China next: evolution to revolution

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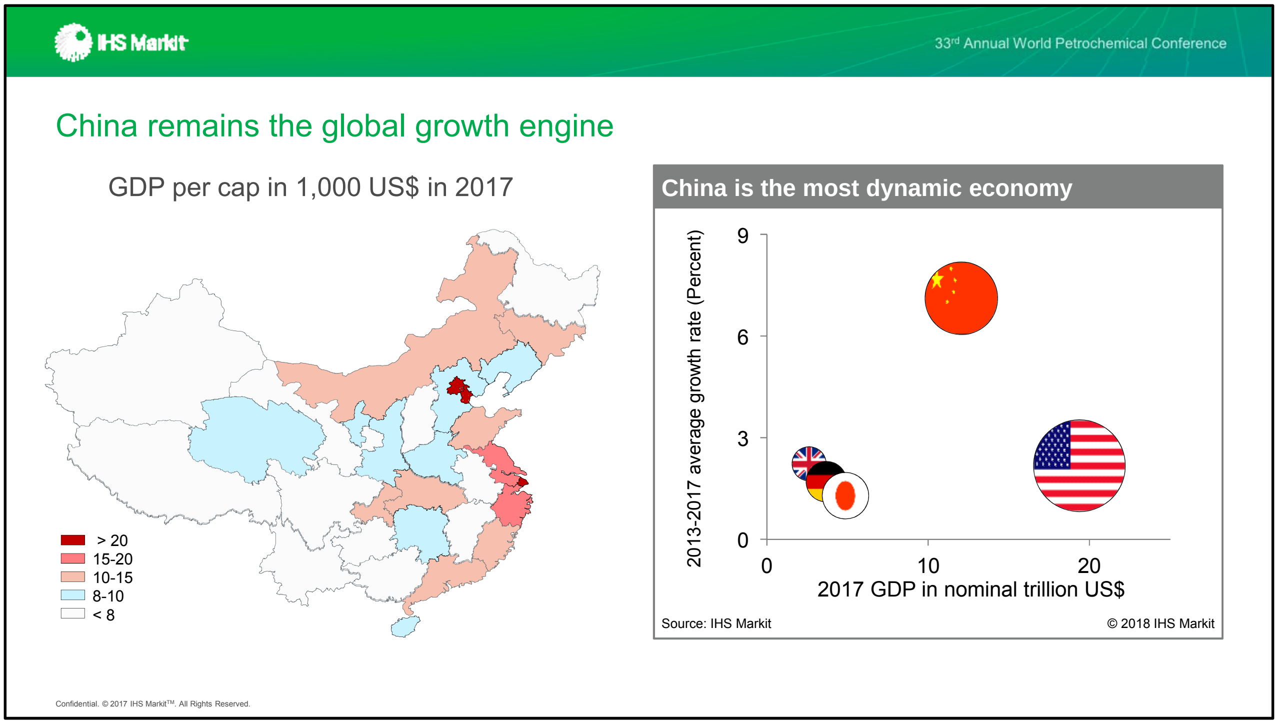
After nearly two-decades of fast growth, China has started steering its manufacturing industry from “raw growth’ model to “quality” growth model. Phasing out outdated capacity, upgrading value chain, tightening control on environment, encouraging energy efficiency and “Green” economy will be key themes for the next decade. Some sectors and many plants will be phased out, and replaced with newer, more efficient plants, and the products will be higher quality and higher value-added. This also will be the next growth arena. The presentation will focus changes happening in China and opportunities for oil and chemical companies.


2017
2010
1980

Agenda

- Macro economy
- Industry review
- What's next?



China has now become the world second largest economy. It also has the highest GDP growth rate among all major economies. However, the economic development and wealth distribution in China varies significantly from region to region. Major cities such as Beijing, Shanghai, Tianjin and coastal region are the most developed regions. These places are where most of economic development and manufacturing activities locate. Whereas the inland regions in the central and west provinces, economic development are far behind. Therefore, China still has vast area waiting to be developed.

Transforming to sustainable growth

FROM	TO
• Export driven	• Consumer driven
• Meeting basic living	• Satisfying quality living
• Investment driven	• Upgrading to high value chain
• Developing coastal region	• Developing interior region

After move than a decade-long rapid growth, China's economy is currently undergoing a major transformation. The country is trying to upgrade its industry from low-end product manufacturing to high value-added manufacturing and service industries.

