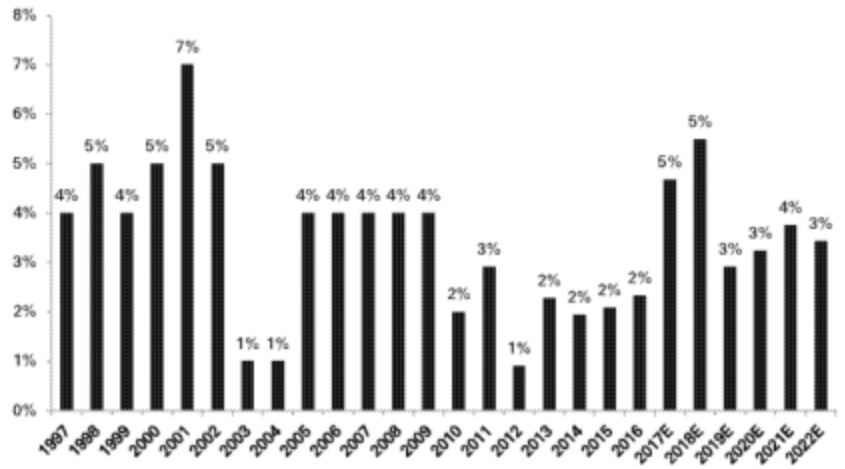
New capacity is being built in the U.S. to take advantage of cheap feedstocks

With the U.S. ethylene industry in the longest and strongest cycle in its history, over 15 greenfield ethylene projects have been announced in the U.S. to take advantage of low cost NGL feedstocks. Of these, 2 are operating (Dow, Oxy) and 6 are under construction with 5 of them world-scale (>1 MM m.t.). Total capacity of the 8 projects is 8.6 MM m.t., 5% of global capacity or 23% of NA capacity. After extensive delays due to permitting issues, construction delays and labor bottlenecks, the remaining 6 U.S. ethylene crackers in the "1st wave of new U.S. capacity are on track to start-up in 1H'18 thru 1H'19. A "2nd wave" of new capacity is likely to start-up in 2021-2023.

Limited new capacity globally will help extend the U.S. ethylene cycle

In addition to a favorable oil-to-gas ratio, we expect limited global ethylene supply additions to help support an extended and highly profitable U.S. ethylene cycle. While North America is in the midst of a major ethylene capacity expansion with announced projects totaling nearly 21 MM m.t. or a 60% increase (14% increase based on global supply) versus 2012, capacity additions outside North America and the Middle East are quite limited. As a result, global ethylene supply is forecast to increase at a 3.5% CAGR '17-'19, which is roughly in-line with forecast global ethylene growth (assuming an ethylene GDP multiplier of 1.1-1.2x).

Figure 9: Global ethylene capacity additions, 1997 - 2022



Source: IHS Chemical, Deutsche Bank

U.S. ethylene chain margins likely to remain elevated

While the decline in crude oil from '14 highs has lowered the profitability of the U.S. ethylene cycle (the spread between ethane-based producers in the U.S. and naphtha-based producers in Asia has narrowed from over 40 c/lb in August '14 to roughly 26 c/lb in November), we still expect U.S. ethylene margins to remain strong and U.S. ethylene producers to remain advantaged versus oil-based producers in Europe and Asia through the rest of the decade. Notwithstanding our view of rising ethane prices and additional U.S. capacity, we remain positive on the U.S. ethylene cycle through the rest of the decade (and likely longer) for 2 key reasons: a beneficial oil-to-gas ratio and limited global supply additions.