

**Summary of the Young & Partners 37th Annual Senior Chemical Executive Conference**

**November 13, 2024**

**In Person and Virtual Conference from 11:45 am EST to 5 pm EST  
Yale Club of New York City**

- 12:20 pm     **Welcoming Comments**  
Peter Young, CEO and President, *Young & Partners*
- 12:30 pm     **The Current Challenges and the Future State of the Chemical Industry**  
Joe Chang, Global Editor, *ICIS Chemical Business*  
Peter Young, CEO and President, *Young & Partners*
- 1:15 pm     **Perspectives on Asia and the Middle East and the Impact on Chemicals**  
Dewey Johnson, SVP & Global Lead, *Chemical Market Analytics*  
Lien-Hang T. Nguyen, Director of the Weatherhead East Asian Institute, *Columbia University*  
Charlie Vest, Associate Director, China Practice, *Rhodium Group*  
Moderator: Peter Young, CEO and President, *Young & Partners*
- 2:00 pm     **M&A and Financial Developments – Implications for Management**  
Peter Young, CEO and President, *Young & Partners*  
Stephen Floyd, Managing Director, *Young & Partners*
- 2:30 pm     **Virtual and In Person Town Hall and Coffee Break**
- 3:15 pm     **Global Energy & Chemical Markets: Emerging from the Trough**  
Dewey Johnson, SVP & Global Lead, *Chemical Market Analytics*
- 4:00 pm     **Speakers Roundtable: What Does the Future Hold?**  
Joe Chang, Global Editor, *ICIS Chemical Business*  
Stephen Floyd, Managing Director, *Young & Partners*  
Dewey Johnson, SVP & Global Lead, *Chemical Market Analytics*  
Lien-Hang T. Nguyen, Director of the Weatherhead East Asian Institute, *Columbia University*  
Charlie Vest, Associate Director, China Practice, *Rhodium Group*
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Moderator: Peter Young, CEO and President, *Young & Partners*

5:00 pm

**Conclusion of the Conference**

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## **The Current Challenges and the Future State of the Chemical Industry**

**JOE CHANG, GLOBAL EDITOR, ICIS CHEMICAL BUSINESS**

**PETER YOUNG, CEO & PRESIDENT, YOUNG & PARTNERS**

Chang: We will start with the macroeconomic outlook and some megatrends within chemicals. There has been uncertainty around the economical and geopolitical landscape and the U.S. elections that you can hear during the earnings calls and conversations with executives. Some good news is that the central banks have a coordinated rate-cut cycle taking place with a likely 50 basis point cut and another quarter point cut. However, inflation is certainly not dead. Core CPI is up 3.3% year over year, unchanged from the prior month and actually up compared to 3.2% in August. The 10-year treasury yields are about 4.4% and continue to be a real headwind for housing and residential buildings. There was a lot of excitement temporarily for the China stimulus announcement, but that died with the lack of details and the likely impact. It will take us two or three more quarters before we see the impact of these rate cuts.

Hearing from executives, we can see that volumes continue to be weak. There was initial optimism earlier this year that there would be a second-half recovery. It is obvious now that it is not happening and will not happen in Q4. Recovery are now pushed out and expected in H2 2025 or 2026. Building and construction, DIY coatings, consumer durables, and automotive are weakening in U.S. and Europe in particular. A chemical CEO quoted, not for attribution, that demand is as low as the start of COVID in some sectors. The U.S. manufacturing PMI has been in contraction, with no recovery over the last two years. This certainly confirms there is no recovery yet. China has been shaky in their recovery with a slight expansion in October. Europe, not surprisingly, has been the weakest region, contracting for 28 consecutive months with no end in sight. They are facing numerous structural issues. The services side, however, has been propping up the European economy. In fact, all three regions (U.S., Europe, China) are in expansion territory for services.

I would like to shift to megatrends that are driving supply and demand in chemicals. Big Oil, particularly the Middle East, is shifting away from fuels in the energy transition. They want to put more oil into chemicals that they expect to grow at a GDP plus rates. There are significant capital expenditures being spent on these chemical projects. Decarbonization and circularity trends are continuing, even in difficult times. Customers are striving to meet their targets with regard to emission reduction and use of recycled or bio-based packaging. There are big investments being made, with the biggest one being Dow's net-zero carbon cracker. They are capturing the CO<sub>2</sub> and putting it into the Alberta Trunk line. They are aspiring to sell zero carbon polyethylene and hope to sell it at a premium. LyondellBasell also is putting a third of their capital expenditures into plastics recycling and are hoping to capture 20% market share in North America and Europe in recycled plastics. A third megatrend is reshoring and nearshoring. This is likely to be a trend for this decade. Many manufacturing supply chains have moved away from China to closer to home. We have the Inflation Reduction Act, the Chips Act, bipartisan infrastructure laws and tariffs driving that. We see capacity by 2027 being at record levels in ethylene and propylene. This is less seen in para-Xylene but there is overcapacity today with additional capacity coming on. To visualize the competition intensifying, we are estimating an additional 7 million tons from the Middle East by 2028 and an additional 7 million tons elsewhere, mostly in Asia but also in the U.S. The Chinese state-owned enterprises are continuing to build capacity, but not necessarily for profit-driven reasons. They are willing to accept much lower profits or even operate at a loss. U.S. shale gas players will be able to compete given their cost position, and they export almost 50% of the polyethylene they produce. The people getting squeezed are the high-cost commodity chemical players in Europe, Japan, South Korea and Brazil. We see a major restructuring taking place in the industry, as companies pivot their business models towards specialties and green and low carbon chemicals. Everyone says innovation is critical, of course, but some European players are particularly backed into that corner.