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Despite progress, hurdles remain

Desire		Reality
Growing consumer demand	VS.	Industry capability
Quality living		Deteriorating environment
Innovation		Imitation
Fast economic growth		Slow political reform

China has already made some success in the transformation. However, there are still plenty of hurdles which it has to be overcome before China can fully unleash its next economic potential. Some hurdles can be overcome relatively easily, but some are much harder such promoting innovation and reforming political system.


Industry review: A successful evolution

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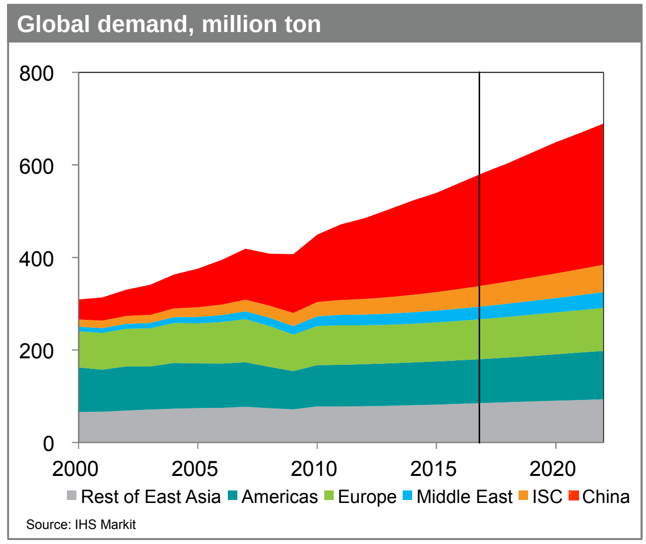
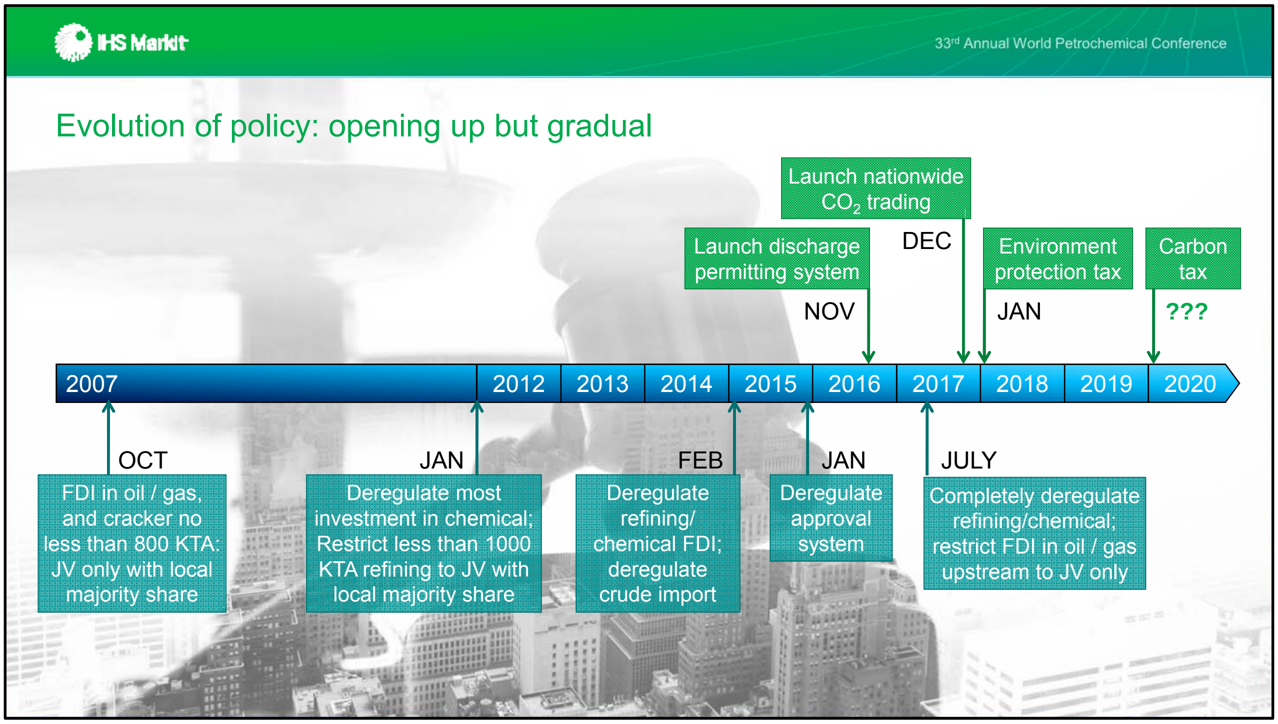
Strong growth continues

