in the post-pandemic era. In addition, growing environmental consciousness regarding energy conservation and waste reduction will raise the incentive for companies in retail and other segments to adopt electronic paper.

Nevertheless, the pace of ESL adoption could slow in 2023-2024. That's because weak economic conditions and narrowing profitability could deter large non-critical capital investments that could negatively affect business stability. The shift to ESL requires commercial users to build new information systems and change their operating processes in addition to capital spending. These factors discouraged the adoption of ESL before the pandemic due to the lack of a proper ESL ecosystem. Other applications for electronic paper such as industrial labels for manufacturing and logistics could also take time to materialize, in our view.

E Ink will continue to benefit from growing applications of electronic paper over the next two to three years and focus on potential commercial applications, given its technological advantage.

We expect E Ink to continue to benefit from the sustainable shift toward electronic paper, particularly for ESL. However, E Ink's growth could slow materially over the next one to two years after a sharp rise in revenue from its ESL products in 2021-2022. This is because of E Ink's slowing market penetration, despite good long-term growth prospects in this field. We believe that E Ink's electronic paper technology will remain the dominant technology for ESL applications over the next two to three years. The company dominates over 90% of the EPD market.

Increased adoption of electronic paper would gradually shift E Ink's revenue towards commercial applications and away from e-readers. We estimate that E Ink's revenue from commercial applications has already exceeded that from consumer applications in 2022, partly because of stagnant sales in e-readers. We do not forecast significant growth in e-reader related applications due to competition from electronic tablets. We also view demand for commercial applications such as ESL is less volatile and more sustainable than for consumer products, particularly e-readers, in the long term. Accordingly, E Ink could improve its business stability slightly over the next two to three years.

E Ink's narrower technology and product applications leave the company vulnerable to competition risk from alternative display technologies and market disruption.

E Ink's business remains vulnerable to competition from alternative technologies, changing consumer preferences and economic cycles, in our view, due to its business concentration in only a few applications. We estimate that E Ink will continue to generate most of its revenue from e-readers and ESL over the next two to three years. We believe that the company's revenue from consumer applications could experience higher volatility in the long term due to high customer concentration in this segment.

Growing demand for electronic paper in commercial applications could also draw competition from other large tech companies. These firms have substantially larger financial and technological resources to develop alternative technologies to compete with E Ink in the long term. In addition, some early fundamental patents of E Ink's electronic paper technology will expire over the next one to two years. This could attract further competition using similar technology, particularly for low-end products; however, E Ink has built up additional technology patents that will significantly raise the hurdles for new market entrants when earlier patents expire.

However, we do not expect material competition from alternative technologies and new competitors using technologies similar to E Ink's over the next two to three years. We believe the company's performance will remain largely subject to the pace of adoption of ESL by retailers and whether consumer demand for hardware such as e-readers can sustain amid the current weak global macroeconomy.

E Ink could sustain its strengthened profitability with improved scale economy and still favorable pricing power over the next two to three years.

Rising revenue from commercial applications has significantly increased E Ink's revenue scale and lowered its expense ratio over the past two years. We expect E Ink to maintain its relatively good pricing power to limit the erosion of its currently strong gross margins, given its leading position in the electronic paper market. These factors together could enable E Ink to sustain its EBITDA margin at around 30% over the next one to two years, albeit down moderately from 34.3% in 2022. In addition, E Ink's strategy to focus more on the sale of film products and chemical materials than display modules and fully assembled devices could help the company sustain its margins and reduce its cash flow volatility related to working capital movements.

Business volatility to remains over the long term.

E Ink's EBITDA margin could remain somewhat volatile over the long term due to volatile material costs and the company's high sensitivity of the company's margin to changes in overall revenue. E Ink could also offer more attractive pricing to build an ecosystem around its platform and accelerate the adoption of electronic paper in commercial applications. This could add to volatility in the company's margins. E Ink's gross margin was volatile in 2020-2022 due to supply chain shortages and production disruption in China. We expect the company's profitability to remain subject to fluctuations in material costs from 2023 onwards, along with slowing revenue growth.