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U.S. and China have had a trade war that started in the first Trump administration in 2018. Since that trade war, how have U.S. ethylene and derivatives exports to China done? The answer is that it is up almost five times, to 4 million tons in 2023. This trend continues in 2024 as well. There was a trade deal struck in 2019 where some tariffs were taken down and others reduced, but by February of 2020, China offered waivers on the tariffs. Since then, U.S. exports have skyrocketed. With Trump becoming president, although he may be using tariffs as a negotiating tactic, clearly things are going to change. In the 70 chemicals that ICIS covers, there has been a 45% increase in exports from U.S. to China. The percentage of U.S. exports to China of the total exports has also increased.

Companies will have to rethink where they spend their investment and research dollars with such a fundamental shift in competitiveness. The Middle East continues to be aggressive in commodities, plastics and some specialties as well. In the near terms, rate cuts will happen in 2025 so there is some path for a rebound, but there are no indications that we are there yet.

Young: Looking at the big picture, Europe has been suffering from a weak economy and China is also slowing down. There will be some experts who will talk about this issue later on during the conference. China's economy is struggling structurally to grow and although there are stimulus packages that they have proposed, it will not be enough to solve the debt problem. The other struggle for the global economy is Chinese and Middle Eastern capacity. The Chinese are not competitive in terms of their cost position and one problem with competing against Chinese businesses is that they are willing to lose money because they are state-owned enterprises. It is going to be very challenging for the other competitors with the oversupply and the weakening demand, particularly in Europe.

Chang: We have seen actual announcements for shutdowns. Versalis Italy has planned to shut down crackers and LDPE lines for polyethylene and another cracker is being offered for sale or joint venture. ExxonMobil is also shutting down capacity. Who is going to buy these assets? We see a growing pile of assets being shut down, without a change of ownership necessarily.

Young: It is a long list of people reviewing their assets. Another issue is that for some companies there may be no place to go. When you have so much of your capacity in Europe, and heavily integrated facilities in places such as Germany, it is very difficult to decouple these assets. It is not surprising that the volume of commodity chemicals M&A has plunged and that there was not a single commodity chemical business or asset sale in Europe in the first nine months of 2024.

What is your view on China, particularly in chemicals?

Chang: There is limited optimism that things will get better materially. We believe the real estate structural and debt issues will not go away. After the financial crisis they already had their tremendous stimulus, debt booms and property booms that we will not likely see a repeat of.

Young: What do you think is the mentality of the Middle Eastern players today?

Chang: The energy transition has been slower than people have anticipated in the U.S. and Europe. Middle East players will have to continue to put significant CapEx into chemicals and plastics. Just as an example, Saudi Aramco want to quadruple the amount of oil they put into chemicals from 1 million barrels a day today to 4 million barrels a day by 2030. They can do this in a couple ways. They can build new capacity, which they are doing in the Middle East and outside, such as Korea. They are also taking minority stakes in Chinese companies, about 10% stakes, which come with crude oil supply agreements to put more of their oil in existing projects and to finance future expansions.

Young: You make a good point because a lot of them are doing joint ventures with Asian companies, in part because they perceive that the long-term growth will be there. How do you feel about the US Presidential elections and the possibility of tariff increases?

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Chang: Where to begin? I will mention the tariffs, at least. The President does have a lot of power here to unilaterally make changes to tariff policy. Where will we also see the changes? It will be lower tax for corporations and individuals, and less regulation of the chemical industry, energy policy, and LNG exports. There is optimism in the business community as evidenced by the stock markets reaching record highs. I think Trump is going to be one of the most powerful presidents in memory just because you have control of the House and Senate and a hand-picked Supreme Court. Policies will be much easier to push through, and it will certainly be a busy four years, at least from a journalistic standpoint, with a lot to cover.

Young: With all the disruptions, it will be difficult for those of you in the audience who are running chemical businesses. I know many are saying that they are having trouble creating even a base case forecast because of the number of scenarios that are possible.

Young: Do you have any opinions on the impact of AI on the chemical industry?

Chang: The chemical industry has been very slow in terms of adopting new technologies and everyone is seeing whether it can help them discover new molecules or help in other processes. In AI data centers, there are opportunities for cooling technologies to make them run more energy efficient. I think the energy requirements for these data centers are tremendous. Peter Huntsman was pointing this out as well, that we rely on cheap power, electricity, and energy in the U.S. and AI data centers will soak up a lot of it. We have to come to some better solutions for this problem and currently there are nuclear energy and other small modular reactors being developed. That is a concern for the chemical sector as well just to maintain their competitiveness.

Young: I have had discussions with people who were leaders in AI and we have done our own analysis to see whether AI is a tool in the investment banking industry. For the chemical industry, there will be some natural back office processes that may be opportunities, but in the plants you cannot replace the operators there.

I think the big issues are the indirect effects from AI, such as the energy issue. I believe with AI, people have been excited, but much of the hype is phony. AI only operates well when the data is pristine, and it is only as good as the data that it is fed. If the data is not pristine, AI may make stuff up. The other problem is that AI is not economic at this point for the providers. If you give out the use of AI for free, of course people will use it. But, if they have to pay the real cost of the product, there will be a disconnect. The top 4 guys are going to spend \$250 billion dollars on AI in 2024 on data centers, etc. What is the return you will need on that investment and how much money can you make when you charge \$30 a month for unlimited use? There is a relatively small part of AI where the data is a high value application and it is operating on very controlled data. I think there will be many people creating AI companies who will lose money.