- Economic success propels demand growth for chemicals
- Key drivers:
  - World manufacturing floor
  - Infrastructure buildup
  - Growing domestic consumption



Product: Benzene/PTA/MEG/Methanol/PE/PP/PVC/SM/Caustic/Soda ash

Driven by strong economic growth, China’s demand for chemicals has grown by six folds over the past 17 years. Today, China is by far the largest market for nearly every chemical, and still has the highest growth rate among all major markets. This growth trend is expected to continue in the foreseeable future in the face of development in China’s interior regions and sustained competitiveness of its manufacturing industry.



Beside strong demand from downstream consumer product sector, the growth should also be attributed to deregulation of the industry. Over the past ten years, the government has lowered the hurdles for foreign and private companies going to refining and chemical industry, particularly within the past five years. Today, the constraint for foreign and private companies investing in refining is significantly lower and the constraint in chemical industry is nearly none.

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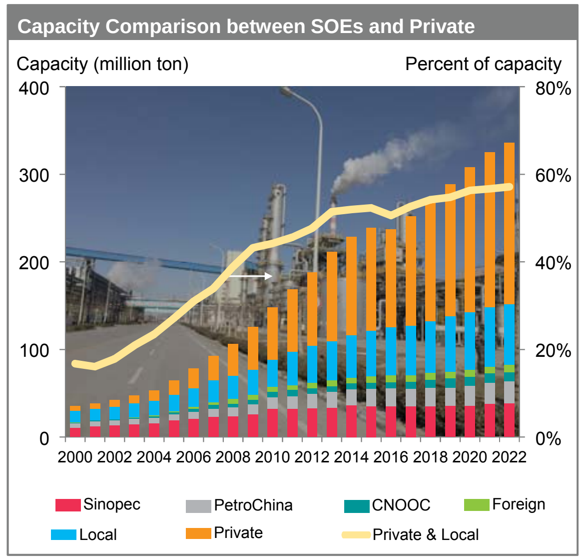
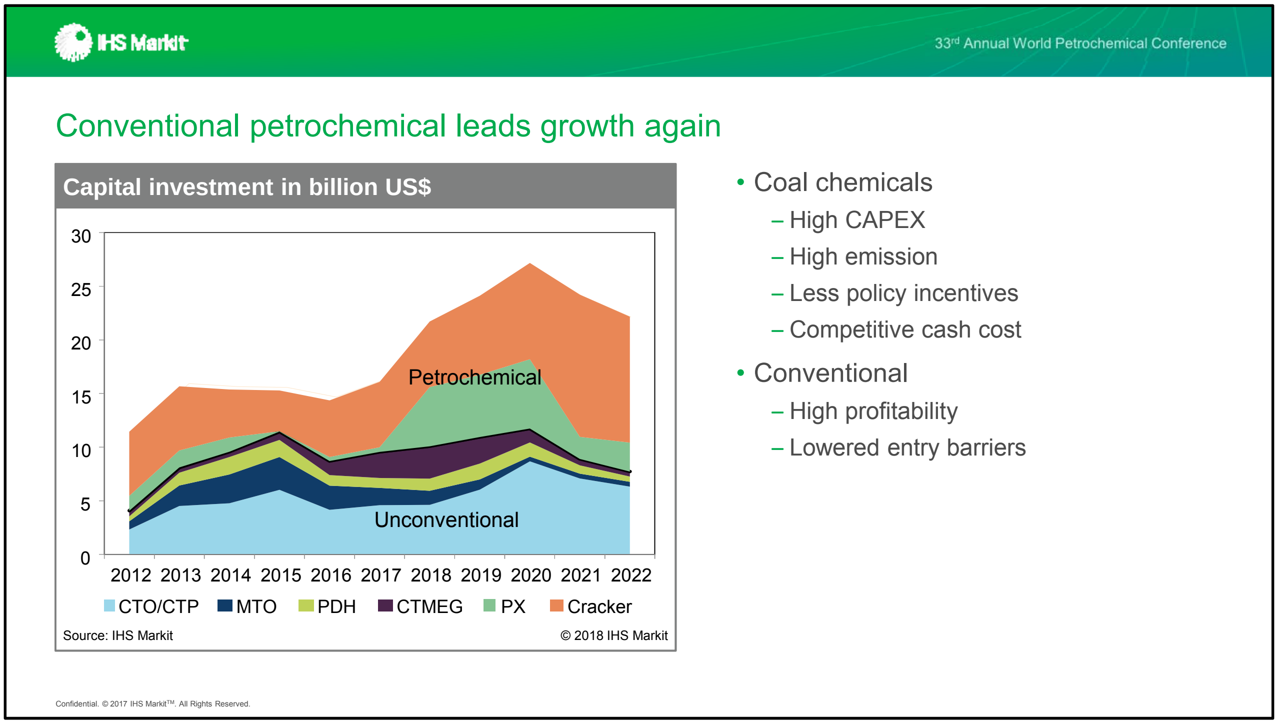
Private investment is leading the growth

