

Media Release:

Formosa Plastics Companies Outlook Revised To Negative From Stable On Weak Profitability; 'twAA/twA-1+' Ratings Affirmed

October 30, 2023

Rating Action Overview

- Persistent pressure on profitability and a jump in adjusted debt in 2022 will likely keep the financial leverage ratios of four Taiwan-based petrochemical companies higher than current ratings indicate. The four are **Formosa Plastics Corp.**, **Nan Ya Plastics Corp.**, **Formosa Chemicals & Fibre Corp.**, and **Formosa Petrochemical Corp.**, which generated combined EBITDA of new Taiwan dollar (NT\$) 130.5 billion in 2022.
- We expect continued capacity additions in China and weak demand globally to constrain a rapid rebound in their profitability in 2023-2024.
- We therefore revised our outlook on the long-term ratings on the four Formosa Plastics companies to negative from stable. At the same time, we affirmed our 'twAA' long-term and 'twA-1+' short term issuer credit ratings on the companies, as well as the 'twAA' long-term issue ratings on their unsecured common corporate bonds and the bonds that Formosa Group (Cayman) Ltd. issued and proportionally guaranteed by the four companies.
- The negative outlook reflects an increasing likelihood that the four companies may not be able to lower their ratios of debt to EBITDA close to 2x over the next 24 months, given weak demand and continued capacity additions, particularly in China.

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Rating Action Rationale

A weak global economy, aggressive capacity additions, and competition from imports of gas-based chemicals will weaken the profitability of the chemical business for the four Formosa Plastics companies beyond our previous forecast. Demand in the chemical sector remains subdued and prices are sluggish amid muted economic growth and exports in China. In addition, further capacity additions will limit the sector's turnaround, although restocking and high seasonal demand have stabilized the sector for now. China will continue to lead global capacity additions from base chemicals to intermediate chemicals, and downstream plastics and fibers over the next two to three years. There are no signs of a material slowdown in the country's bid to increase its total ethylene capacity to about 70 million metric tons a year in 2025.

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Chemical prices could also be weaker than crude oil prices on continued supply growth, constraining gains in product spreads for most chemical companies. S&P Global Ratings recently forecast that Brent crude oil prices will average US\$85 per barrel for the rest of 2023 and stay flat in 2024-2025. Supply control by OPEC and the continued war between Russia and Ukraine, as well as the recent outbreak of conflict in the Middle East could create a price floor for crude oil.

The impact of high crude oil prices on production costs will be more significant for Asia's chemical sector than other regions. This is because the region's chemical supply chain relies more on naphtha as an upstream raw material. The hit will flow through to input costs to produce base chemicals for downstream chemical producers, leaving them in an unfavorable cost position, amid weak global demand.

The recovery will be weaker and slower. We forecast that the chemical business of the four companies will recover at a much slower pace in 2023-2024 than we previously thought, with utilization rates generally below mid-cycle levels. This business includes olefins, aromatics, and downstream plastics and fibers.

We expect restocking needs amid rising oil prices and stabilizing global demand for physical goods to support a rebound in chemical pricing and product spreads in the near term. We also assume growing demand will assist a return to a better supply and demand balance from 2025.

In addition, low profitability in the sector will shake out small and inefficient production facilities, particularly in China, where the government is tightening energy efficiency requirements to achieve its climate goals. We expect the four companies to stay competitive with their strong cost position through vertical integration and constant investments in process improvements.

A better performance at Formosa Petrochemical's oil refining business and differentiated products for some of the companies may be insufficient to lift overall profitability. We expect Formosa Petrochemical's oil refining business, Nan Ya Plastics' electronics material business, and a few other differentiated products to stage a stronger recovery over the next two years. However, this will not be sufficient to materially lift the consolidated performance of the four companies, given continued weak profitability from commodity chemical sales.

We expect Formosa Petrochemical's refining margin to improve to US\$10 per barrel over the next few quarters on the back of high oil prices and still-tight supply. In addition, growing attention to global warming and the shift away from fossil fuels have discouraged investments in new refining capacity, except in China. Demand growth will likely exceed new capacity additions in 2023-2024, supporting higher utilization and refining margins.