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## Perspectives on Asia and the Middle East and the Impact on Chemicals

**DEWEY JOHNSON, SVP & GLOBAL LEAD, CHEMICAL MARKET ANALYTICS**

**LIEN-HANG T. NGUYEN, DIRECTOR OF THE WEATHERHEAD EAST ASIAN INSTITUTE, COLUMBIA UNIVERSITY**

**CHARLIE VEST, ASSOCIATE DIRECTOR, CHINA PRACTICE, RHODIUM GROUP**

**MODERATOR: PETER YOUNG, CEO & PRESIDENT, YOUNG & PARTNERS**



Young: I am honored to have everyone here today. This panel consists of experts with a great deal of expertise about the countries we are going to talk about. Dewey Johnson runs Chemical Market Analytics, a leading company that does analyses of chemicals globally. He had his annual World Chemical Forum which I had the privilege of speaking at in September. Next, we have Charlie Vest, who is with Rhodium Group, a pioneer in terms of analysis related to China. They are a group that has immense expertise about China and are particularly known for developing their own independent analysis and data. Last, we have Lien-Hang Nguyen, who is a professor at Columbia University and the head of the Weatherhead Institute and covers many countries in Southeast Asia. Gathering this group of panelists together will help us understand what is happening in those regions.



Charlie, if you could start off and comment on what is going on economically and politically in China. There is a huge debate over whether the Chinese economy is going to decline or not. They are certainly struggling to meet their goals of 4%-5% growth.

Vest: It is a delight to be here and to be with this esteemed panel. A comment about Rhodium Group. We are split between analysis on China and on energy and deployment. So we have insights about both. We work with some chemicals companies, but we are not chemical experts so I hope you will bear with me. What is happening in the Chinese economy? Anecdotally, the Chinese economy is struggling. Q3 headline data says that the Chinese economy grew at 4.6%. Our view is that the growth was much lower. We base our view on our look at the expenditure side of GDP – households, business investment, net exports and government spend. Retail growth has been 3.5%, remarkably lower than previous years, with our conclusions derived from systemic unemployment and low wage growth data. Household consumption is also weak. Business investment can be understood by using a well-established indicator, bank lending data. We are at record lows of 5.5% growth of bank lending, after you take out the rolled over debt that is going into local governments to refinance. Joe Chang mentioned earlier that China underwent a massive expansion of its banking sector during the global financial crisis. That is what fueled a lot of growth in the property sector and the banking sector. Today, it simply cannot expand at the rate of growth that it once did. This has made monetary policy a less useful tool to stimulate the economy. Government spending has been shockingly poor and a drag on growth this year. Chinese local governments are enormously fiscally constrained and China's tax base derives from these sectors that see the most challenges, particularly property. Growth in areas such as services is not well taxed and to tax them would put a tax on consumers in a way the Chinese government is less willing to do. The Chinese fiscal system is more constrained than I think is widely recognized. This is something the IMF is beginning to discuss seriously.



Where does that leave the Chinese economy? The silver lining for growth this year is that the trade surplus in October year over year was up 16% and a lot of that was driven by systemic weakness in domestic consumption. As China's state sector has expanded, it is very difficult to convince companies to downsize. They have faced little incentives to let unprofitable ventures die, and there is instead a perverse incentive to continue growing during cycles of overcapacity. Hence a flood of low-priced products are being sold into countries outside of China. Now

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we are seeing trade defense measures being erected, such as in Europe where they are placing definite duties on electric vehicles coming from China. We will see this in the U.S. and we are already seeing it in Brazil and India.

Young: That was very helpful. One question is whether the Chinese will succeed in its strategy of creating many competitors and then eventually supporting the country champions. Particularly now, there is not necessarily a system to weed out the poor competitors in areas such as electric vehicles. Every electric vehicle company is losing money in China. A huge part of this is the encouragement to price lower than what it is worth. Their government policy for controlling the population is also counter to what is needed by entrepreneurs, causing a huge clash. Further, the Chinese have recently put in place measures to help the local government refinance in China. The local governments have huge debts and the revenues that came from selling land to developers have dried up considerably. What is your opinion about that? Will these strategies reduce the problem?

Vest: I mean, it does not even do that. There have been subsidies for trading in household appliances, reducing lending rates, etc. It has been heavily discussed on how to help increase local government spending. For some context, the Chinese government says that there is 14 trillion yuan worth of debt out there in the system. Once you account for local government finance vehicles, which are implicitly government debt, that number increases to about 50 to 60 trillion yuan. The Ministry of Finance announced that they will be providing debt swaps to the tune of 2 trillion yuan for the next 10 years. This is only to refinance expensive debt and is nowhere near what is necessary to tackle the local government debt.

Young: One comment before handing it off to Professor Ngyuen. I do not think anyone wants China to fail. If it did, there would be huge negative challenges for the global economy. Professor Ngyuen, can you comment on what is going on in the countries you cover?