- Policy change paves way for private investment
- Private companies are more nimble and efficient
- Strong entrepreneurship
- Grow big to survive: eat or be eaten

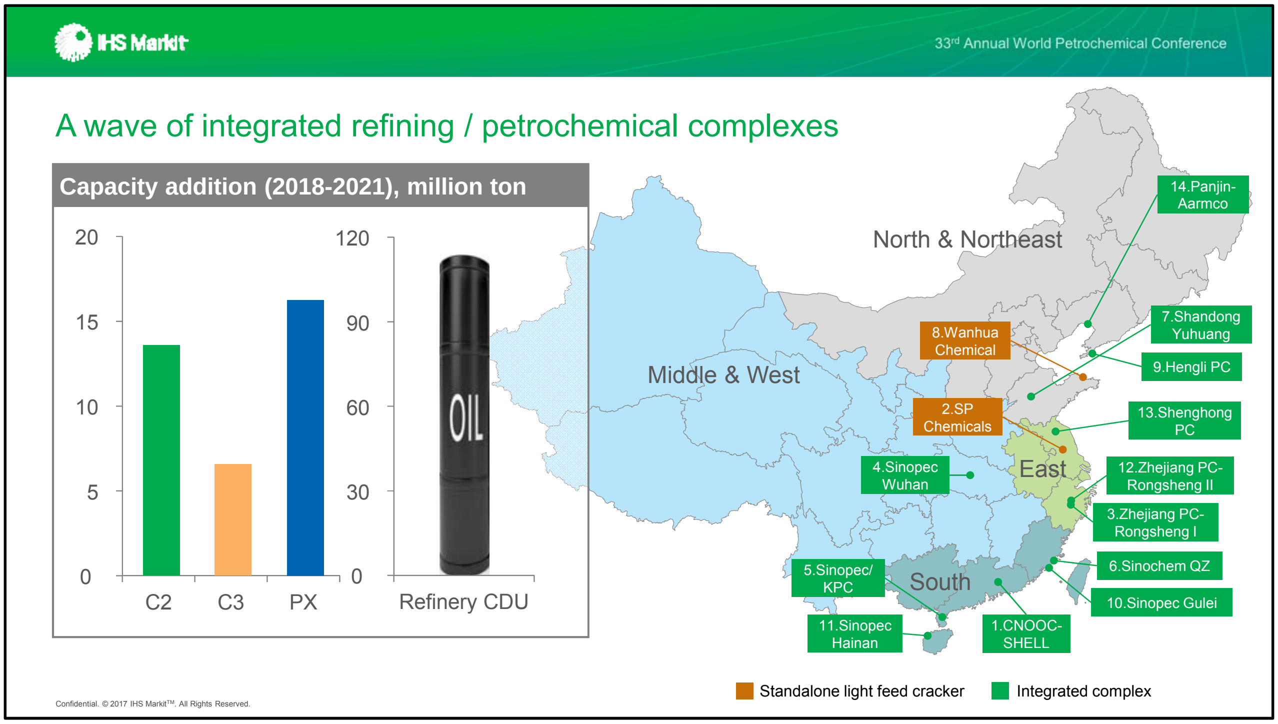


Product: olefins, PX, Bz, PTA, MEOH, MEG, Caustic, soda ash

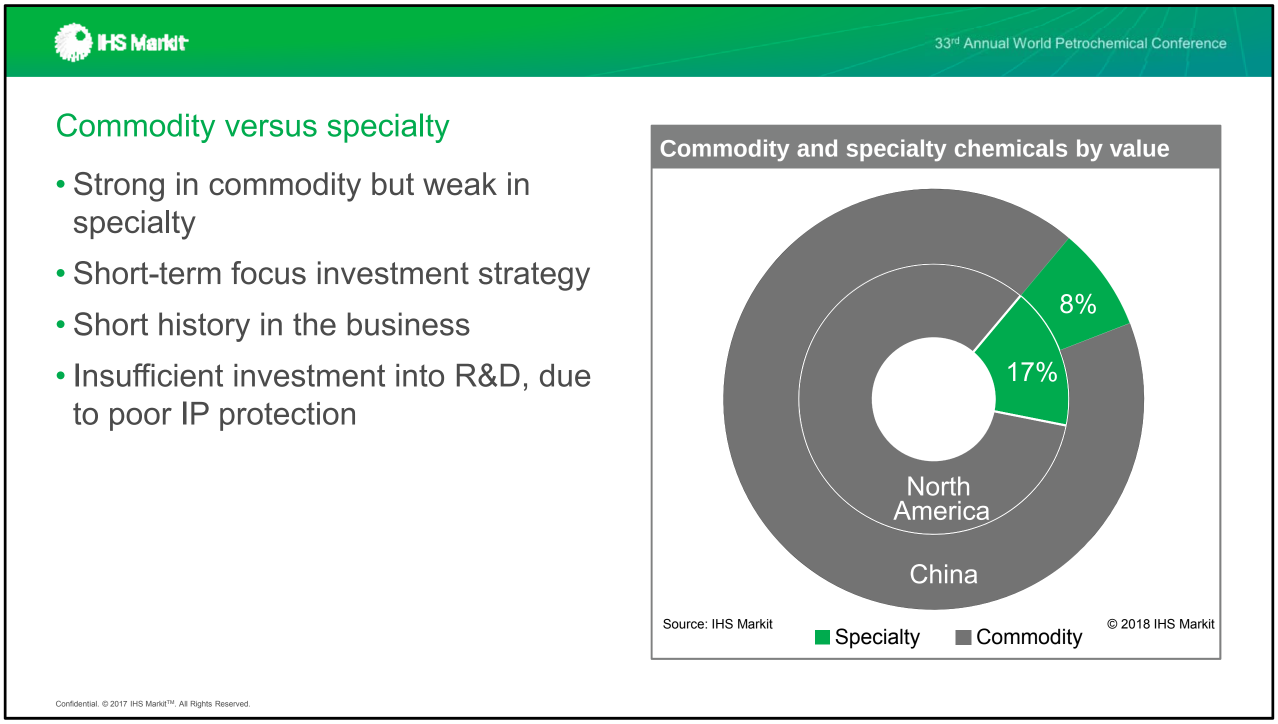
As a result of deregulation, China's private companies have taken over majority of growth share from the State-owned-enterprises. The surge in private ownership started in 2007 as a result of deregulation in the industry. In 2000, private companies accounted for only 17% of capacity; today, they account for 53%.



Over the past eight years, China has put a massive amount of investment in unconventional chemicals. These unconventional chemicals include coal chemicals, methanol to olefins and PDH. However, these unconventional chemicals have been depressed by low crude price since 2015. Over the past two years, the profitability for conventional petrochemical recovered and reached record high, and as a result, new investment into integrated refining/petrochemical complex has surged.



Currently, eight new petrochemical complexes are under construction, and another six are under planning. They are scheduled to be started up by 2021. Among them, eight are grass root integrated refining/olefin/aromatic complexes. Six of new complexes are invested by domestic private companies. This is a major change to China's both refining and petrochemical industries.