E Ink's aggressive capex, particularly on next generation large-sized color electronic paper, could also add to company's business volatility if the adoption of its new products is slower than it anticipates. We believe that adoption of electronic paper for use in large display area applications, such as billboards, is less certain because of closer competition from other display technologies such as LCD and LED.

Substantially improved profitability and large cash on hand provide a sufficient financial buffer against adverse market developments over the next one to two years.

We believe that E Ink has a strong financial buffer to counter the impact of negative cash flow if its current business development strategy fails to deliver anticipated results, particularly related to its aggressive capital spending for anticipated strong demand. E Ink is likely to increase its capex to new Taiwan dollar (NT$)4.5 billion-NT$5.5 billion in 2023 and NT$3.5 billion-NT$4.5 billion in 2024 to significantly increase its production capacity in Taiwan. This comes after the company increased its capex to NT$3.1 billion in 2022 from NT$1.8 billion in 2021. However, we forecast that E Ink could keep its ratio of debt to EBTIDA at around zero during 2023-2024, based on its strong cash flow and high cash balance on hand. E Ink is also likely to slightly lower its dividend payout ratio to reserve cash flow for future spending on expansion. This indicates that E Ink has a significant financial buffer to absorb unfavorable business developments while still maintaining an adequate capital structure over the next one to two years, in our view.

Nonetheless, E Ink's significant business volatility and growing capex could still cause significant volatility in the company's cash flow and debt leverage over the long term. This is because the company's business concentration, relatively limited operating scale, and significant capital intensity could capex constantly elevated relatively to E Ink's revenue scale. We have therefore factored higher financial risk in our ratings than the company's current debt leverage implies.

Outlook

The stable rating outlook reflects our view that E Ink could largely sustain its strong profitability and support its large capex through operating cash flow and large cash on hand without increasing debt leverage over the next one two years, despite slowing revenue growth. The outlook also factors in our assumption that the company will likely keep a lower dividend payout ratio in 2023-2024 than in 2022. These factors together will enable E Ink to keep its ratio of debt to EBITDA at around zero over the next two years.

Upward scenario

We may raise the long-term issuer credit rating if:

- E Ink materially grows its revenue and EBITDA through successful developments in commercial applications of electronic paper amid less competition risk from alternative technologies, which lead us to believe that E Ink has materially and sustainably improved its business stability. Meanwhile, E Ink's ratio of debt to EBITDA would need to remain below 1.5x.

Downward scenario

We may lower the long-term issuer credit rating if:

- E Ink's revenue shows sustained deterioration. Likely scenarios include: (1) slower adoption of electronic paper by E Ink's targeted market segments, and (2) E Ink sees stronger competition in its key consumer and commercial applications from existing or new competitors using either current or new technologies.
- E Ink's ratio of debt to EBITDA rises persistently above 1.5x, likely due to sharply weaker profitability, more aggressive capex or acquisitions than we assume without generating appropriate returns, or the company takes on a more aggressive shareholder return policy such as materially raising its dividend payout ratio.

Our Base Case Scenario

- S&P Global's projection for world GDP growth of 2.5% in 2023 and 3.3% in 2024. Slowing economic growth could soften consumer consumption and slow investments by private companies.
- S&P Global's forecast for global IT spending to increase by 3.3% in 2023, increasing demand for cloud services should support sales of electronic shelf labels.
- Taiwan Ratings' base case scenario for E Ink sees 6%-10% sales growth in 2023-2024, slowing from 53% growth in 2022, given the higher base in 2022.
    - Sales from the consumer electronic sector could slightly reduce by 3%-5% in 2023 due to weaker consumer spending. However, we believe that new product releases should partly offset this decline and support stable performance in 2024.
    - Sales from the Internet of Things sector to grow 10%-15% in 2023-2024, supported by continuous spending from retailers and new larger size products.
- The company's ratio of cost of goods sold is likely to rebound to 44%-47% in 2023 due to cost volatility in materials. The ratio is likely to increase to 47%-49%, following the release of new large and colored products with lower average sales price per unit area to enhance market penetration.
- E Ink's operating expense ratio should gradually decline to 22%-23% in 2023 and 21%-22% in 2024, thanks to improving scale economies with a moderate increase in research and development expense.
- Capex for E Ink of NT$4.5 billion-NT$5.5 billion in 2023 and NT$3.5 billion–NT$4.5 billion in 2024. This is mainly for new factory and building construction, as well as product line expansion.
- E Ink's cash conversion cycle to be more stable with limited working capital changes in 2023-2025, due to less impact from advance payments.
- E Ink's dividend payout to be NT$5.1 billion in 2023 with stable dividend payout ratios afterwards.
- We apply a 12.6% haircut to calculate E Ink's accessible cash.