Nguyen: It is very exciting to teach modern Southeast Asia and my perspective is that the role that the chemical industry will play in Southeast Asia is anchored by its diversity. It is clear as my capacity as the director of the Weatherhead Institute that the chemical industry is a priority, which is clearly articulated by the leaders of many of the 10 nations. They have said it will be the economic pillar of industrialization, urbanization and consumer demand. In addition, I see Southeast Asia as being strategically poised to take advantage of the chemical industry because of its labor force. There is a young workforce, increasing urbanized, and a growing middle class. In addition, there is growing and heightened demand for products made with chemicals. Its strategic location with easy access to the Indian Pacific oceans and the Middle East benefits anyone who is also tied into China. Of the 10 countries in Southeast Asia, we can discount Myanmar, Brunei, Cambodia, and the Philippines. We can focus on Vietnam, Singapore, Malaysia, Thailand and Indonesia as the leading countries with regard to the chemical industry.

Again, I want to emphasize the government's stance for this pivot, or this turn to the chemical industry. Vietnam has talked about their 2030-2040 vision, which is committing to 9%-11% annual growth in green chemicals. Singapore as a high income city-state has also committed to the sustainable Jurong Island vision. In Malaysia and Thailand, I see investment in circular technologies and recycling technologies. Indonesia is reported to want independence and less reliance on imported petrochemicals. Sustainability will a driver and many governments have committed to it. Economic and geopolitical influences will also be a driver. This was an area that benefited the region during the pandemic and amidst changes in the supply chains due to U.S. – China trade war. Technological advancements and digitalization are drivers of demand in putting more resources in R&D in areas such as semiconductors. On the other hand, there are some disadvantages since Southeast Asia that has a regional structure that does not unify the region. We see military dictatorships or communist countries that complicate the region's struggles to act as a unified block.

Young: It is surely a difficult question to comment about all of Southeast Asia since there is so much diversity within that region. In addition, that is the part of the world that is going to achieve much greater growth than most of the West. But the picture country by country can be very different, in terms of sizes of population and strategies. The one factor that is out of their control is that they are not large countries in general. I am now going to ask Dewey to comment about the Middle East and India, particularly relating to the chemical industry.

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Johnson: It is great to be here and talk about the chemical industry. When we talk about growth, it has been China in the last five years who has made up 80% of the demand growth globally in chemicals. Our view going forward is that growth is still material in China but it will be more distributed. The poster child of growth in the next 10 years will be India, who is characterizing 70% of the growth. Many of the major players there in Southeast Asia are clients of ours and see many positives. Companies such as Petronas are looking at how to position for demand growth. In India, we see many oil companies continuing to move into chemicals such as Reliance, the largest player in India. As India demand continues to grow, they will not be able to build capacity to keep up with the demand that is happening. There are challenges in terms of getting approvals to build and the financial requirements that have to occur. As a result, India will be even more of an importer of chemicals. If you are a low-cost advantaged feedstock provider like the U.S. or the Middle East, it will be a great place to partner with. The Middle East has a huge cost advantage and although the nations are not the best of friends, it is a natural partnership. We engage with clients that are looking to invest in chemicals and we always find that they are on a slow rhythm. It takes them much longer than a Western or Chinese company to execute plans. Middle East it takes longer but they commit to build it.

The Middle East will continue to reap benefits from their advantaged feedstock. Earlier this year, Saudi Arabia announced the liquids to chemicals program which they have since retrenched on. They were planning to move 4 million barrels a day of crude oil into chemicals. Depending on the amount of refined product that is yielded, that is anywhere from 100 to 200 million tons of chemicals on a global capacity of 900 million tons. That would transform and restructure the industry. Given the slowing down of the energy transition, the Saudis have recently announced they will not going to build one of the large plants planned to be built in Saudi Arabia. As Peter mentioned before, they have relationships with China, particularly with the state-owned companies in China, and with companies in South Korea. They are looking to create partnerships in those regions since the demand is there. They also want equity relationships that assure movement of their oil feedstocks to their partners. This approach leads to less retaliation or pushback when they do add their own capacity. Qatar is also adding capacity and is moving forward with polyolefins plants in Qatar with CPChem. Kuwait is also planning to invest in chemicals. Fuels demand will be expected to plateau, making chemicals one of the financial engines for the region.

Young: There is certainly more industrial logic for the Middle East than China to expand in chemicals. The Middle East is also motivated by a desire to diversify their revenues and chemicals is clearly a sector that they feel comfortable being in. The extremes situations are the ADNOCs of the world who are comfortable going to buy Covestro and foreign chemical companies. I do not think it is a trend, but it gives you a flavor of how complicated the whole story is. The issues that are geopolitical, economic and industrial in chemicals are becoming more complicated and intertwined.

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## **M&A and Financial Developments – Implications for Management**

**PETER YOUNG, CEO & PRESIDENT, YOUNG & PARTNERS**

**STEVE FLOYD, MANAGING DIRECTOR, YOUNG & PARTNERS**

Floyd: I am going to set the stage for the mergers and acquisitions trends discussion by first talking about the context in which the chemical sector finds itself. The chemical industry is heavily tied to global economic conditions and 2024 has been a very difficult year in a number of respects. An example of one of the most recent victim is Celanese. In the span of seven days, they have lost 45% of their market capitalization. Dow Chemical has not been crippled in the same way, but is almost a third off their high of the year. There are many drivers that have been mentioned, but some of the specific drivers in chemicals are supply and demand from customers, raw material pricing, and the global build-up of capacity. The rationale for the Middle East capacity is to diversify economies and take advantage of strengths, a stark contrast in some ways to China, who does not have the Middle East cost advantage and are really pursuing a different objective. The surge in ESG and sustainability pressures have continued, although some companies have backed away since they have not been as committed or as successful. ExxonMobil and other companies may be a different beast. They have told Congress to continue pressuring on carbon neutrality and sustainability because they have invested so much skin in the game.