Nan Ya Plastics' electronics material business suffered from a sharp downturn in the global technology industry over the past three quarters as demand for PC and consumer electronics products shrank after the pandemic. However, we believe destocking in the global tech industry is close to an end.

In addition, new applications, particularly artificial intelligence, electric vehicles, and automation will drive demand growth for electronics materials, particularly Nan Ya Plastics' chip substrates. We forecast this business will grow faster than the company's chemical businesses over the next two to three years.

Profitability for the four companies could stay significantly below mid-cycle profitability in 2023-2024. Accordingly, we forecast consolidated EBITDA of about NT\$103 billion for 2023, down from NT\$130.5 billion in 2022. EBITDA could increase to about NT\$133 billion in 2024 on the back of a

slight widening in the product spreads of commodity chemicals, stable oil refining margins, and faster growth in demand for electronics materials. This remains substantially below our previous forecast and below the mid-cycle profitability of the four companies.

Uncertainty surrounds our assumption of gradually improving leverage. We forecast the four companies can use cash flow to repay debt in 2024-2025, based on improving profitability and stable cash dividend payout ratios and capital spending. We also assume they will remove the remaining US\$1 billion debt guarantee for the group's steel mill project in 2025. This will further reduce adjusted debt.

We therefore forecast adjusted debt for the four companies will decline gradually in 2024-2025, after rising to about NT\$306 billion in 2023. We do not factor in spending on large chemical projects, including Formosa Petrochemical's chemical complex in Louisiana in the U.S. This is given a currently unfavorable political and market environment.

We believe the four companies will gradually improve their debt leverage (ratio of debt to EBITDA) to close to 2x in 2024, from about 3x in 2023, through improving EBITDA and debt reductions. However, significant downside risk to our forecast persists, given Chinese and global economic uncertainties and prolonged overcapacity in Asia's chemical sector.

Outlook: Negative

The negative rating outlook reflects material risk that chronic oversupply in Asia's chemical market could limit an earnings recovery for the four companies and improvements in their consolidated ratio of debt to EBITDA close to 2x over the next 24 months. Our base case still assumes a gradual decline in the leverage ratio, based on our expectation of a gradual profitability recovery and stable dividend payments and capital expenditure (capex). However, continued capacity growth and slowing economic growth, particularly in China, are material downside risks to the ratings, given limited headroom for the ratings.

Downward scenario

We could lower the long-term ratings on the four companies if their consolidated ratio of debt to EBITDA fails to decline below 2.5x over the next 12-24 months. Scenarios that could lead to this include:

- Aggressive capacity additions, together with slowing demand growth in China, resulting in sustained oversupply that suppresses product prices and product spreads, if the companies cannot maintain their cost advantage or diversify from highly competitive commodity chemicals, or competition from gas-based chemical producers in the U.S. and Middle East rises; or
- The four companies make more aggressive cash dividend payouts, capex, or other investments that are substantially above our base case.

Upward scenario

We may revise the outlook back to stable if the four companies can improve and sustain their consolidated ratio of debt to EBITDA close to 2x. Scenarios that could lead to this include:

- The four companies can withstand competition from the new capacity by maintaining their advantages in cost and product differentiation, leading to a significant recovery in profitability when the market adjusts to the significant capacity additions, particularly in China, over the next one to two years. Stronger and sustained growth in chemical demand in Asia, particularly in China, or substantially lower input costs could also facilitate such a recovery.

- The four companies take action to lower debt beyond our current assumptions, likely through lower capex or dividend payout ratios, or investment disposals, although we see a low likelihood of this.