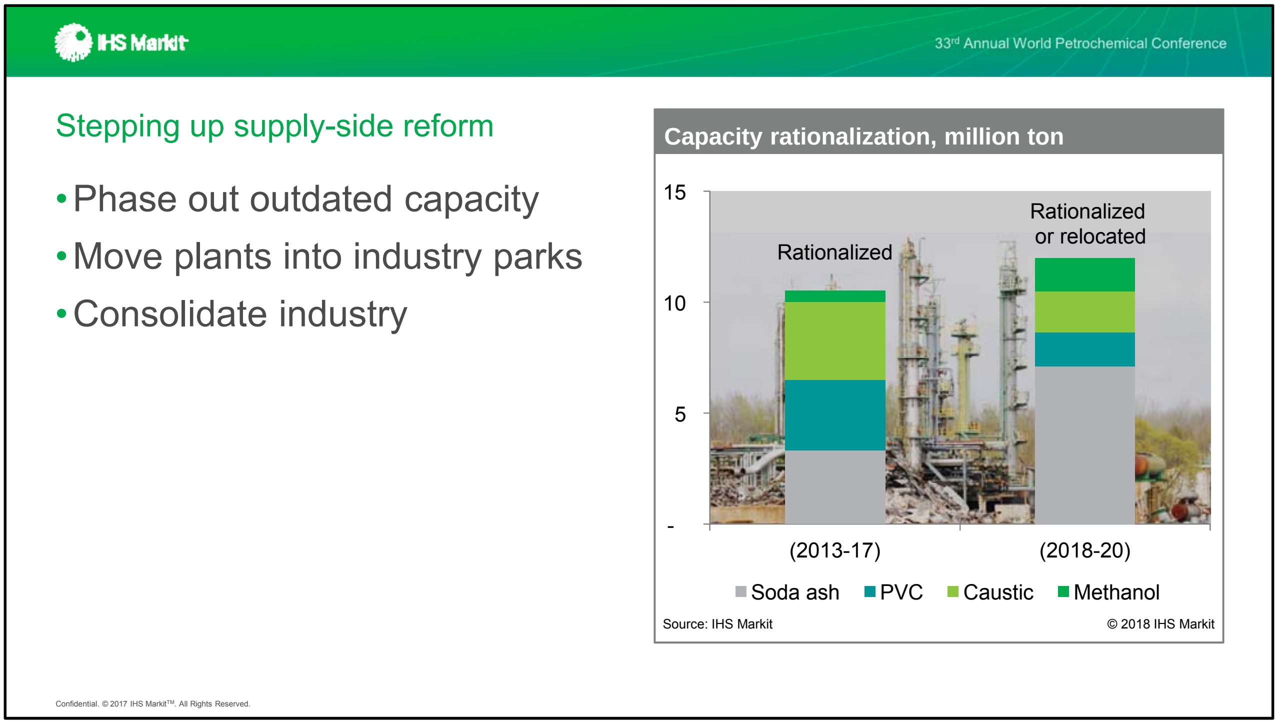
Despite of strong growth in commodity chemicals, the growth in higher-value added chemicals is comparably slow. In comparison to developed markets, specialty chemical accounts for much less the market share. This is mainly due to lack of investment into R&D and therefore lack of innovation. Although China's market is significantly larger than the US and Europe, its chemical industry is fairly young. Technology accumulation is much less than the developed countries. In the meantime, IP protection in China has been poor, and there has been little incentive for the companies to invest in R&D.


What next?
A revolution

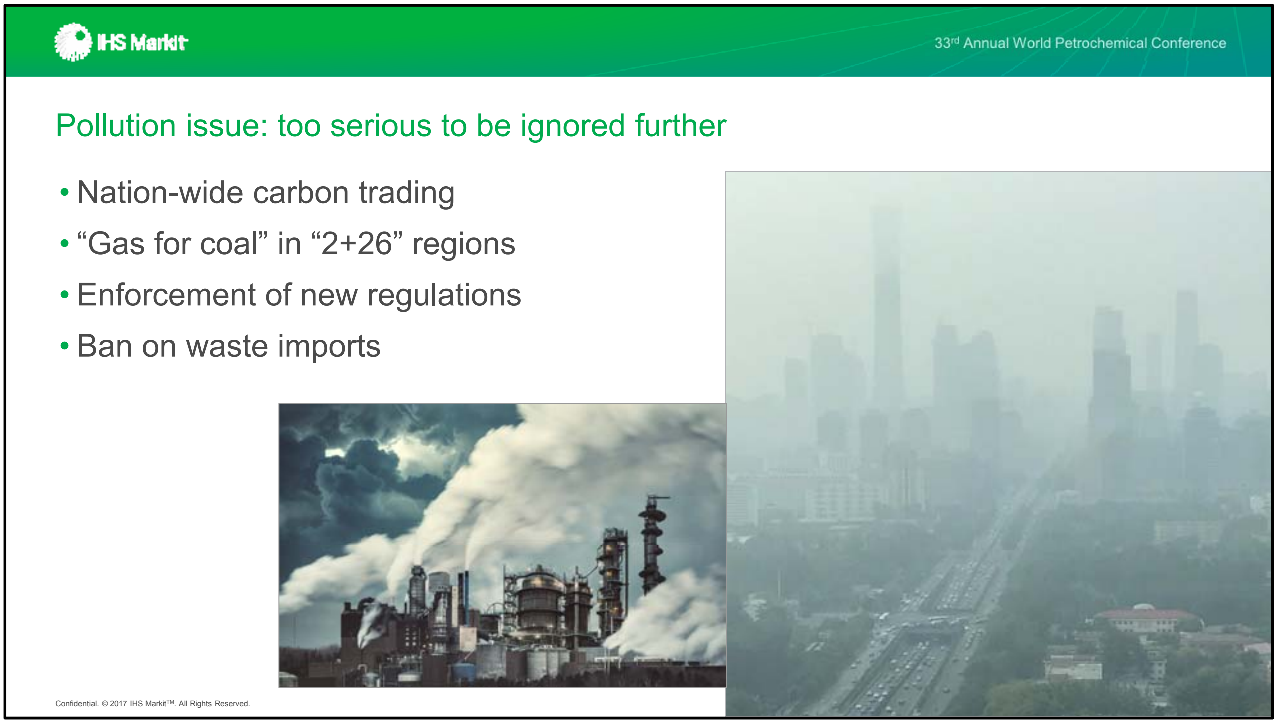
Change from volume growth to quality growth