The first three quarters of this year has seen all-time highs in global equity indices, particularly in the U.S. The S&P 500 increased 22% and the European market increased 11%. However, whether you look at specialties, commodities, diversifieds or fertilizers, they have largely underperformed the market. The relative valuation standouts would be the U.S. Diversifieds index, the U.S. Specialties index, and the European Specialties index. Specialties, in particular, have been able to succeed in difficult environments. 4 out of the 7 indices we track trade at a premium to the market on a P/E basis, while 3 out of the 7 trade on a premium to the market on a EV/EBITDA basis. The rest are at a discount. This is all against the backdrop that chemical equities have had a difficult time in the last three years, and they have gone from a period of trading at a premium to the market to mostly trading at a discount. It is hard to see that changing over the next two to three years. The chemical industry indices have historically outperformed the market, but one of the hard things to avoid is survivor bias where a company who is in the index today clearly exist with some weaker players merged out of existence, such as PolyOne. If we move to Europe, there is similar trends where chemical indices have done well on an absolute basis. Their equities have ironically performed better than the U.S.

One trend we have also tracked since the early 1990s is valuation relative to size. We have tracked it both on an enterprise value and market capitalization basis. The conclusion is that smaller companies simply do not trade as well as larger companies. You can see that as you graduate from being a sub-\$1 billion market capitalization company to over \$5 billion or \$10 billion, on average, your valuation will be significantly higher. This has been driven by a structural evolution of the investors in the equity markets. The number of analysts covering the stock generally also increase based on the size of the company and based on the number of equity offerings that they do. This is not surprising because analyst behavior is driven by the structure of the investors they cater to.

Switching to debt financing, global debt financing is generally a \$40 billion to \$60 billion base, not including bank financing. 90% of this was investment grade, which sounds high but is actually down a little bit. Some of this is intuitive but high-yield debt has come back after it disappeared one to two years ago. This is a sector that tends to be an investment grade sector and high yield is principally driven by private equity acquisitions or refinancing of high yield debt post-acquisition. In 2003 to 2007 there was a huge surge of high yield debt where Blackstone, Apollo and other private equity firms buying chemical companies and then taking them public. In terms of equity financing, the chemical sector does not lend itself to many equity growth stories. In 2024, the size of the equity issuances market is steady but that is not the whole story. IPOs are generally not that common in the sector and they have been coming

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down in volume, albeit from a modest peak. If you look at the names of the companies that have IPO'd the past number of years and recently, they are all in Asia and mostly China. If you are a private equity player and are looking for the equity markets as your eventual exit, unless it is an Asian chemical business, it has been and will continue to be a challenge.

Young: To build upon the financial critical mass charts that were shown earlier, the explanation is relatively straightforward. As the market went from 60%-70% individual investors to 60%-70% institutional investors, their ability to invest in smaller companies without affecting the stock price became limited. The sad part is that many companies do not take this into account when companies split into two and become smaller companies.

M&A continues to be interesting but the overall story is that M&A is very slow. We have \$37 billion worth of M&A completed in the first three quarters of 2024, not far off from the 2023 totals. One of the deals that made up \$11.4 billion of the total was the long delayed merger of Novozymes and Chr Hansen which was announced in 2022. However, looking at the number of deals, we had only 37 deals completed in the first three quarters compared to 75 deals closed in all of 2023. In addition, If we look at the pipeline of deals announced but not closed, we see a total that is in line with the volume that closed in the first nine months.

The story underneath the totals is even more interesting. Firstly, commodity chemicals deals have fallen dramatically. Commodity chemical deals made up 34% of all deals, while normally they are around 50%. This is not surprising because many people want to get out of commodity chemicals and few buyers want to get in. As a result the volume is lower and the valuations are also lower. The median valuations for commodity chemicals was 12.1x EBITDA in 2021 and has now dropped into the 6.5x EBITDA to 7.5x EBITDA range. The interesting thing is that these multiples are low even at the same time that EBITDA dollars are down. Specialty chemicals have remained relatively healthy. In 2021 the average was 13.6x EBITDA, making it difficult to buy specialty businesses for a good return. It has now slipped to 11.1x EBITDA in 2023 and now even further to 10.4x EBITDA. 10.4x EBITDA may be lower multiple if you are a seller and discouraging, but for a buyer, it is a healthier environment.

Looking at geographies, 45%-55% of the M&A market is in Asia and principally in China over the last seven years. Over the first nine months of 2024, 47% of the deals were in Asia. Unless you are buying Asian businesses, this portion of the market is not relevant to you. If you look at the activity in China, it is almost entirely Chinese companies buying other Chinese companies. Outside of Asia, the U.S. M&A continues to be very strong because of the U.S. is a relatively attractive place to make chemicals. The lower raw material costs and the size of the economy are some of the significant advantages. Europe, however, only had 14.7% of all deals compared to 18.9% in 2023. Plenty of people want to sell in Europe, but not many want to buy. Interestingly, all the deals completed in Europe were specialty chemical deals.

Private equity was mixed as debt was expensive, but has picked up starting last year. There were 8 private equity acquisitions in the first nine months of 2024 compared to 10 in 2023. The share increased from 13.5% to 23.5%. Before we get too excited, of the 8 deals, 6 were from non-Western private equity buyers. In part, this is because private equity has become more global and chemicals has become a global place to invest.