Our Base-Case Scenario

- Taiwan's economy to expand 0.5% in 2023 and 3.0% in 2024. China's economy to grow 4.8% in 2023 and 4.4% in 2024. Asia-Pacific GDP to grow 4.3% in 2023 and 4.4% in 2024.
- Brent oil price of US\$85 per barrel for the rest of 2023, and US\$85 per barrel in 2024-2025.
- Refining margin to rise moderately over the next few quarters, after falling to US\$7.3 per barrel in the second quarter of 2023, due to recovering demand and limited capacity additions.
- Chemical demand and product spreads in Asia to recover gradually in the fourth quarter of 2023. Significant capacity additions and still-weak demand in China to cap a further recovery. Product spreads for base chemical and general plastics like PE, PP, and PVC to be significantly below mid-cycle levels in 2024.
- Combined revenue for the four companies to rise by about 6% in 2024, following a 12% decline in 2023. This mainly reflects recovering demand that could raise utilization after a weak recovery in China's chemical market in 2023. Growing oil consumption and high crude oil prices will also support revenue. Nan Ya Plastics' electronics material business to grow faster as new applications such as AI and Internet of Things (IoT) drive demand growth.
- Formosa Petrochemical's refining units to operate at close to 90% utilization in 2024, up from about 85% in 2023 and 80% in 2022. Olefin utilization to stay weak at about 70% in 2024, after falling to about 65% in 2023 from 74% in 2022. This reflects weak demand compounded by significant capacity additions in China and rising imports from the U.S.
- A limited recovery in the utilization of Formosa Petrochemical's naphtha crackers, reflecting persistently weak demand for downstream chemicals and generally low utilization for the other three core companies' manufacturing facilities, given a very high level of integration among the four companies.
- Consolidated gross margin before depreciation and amortization for the four companies to decline to about 12% in 2023 from 12.9% in 2022, before recovering to about 14% in 2024.
- Working capital inflow of NT\$20 billion-NT\$30 billion in 2023, followed by modest working capital outflow in 2024 with recovering sales.
- Capex plus investments to rise to about NT\$80 billion in 2023, driven by Nan Ya Plastics' significant spending on electronics materials and some COVID-19-delayed projects. The amount to dip in 2024-2025 without large-scale chemical projects.
- Bond guarantee by the four companies for a steel mill in Vietnam to stay at US\$1 billion before bond maturity in April 2025.
- Average interest rate to rise by 0.5 percentage point in 2023 and decline slightly in 2024.
- Average tax rate to stay at 18%-20% in 2023-2024.
- Cash dividend payout to remain at 70%-75% of the previous year's net income.

Four Formosa companies--Forecast summary

Industry sector: Commodity chemicals

(Mil. NT\$)	2020a	2021a	2022a	2023e	2024f	2025f
Revenue	914,610	1,334,536	1,466,660	1,280,034	1,365,565	1,435,559
EBITDA (reported)	112,310	291,395	122,683	95,417	125,229	142,515
Plus/(less): Other	2,828	4,776	7,837	7,837	7,837	7,837
EBITDA	115,138	296,171	130,520	103,253	133,066	150,352
Less: Cash interest paid	(4,876)	(3,715)	(5,243)	(9,627)	(8,695)	(7,105)
Less: Cash taxes paid	(8,679)	(17,712)	(41,277)	(11,159)	(14,617)	(17,684)
Funds from operations (FFO)	101,583	274,745	84,000	82,468	109,753	125,562
Cash flow from operations (CFO)	135,592	208,454	132,406	145,952	125,224	143,575
Capital expenditure (capex)	63,076	73,707	75,914	79,867	76,402	73,693
Free operating cash flow (FOCF)	72,516	134,746	56,492	66,085	48,822	69,882
Debt (reported)	385,380	363,096	474,131	482,809	477,171	460,780
Plus: Lease liabilities debt	7,507	6,989	7,099	7,099	7,099	7,099
Less: Accessible cash and liquid Investments	(204,319)	(236,937)	(211,962)	(214,750)	(214,750)	(214,750)
Plus/(less): Other	123,754	56,420	30,708	31,135	30,000	--
Debt	312,321	189,568	299,976	306,293	299,519	253,128
Cash and short-term investments (reported)	241,227	281,064	246,754	250,000	250,000	250,000
Adjusted ratios						
Debt/EBITDA (x)	2.7	0.6	2.3	3.0	2.3	1.7
FFO/debt (%)	32.5	144.9	28.0	26.9	36.6	49.6
Annual revenue growth (%)	(23.0)	45.9	9.9	(12.7)	6.7	5.1
EBITDA margin (%)	12.6	22.2	8.9	8.1	9.7	10.5

All figures are adjusted by Taiwan Ratings Corp., unless stated as reported. a--Actual. e--Estimate. f--Forecast. NT\$-- new Taiwan dollar. N.M.--Not meaningful.