- Focus on higher quality rather than higher volume
- Move up the value chains
- Increase technology content
- Enhance integration to increase competitiveness

Under Chinese government's 13th Five Plan, the country is trying to move away from labor intensive, energy intensive and high pollution sectors, and instead upgrade its industry into high quality and high-value-added manufacturing and services industries. The government also promote industry consolidation and integration to increase efficient and competitiveness.



As part of industry consolidation, in recent year the government has stepped up the effort in closing down outdated plants, moving refineries and chemical plants into dedicated industry parks, and also consolidating small companies into integrated/large size enterprises. This is to improve environmental and safety standard, increase energy efficiency and ultimately revolutionize the industry's global competitiveness.



After a nearly two decade long of fast economic growth, China has achieved huge success in growing its economy and generating wealth for its citizens. However, this success comes at a large cost – a rapidly deteriorating environment. Air pollution and water pollution are particularly serious in the economically developed North and East regions. In 2017, the government started aggressively tackling environmental issues. Multiple hard measures have been implemented. This round of enforcements applies nation-wide with a focus on the regions most affected by pollution.

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2017: toughest action ever on pollution

- Reduce energy consumption
- Enforce strict waste discharge permit
- Implement tight control on VOC emissions
- Close down uncompetitive capacity
- Scrutinize environmental impact and energy-saving for new project approval
- Key target sectors:
  - aluminum
  - coal coking, steel
  - construction materials
  - carbide, and ammonia

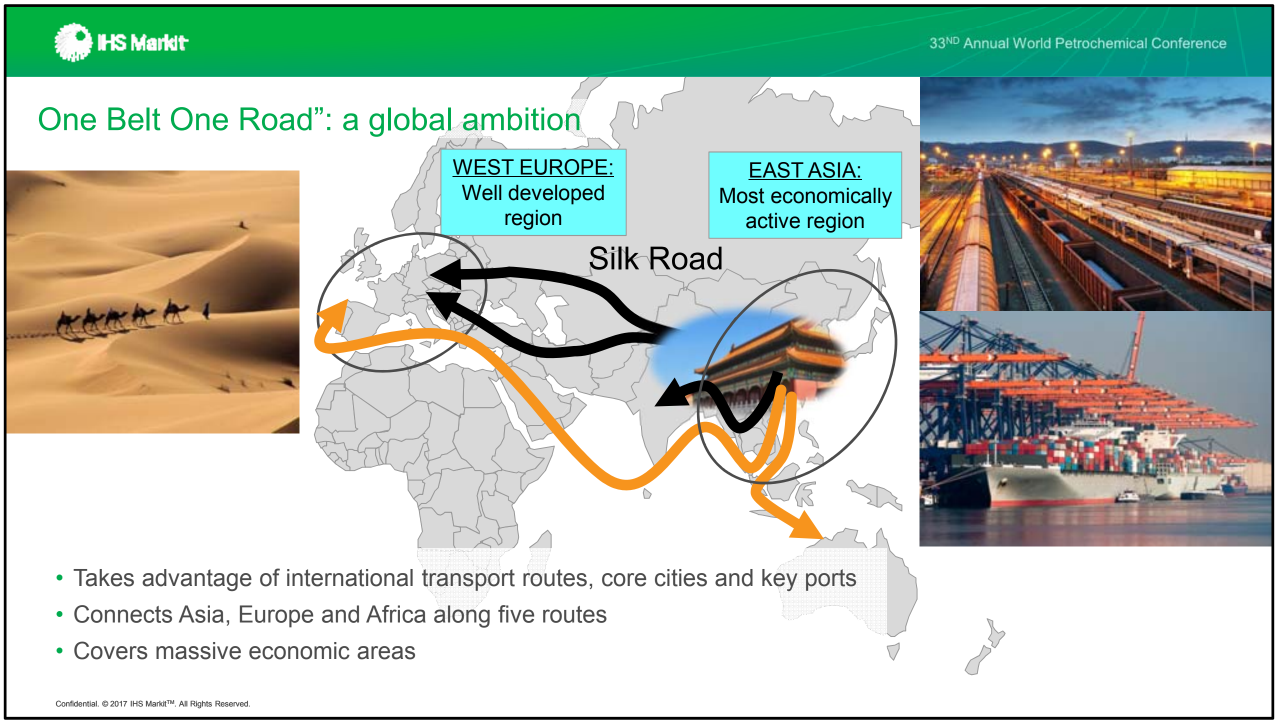
North China - China's most heavily polluted area is the main target. "2017 environment protection act in Beijing, Tianjin, Hebei and surrounding area" ('2+26 Act') issued by the Ministry of Environment Protection and NDRC in March. The key element for this Act includes: reducing energy consumption; enforcing strict waste discharge permit; implementing tougher control on volatile organic compounds (VOC) emissions; eliminating redundant capacity; tightly scrutinizing environmental impact, and energy-saving evaluations for any new project approval; strict pollution control targeting aluminum, coal coking, steel, construction materials, carbide, and ammonia sectors.