Based on the assumptions, we arrive at the following credit measures:

- EBITDA margin of 31%-34% in 2023 and 30%-33% in 2024.
- Debt to EBITDA ratio of around zero in 2023-2024.

Liquidity

The short-term issuer credit rating is 'twA-2'. We believe the company has strong liquidity that reflects a ratio of liquidity sources to uses of 1.8x over the next 12-month period ending December 2023 and 2x for the subsequent 12 months. We also believe the company will have positive liquidity sources minus uses even if its EBITDA were to decline by 50%. In our view, E Ink has a well-established and solid relationship with banks as evidenced by the low interest rate on its bank loans. Sufficient undrawn bank credit lines and flexibility to increase bank facilities is also evidence of this. Meanwhile, we believe the company has sufficient headroom on its financial covenants over the next two years.

Principal Liquidity Sources:

- Cash and short-term investments of about NT$14.4 billion as of the end of December 2022.
- Funds from operations of NT$8 billion-NT$10 billion in 2023 and 2024.
- Undrawn long-term bank facilities of NT$3 billion-NT$4 billion for the 12-month period ending December 2023.

Principal Liquidity Uses:

- Debt maturities of about NT$5.2 billion for the 12-month period ending December 2023.
- Capex of NT$4.5 billion-NT$5.5 billion in 2023 and NT$3.5 billion-NT$4.5 billion in 2024.
- Working capital outflow of NT$0.2 billion-NT$0.8 billion in 2023-2024.
- Cash dividend of NT$4.5 billion-NT$5.5 billion in 2023 and 2024.

Ratings Score Snapshot

Issuer Credit Rating: twA-/Stable/twA-2

Note: All scores are in comparison with global obligors.

Business Risk: Fair

- Country risk: Low
- Industry risk: Moderately High
- Competitive position: Fair

Financial Risk: Modest

- Cash flow/Leverage: Modest

Anchor: twa

Modifiers

- Diversification/Portfolio effect: Neutral (no impact)
- Capital structure: Neutral (no impact)
- Financial policy: Neutral (no impact)
- Liquidity: Strong (no impact)
- Management and governance: Fair (no impact)
- Comparable rating analysis: Negative (-1 notch)

Stand-alone credit profile (SACP): twa-

ESG credit indicators: E-2, S-2, G-2

Related Criteria & Research

Related Criteria

- General Criteria: Group Rating Methodology - July 01, 2019
- General Criteria: Environmental, Social, And Governance Principles In Credit Ratings - October 10, 2021
- General Criteria: Principles Of Credit Ratings - February 16, 2011
- General Criteria: Methodology For National And Regional Scale Credit Ratings - June 25, 2018
- General Criteria: Country Risk Assessment Methodology And Assumptions - November 19, 2013
- Criteria | Corporates | General: Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers - December 16, 2014
- General Criteria: Methodology: Industry Risk - November 19, 2013
- Criteria | Corporates | General: Corporate Methodology: Ratios And Adjustments - April 01, 2019
- Criteria | Corporates | General: Corporate Methodology - November 19, 2013
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities - November 13, 2012

Related Research

- Taiwan Ratings' Ratings Definitions – November 11, 2021

(Unless otherwise stated, these articles are published on www.taiwanratings.com)

Ratings List

Ratings Assigned

E Ink Holdings Inc.	
Issuer Credit Rating	twA-/Stable/twA-2

Certain terms used in this report, particularly certain adjectives used to express our view on rating relevant factors, have specific meanings ascribed to them in our criteria, and should therefore be read in conjunction with such criteria. Please see Ratings Criteria at www.taiwanratings.com for further information. Complete ratings information is available to subscribers of Rating Research Service at rrs.taiwanratings.com.tw. All ratings affected by this rating action can be found on Taiwan Ratings' public website at www.taiwanratings.com.