Liquidity: Adequate

The short-term ratings are 'twA-1+'. We believe the four companies have adequate liquidity to meet their needs over the next 12 months. We expect the consolidated ratio of liquidity sources to liquidity uses to be about 1.3x over the next 12 months. The group will likely have positive liquidity sources minus uses, even if our forecast EBITDA declines by 15%.

The four companies have solid banking relationships and a generally high credit standing to support their financial flexibility, as reflected in their low interest rates, including a 1.62% rate on Formosa Plastics Corp.'s 7-year NT\$-denominated bonds that the company issued in June 2023. The four companies also have large undrawn credit lines.

We also expect the four companies to easily meet the requirements of loose financial covenants on their current ratios, ratios of liability to equity, interest coverage, and net worth for debt at their subsidiaries.

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Principal liquidity sources:

- Cash and short-term investments of NT\$241 billion at end-June 2023.
- Cash funds from operations of NT\$120 billion-NT\$125 billion for the 12 months ending June 30, 2024.
- Working capital inflow of about NT\$10 billion for the 12 months ending June 30, 2024.
- Undrawn long-term credit facilities maturing beyond June 30, 2024, of about NT\$46 billion as of end-June 2023.

Principal liquidity uses:

- Debt maturity plus short-term debt repayment of about NT\$209 billion over the 12 months ending June 30, 2024.
- Capex of NT\$77 billion-NT\$80 billion over the 12 months ending June 30, 2024.
- Cash dividend payout of 70%-75% of the previous year's net income.

Ratings Score Snapshot

Issuer Credit Rating: twAA/Negative/twA-1+

Note: The descriptors below are on a global scale.

Business risk: Satisfactory

- Country risk: Intermediate
- Industry risk: Moderately high
- Competitive position: Satisfactory

Financial risk: Intermediate

- Cash flow/Leverage: Intermediate

Anchor: twaa-

Modifiers

- Diversification/portfolio effect: Neutral (no impact)
- Capital structure: Positive (+1 notch)
- Financial policy: Neutral (no impact)
- Liquidity: Adequate (no impact)
- Management and governance: Satisfactory (no impact)
- Comparable rating analysis: Positive (+1 notch)

Stand-alone credit profile (SACP): The four companies have not been assigned an SACP

- Group credit profile: twaa+
- Entity status within group: Highly Strategic

Related Criteria & Research

Related Criteria

- General Criteria: Group Rating Methodology - July 01, 2019
- General Criteria: National And Regional Scale Credit Ratings Methodology - June 08, 2023
- Criteria | Corporates | General: Reflecting Subordination Risk In Corporate Issue Ratings - March 28, 2018
- General Criteria: Guarantee Criteria - October 21, 2016
- General Criteria: Environmental, Social, And Governance Principles In Credit Ratings - October 10, 2021

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- Criteria | Corporates | General: Corporate Methodology: Ratios And Adjustments - April 01, 2019
- Criteria | Corporates | General: Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers - December 16, 2014
- General Criteria: Country Risk Assessment Methodology And Assumptions - November 19, 2013
- General Criteria: Methodology: Industry Risk - November 19, 2013
- Criteria | Corporates | General: Corporate Methodology - November 19, 2013
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities - November 13, 2012
- General Criteria: Principles Of Credit Ratings - February 16, 2011

Related Research

- Taiwan Ratings' Ratings Definitions – Nov. 11, 2021

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

Ratings List

Outlook Revision; Ratings Affirmed

	To	From
Formosa Plastics Corp.		
Formosa Chemicals & Fibre Corp.		
Formosa Petrochemical Corp.		
Nan Ya Plastics Corp.		
Issuer Credit Ratings	twAA/Negative/twA-1+	twAA/Stable/twA-1+

Ratings Affirmed

Formosa Plastics Corp.	
Formosa Chemicals & Fibre Corp.	
Formosa Petrochemical Corp.	
Nan Ya Plastics Corp.	
Issue Credit Ratings	twAA
Formosa Group (Cayman) Ltd.	
Issue Credit Rating	twAA

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.

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