Global Chemical Constraints and Opportunities

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Chemical Week

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Current Conditions

- U.S. chemical production rates have improved since early 2007
  - Automotive, housing weakness remains
  - Exports are picking up slack

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North American Chemical Production Index

Source: ACC (Arlington, VA)

Production Trends

- Demand weak in early 2007
  - Sharp inventory correction in late 2006
- Second-quarter demand rebound
  - Prices (and feedstocks) are up sharply

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Supply Situation

- Supply constraints upstream
  - Commodities are tight
    - Ethane breaks from natural gas
    - Ethylene operating rates: 95%
    - Chlor-alkali: 90%

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Regulatory Issues and the Supply Chain

- Rising transport costs
- Transport security costs
  - Greater scrutiny of chemical transport
  - Awaiting DHS Rules
- Rail regulation changes (chlorine, ammonia)

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Regulatory Outlook

- REACH
  - Impact still being determined
  - Substitution for some products?
  - Registration costs, hurdles are a concern

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Regulatory Outlook

- Global warming/climate change
  - U.S. chemical makers expect cap-and-trade program
  - Chemical makers have reduced GHG intensity
- But… switch to natural gas by utilities will affect feedstock supplies

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Regulatory Outlook

- Big consumers are regulators, too
  - Wal-Mart targets ‘chemicals of concern’
  - 20 products could be targeted
  - Supply chain will feel retail impact

Where Are Prices Headed?

- Feedstocks up sharply in third-quarter; producers are still catching up
- Six straight monthly ethylene increases
- Demand usually tails off in 4Q
- Exports, however, are surging

Price Outlook

- Increases announced across all markets for November and December
- Late-year increases are usually difficult to implement but conditions seem to favor producers right now

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Pricing Picking Up Momentum

Producer Prices (% change Y/Y - 3MMA)	**Jun 07**	**Jul 07**	**Aug 07**	**Sep 07**
Feedstocks	10.5	8.4	6.3	9.4
Total Chemicals	2.7	3.0	3.3	3.5
Pharmaceuticals	2.9	2.7	3.2	3.7
Total Chemicals, excluding Pharmaceuticals	2.6	3.2	3.4	3.5
Agricultural Chemicals	16.3	16.8	18.7	19.7
Consumer Products	1.7	1.9	2.1	2.1
Basic & Specialty Chemicals	1.8	2.4	2.4	2.4
Basic Chemicals	1.2	1.9	2.0	2.0
Inorganic Chemicals	4.9	6.0	6.7	7.4
Petrochemicals & Organic Chemicals	0.6	1.5	1.5	1.3
Plastic Resins	-1.7	-1.2	-1.6	-1.9
Synthetic Rubber	6.1	7.0	7.8	7.2
Man-Made Fibers	0.2	-0.7	-0.8	-0.6
Specialty Chemicals	3.7	3.6	3.5	3.4
Coatings	4.2	4.1	4.1	4.0
Other Specialties	3.4	3.3	3.3	3.2

Source: Bureau of Labor Statistics, ACC analysis

* 3MMA= 3 month moving average

Source: ACC (Arlington, VA)

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Long-Term Outlook

- Peak or Plateau?
  - Looks like we're at peak but limited capacity should keep supply tight
- Volatility Here to Stay
  - High energy/feedstock costs underpin chemical prices

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Summing it Up…

- Today - Strong demand and rising prices
- Short-Term - Prices probably still heading higher
- Long-Term - Volatility continues

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Questions?

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