Another trend to notice is an increased number of announced spin-offs, such as DuPont and Honeywell. There has always been some activity historically, with the logic of creating pure-play entities in a non-taxable way. Sometimes there is sense to these decisions but sometimes it is a way to indicate selling their business. I suspect there are a number of people engaging DuPont on their water business for example.

The outlook is that the economic picture continues to be tough. China will continue to have a difficult time growing, with the U.S. growing slowly. The chemical industry as a whole is suffering from weaker earnings with demand being weak. This all leads to significant profit pressures continuing and a huge amount of rearrangement in commodity chemicals. I spoke at the World Chemical Forum on the options for dealing with the severe and prolonged overcapacity commodity chemical companies are facing. I indicated in my speech that it depends on your specific situation: cost position, customers served and where they are located, your manufacturing profile, what

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options you have, where you are located and so forth. There are some people with almost no way out, such as owners of many commodity plastics businesses in Europe.

The other issue that will be a challenge for the industry are the ESG and carbon neutrality issues on top of the business issues. The chemical industry has lost its luster in the stock market and will likely not trade at a premium to the market. In debt markets, lenders are attracted to the steady cash flows and volume is driven more by company needs. Equity financings will continue to be limited since many chemical companies have good cash flows and thus have easy access to the debt markets. IPOs will continue to be limited and the volume has been driven mostly by Chinese companies. This has declined as the Chinese stock market has fallen apart. I do not believe we will see trough levels of M&A for the rest of 2024 and 2025, but I believe there will be many factors that hamper the ability to reach peak levels of activity, particularly in commodity chemicals. Lower interest rates will help some but in the end, strategic players will need to rearrange portfolios and private equity continues to own many businesses that they want to exit for longer than they would like. IPO markets will be tough. Europe activity is easy to predict, with M&A continuing to be low in volume as there are no powerful reasons to want chemical businesses in Europe.

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## **Global Energy & Chemical Markets: Emerging from the Trough**

**DEWEY JOHNSON, SVP DOW JONES & GLOBAL LEAD CHEMICAL MARKET ANALYTICS**



Thank you and it is a pleasure to be with you. Chemical Market Analytics is a legacy news business that was acquired by IHS Markit who was then acquired by Dow Jones. The desire of Dow Jones was to recognize that while news is important, they wanted unique content in energy pricing and chemicals. Most of my team comes from industry and have sat in the seat of the client-side, which we hope gives us the capability to understand what the client needs are. With that, I am going to talk to you today about where the industry is and what our current outlook is on energy and chemicals. We are in an oversupply situation, so really the question is how wide and deep the trough is.

Starting off with feedstocks, we can look at Asia where naphtha is 2/3 of the feedstock, primarily for the big olefin building blocks. Propane, however, is also increasing. The U.S. is mostly in ethane with some propane. In the Middle East, it has been primarily ethane, but we see there is significant increase in naphtha and some increases in propane. We can see that with their liquid to chemicals strategy, they are creating significant on purpose naphtha production. With regard to the demand for global liquids, we see oil products and NGLs growing, not plateauing, contrary to other sources. We can see that fuels are plateauing, but chemicals and feedstocks are expected to grow at a rate greater or equal to GDP. Today the crack spread is different – traditionally it was three barrels of oil going to make 2 barrels of gasoline, and 1 barrel of diesel. A couple years ago, it was \$10 a barrel, but this past year it has been \$18 a barrel. China is doing well because refining has been doing extremely well. However, as we go forward, naphtha has actually been dilutive to the refinery margin, so on purpose naphtha will have a crack spend that is similar to gasoline - \$10 per barrel.

Moving to industry fundamentals through the end of 2027, these charts show feedstocks in terms of energy equivalents. We can see ethane is very close to methane pricing, both significantly advantaged to naphtha. Why is the U.S. industry doing really well? Natural gas is very cheap and there is a lot of it. Ethane is also a driver even though we continue to export more to China. We see the gap closing, but it will still remain competitive. The following chart shows operating rates, where we have taken a few of the major building blocks (ethylene, propylene, chlorine, benzene, and paraxylene) and view them from a utilization rate perspective. We see that we were at the low 90s% at the end of the last decade and the decline is expected to happen with this wave of capacity coming in. We do not expect utilization rates to improve until the end of this decade. The one rising star today is chlorine, which never went to deeply down into a trough and is recovering faster. The decline in chlorine was mostly driven by demand. These trends are the same in terms of margins, where recovery is expected to occur from 2028 to 2034.

Comparing previous troughs to the current trough and the previous peaks to the current peaks, it would appear that the troughs are a little deeper and the peaks have a little less amplitude than in the past. Similarly in terms of cash margins, it would appear that the troughs are around the same, but the peak margins are lower. One of the beauties of chemicals is demand grows as populations and consumption are growing. We have a chart here that plots capacity growth against demand growth for two periods of 15 years. The key takeaways are that in the past 15 years (the period from 2005-2020), there was a great spread among different product areas. Methanol grew 6% per year while acrylonitrile grew 1% per year. In general, capacity outgrew demand during this time period. If you look at the next 15 years (2020-2035), there is a much tighter cluster where demand grows from 2% to 4%. We see going forward that we are going to be in the trough, but the best performers will be chlorine, PVC, methanol, and polyester.