Result: mostly positive

- Led to short-term shock on energy sector
- Disrupted certain supply chains
- Speed up supply-side reform
- Winner - large and established companies; Loser - small and medium companies
- Concern: unpredictability of policy and way of implementation
- Strict environmental control will last

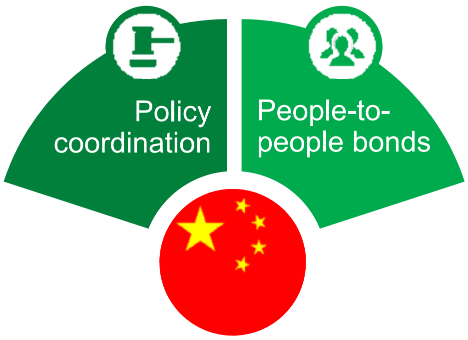
This round of policy enforcements have a profound impact on energy sector. Coal has been the dominant fuel for power and heating. As a means to combat air pollution, the central government requests local governments and manufacturers to reduce the consumption of coal and replace with natural gas and/or electricity. As such, there was a huge shortage of gas in North China and cause disruption on the industry. The impact on large companies and small companies are very different. Most large companies, especially large state-owned enterprises, are equipped with modern plants and implement tighter waste and emissions control. These companies were little impacted and instead benefited from tighter supply, higher product prices, and thus enjoyed higher margins. However, small and medium-sized companies, which are generally privately owned and have less systematic control on waste discharge and emissions, were forced to shut down.

China used to be the largest industrial scrap import country and the world scrap processing floor. As part of environmental protection measure, China bans any import of unprocessed industrial scrap and waste materials from September 1, 2017. This ban created a short-term supply shock in plastic supply as previous recycled materials has to be replaced with virgin materials.



Another development is China's "One-belt-one-road" initiative. This initiative is to connect East Asia and Europe, two largest economic regions with various land and sea routes.

It is far beyond regional expansion



- Expand China's soft power
- Move products efficiently within common trade beltways
- Access to huge consumer base
- Access to vast natural resources
- Capture business opportunity in infrastructure buildup
- Strengthen RMB role as a global currency

China sees this "One-belt-one-road' as a way to extend its economic momentum within and beyond China. The objectives can be summarized as: 1. expanding China political influence and its soft power along the Belt and Road regions; 2. capturing huge business opportunity for Chinese companies from the infrastructure buildup along the economic beltways; 3. the common trade beltways allows moving products efficiently across the regions, and enables Chinese companies to access to huge consumer base; and also allows Chinese companies to access to vast natural resources along the beltways; 4. strengthening RMB role as a global common currency; challenging US dollar's dominance in global trade.


Just need a “revolution”!

Strategic implications

- China is reaching a turning point for revolutionizing its refining and chemical industry
- Macro policy change is expediting the change
- To stay in the lead, companies need to upgrade to higher-end and "greener" products
- China's global ambition creates a new growth space

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