The other interesting story is the excess capacity compared to demand regionally. Every time North America produces they have to export. In the Middle East, this is even more drastic as the production is much higher than the domestic demand capacity. We can also see in the Middle East that in 2000 there was 25 million tons of capacity. By 2040 there will be nearly 160 million tons of capacity. In West Europe, we can see that they will be a net importer. Production is lower than demand and no capacity is being added. India will also have strong demand with some capacity being added, but not nearly at the same rate as demand growth. China is interesting where it is

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producing less than its full capacity but it is on the road to self-sufficiency. We are seeing in almost every chemical chain that China is building that they are over-building and exporting the chemicals. In addition they also export the final product. China is continuing to march down the path of self-sufficiency.

In the global chemical industry, global geopolitics and trade are critical. Today about 40% of chemicals are internationally traded. It is declining as a percentage of the total market, but the total volume of chemicals continues to grow. The Middle East conflict is one of the disruptors where products are being rerouted to the Cape of Good Hope. It is about a 40% increase in the haul distance, creating tightness of the supply and shipping availability and increasing freight rates. On trade, the WTO has been a game changer for the chemical industry. Before that it was GATT, the General Agreement on Tariffs and Trade in 1947. Those rules were there to provide fairness of trade for goods and to promote economic stability. In 2005, the WTO passed rules that covered both goods, services and intellectual property. One of the critical elements of the WTO was settling trade disputes. That system is now broken. Since 2016, the U.S. has blocked all new appellate body judges that are elected to the dispute resolution appellate body. This means that when there are violations of WTO agreements, there is no international body to deal with it – it has to be done on a government to government basis. Traditionally chemicals have been a very efficient commodity, but this has made it easy to violate the WTO rules. We also see tariffs are increasing over time for various critical products.

Plastics are critical to the industry, but environmental issues continue to prevail. We are continuing to move towards waste avoidance and chemical recycling. Our base case is that we will continue to cause leakage to the environment. Landfill will remain an important disposition for chemicals in our base case until 2050 and mechanical recycling will still be preferred. It is initially lower cost and has a lower carbon footprint, but it has limitations with regard to its use. In the green case, policy and technology reinforce each other to promote more recycling, but even in that case, landfill will be a critical disposition route. In our circular economy hypothetical case, we recycle everything we can and what is left will have to be chemically recycled. Looking at polyethylene in each case, fossil-based production of plastics will continue, even when talking about the green and circular case. We see there is a lot of nuance regarding recycled materials and how much is being recycled depends on your definition in many cases. We are also predicting that in the case of a full circular economy, capital investment will be 40%-50% higher than on a fossil fuels basis. The UN Global Plastics Treaty is one ongoing element of the plastics industry. It seems that there will be agreement in minimally recycled content and extended producer responsibility, in tax structure or other monetary systems. There is also conversation about whether this will be an overarching set of global rules. In addition, there have been conversation about production caps, which Europe is for, of course, since they are already shutting down capacity. The U.S. was opposed to this until recently, but took a turn and supported it. The expectation is that there will be advancement, but not much more than what was discussed. The critical issue is the funding and the mechanisms that developed countries and undeveloped countries can pay for.

The other piece on sustainability is net zero carbon emissions. We see in the period of 2020-2023 that many more companies are making net zero pledges. We can also see in the chart on the right that during this period many proposed and in discussion regulations have turned to actions in law. This effort continues to be led by the EU. We hear from our clients in Europe that they believe it is important and they will continue to be a part of it, but not on the bleeding edge. CBAM currently covers areas that are not in chemicals, but in January 2026, it opens up considerations for other products, where we believe chemicals will come into play then. As you all know, COP 29 is happening right now and there was general language on carbon valuation mechanisms, which we shall see what will be determined. At a high level we can see that capacity additions will be greater than demand growth until 2029. There is a new wave still coming. We see in polyethylene one of the biggest overbuilds in 40 years. We see a 70% forecasted operating rate, which is the lowest in the history of polyethylene. We believe by 2029 that 24 million tons of capacity would have to come offline to get to mid 80% operating rates.

What are the options – cut, close or delay? China is still building capacity because many chemical complexes are integrated into refineries and refinery margins are at historical highs. If you look at the full enterprise, they are firing through crackers so there is margin. The second reason is that China will set new emission standards based on a baseline of what emissions are in 2030. There is this perception that they should build now so they can be part of establishing the baseline that will be there in 2030, creating this perverse situation. The profiles of plants that will

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run or run hard are as such: ethane based producers, naphtha-based production integrated refineries, government supported facilities and high-cost or lengthy process to close facilities. The last group is a problem in Europe where there are significant closure and cleanup costs. We can also see in three major freight routes that there significantly elevated freight rates compared to a historical level.

With regard to the impact of Trump's second term, our view is that fossil fuel infrastructure support, federal land transfer and environment regulation rollbacks will occur. At the end of the day however, U.S. oil producers are all about capital discipline. Today Saudi Arabia runs 10 million barrels a day with the ability to run 13 million while the U.S. runs 13 million barrels a day. If you are Saudi Arabia, how much longer can you control supply to affect price while others benefit. Since we are soft on demand, I would say there is downward pressure on pricing. The fate of the IRA is nuanced due to the support for certain manufacturing investments. Will there be cuts on incentives for EVs? There are also a number of investments that may not receive any recovery when cut. In the U.S. we see import dependency decreasing and export orientation increasing, which will have an interesting impact on chemical producers. A partial repeal will be likely with clean energy likely to be an area affected. Clean hydrogen and carbon capture will also be likely challenged a bit.

The final takeaways is that demand will continue to grow, but the cycle has been extended and we will likely see it in a trough period for another 5-6 years. The industry continues to build v.s. buy since firstly there are few buyers and secondly if you build you may be promoted before it gets fully built. Carbon remains a key design parameter around the world, and maybe a speed bump for the U.S. Plastics waste policy will continue to increase and get worse. The industry has been amazing over this almost century of being a solution provider, so we will figure it out.

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## **Speakers Roundtable: What Does the Future Hold?**

**JOE CHANG, GLOBAL EDITOR, ICIS CHEMICAL BUSINESS**

**STEVE FLOYD, MANAGING DIRECTOR, YOUNG & PARTNERS**

**DEWEY JOHNSON, SVP DOW JONES, GLOBAL LEAD CHEMICAL MARKET ANALYTICS**

**LIEN-HANG T. NGUYEN, DIRECTOR OF THE WEATHER EAST ASIAN INSTITUTE, COLUMBIA UNIVERSITY**

**CHARLIE VEST, ASSOCIATE DIRECTOR, CHINA PRACTICE, RHODIUM GROUP**

**PETER YOUNG, CEO & PRESIDENT, YOUNG & PARTNERS**

Young: As you all look at your perspectives on the industry, what is your view of the future?

Floyd: My crystal ball on the global and chemical economy first begins with my watching the national debt for the better part of 30 years. I think at some point in the next 10 years, there will be an economic calamity that will make things like tariffs, trade barriers, tax policy, etc. primary over whoever is in DC. We will have two or three difficult years sorting through inflation and deflation.

Johnson: It is a period of restructuring. We are going to see significant supply chain issues that and the cost of reconfiguration there. They often think that people buy companies that are not burdened with legacy, but companies such as BASF may need to see where they are going to go. I think staying close to change and capturing the movement early is really important.

Vest: After the conversations today, my first thought is the evolving nature of the U.S. trade policy with China. The U.S. competitiveness in petrochemicals leads one to think about a grand bargain with the tariffs. I am also thinking of the structural changes in China, beyond chemicals in areas such as steel, where the overcapacity will continue to stay. The goals with Southeast Asia to go on their chemical journey and the price pressures they will face from China – what will that mean for a unified response? There has to be some discussion on what that must look like.

Nguyen: I think by 2040 Southeast Asia will contribute \$1 trillion annually to the chemicals industry. When you look at the transition from basic chemicals to advanced materials, they are on an upward trajectory. If they can double down on sustainability, they will protect their agricultural base and their natural resources base. Southeast Asia needs to pursue significant collaboration and use their complementary strengths to take advantage of regional integration with India and China. The third is the need to integrate more AI and digitalize the business ecosystem.

Young: Over time, there have been periods where industry dynamics and innovation were drivers of the future. I believe that we have entered a phase where external factors: geopolitical, etc. will have a greater impact on how the industry will perform. Chemical leaders will have fewer tools in their toolkit to deal with what happens to their business over time. The ability to predict what will happen is also becoming more challenging. The key is the ability to pivot and be flexible. I am now going to ask each panelist here to say their last words to the audience.



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Floyd: I believe that smart companies within a reasonable regulatory framework will win. We have to deal with black swans. If you have great people, etc., the right decisions will be made to overcome the future.



Johnson: The thing has been uncertainty and for us that will be a key. We have been working on many scenarios. It is a core strategy of ours to test the robustness of scenarios. We want to extreme-conditions test. We are developing quantitative abilities to run different profiles of chemicals demand and so forth. It is also important to know who you are before pressure can build.

Vest: There are two things I want to say on these fronts. Rhodium has been spending a lot of cross-straits dynamics where things we never thought were possible with pressure campaigns on Taiwan manifesting into disruptions to the global economy. These are not just probable but are possible for the next four years. The other scenario is - what if China gets it together? It is my view and Rhodium's view that its present course is not sustainable. Chinese people are dissatisfied with the level of growth we are seeing right now and those pressures could shift China's actions and be transformative for the global economy.



Nguyen: As a historian of the 20<sup>th</sup> century, I would invest in Southeast Asia in the 21<sup>st</sup> century. Vietnam wants to get out of the middle-income trap. They are very amenable to business. Next, look at the leadership. You have younger, untested leaders, that, although they are part of family dynasties, are doubling down on their industrial revolution and how the chemical industry will play into that.

Young: My comment is a little unusual. Are seeing a global trend of movement towards fascism, the right, and autocrats. How will this context affect us? Most fascist governments ironically have won through an elected process. However, the most dangerous thing is when autocrats surround themselves with "yes" men or women who give them bad information, such as the case with Putin when he invaded Ukraine. This is also happening in China. That is what makes autocrats dangerous. There is also a legacy issue such as Putin with the USSR and China with Taiwan. People also tend to invade other people when they are losing control of their own population. Putin went after Crimea as the Russian people's sentiment was declining, which caused a spurt in nationalism and pride.

The main message is that we must understand the geopolitical situation to truly see how it affects the industry supply and demand over the next ten years.

I want to thank all our panelists for their wonderful speeches and adeptly handling my unannounced questions during the roundtable. I also would like to thank everyone who is here for the event. Our aim has always to have a unique event focused on the issues that senior executives have to deal with, either opportunities or challenges. Also, our goal is to have everyone who attends come away with two or three things that they did not know that will help them with strategic business and financial decisions. We will see you next year.

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