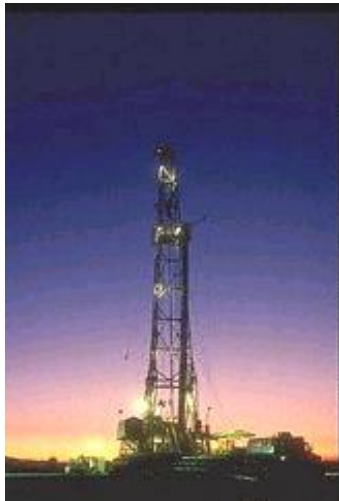


“China: Can Rapid Growth Be Sustained?”

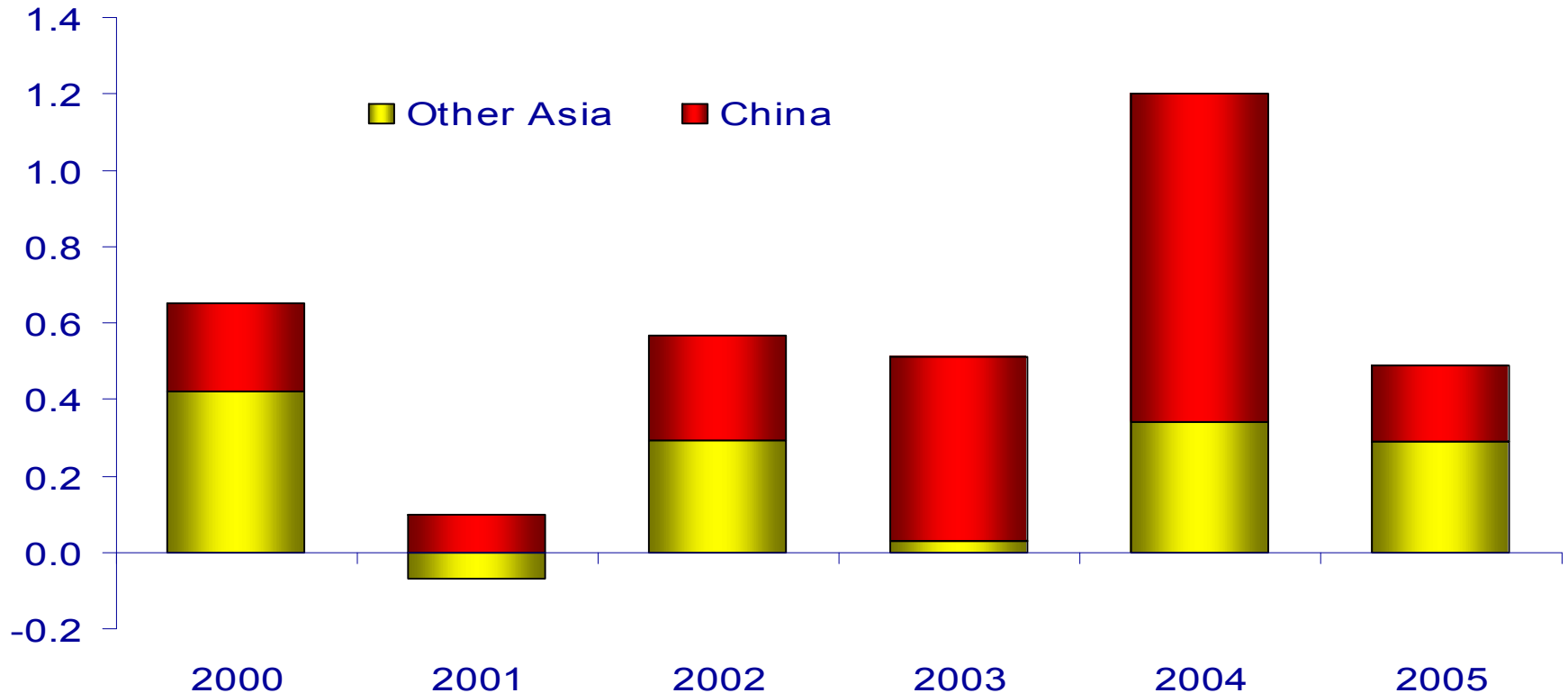
A new report by Purvin & Gertz.



This material was used by Purvin & Gertz, Inc. during an oral presentation;
it is not a complete record of the discussion.

China has been the key oil demand driver in Asia contributing to high oil prices.

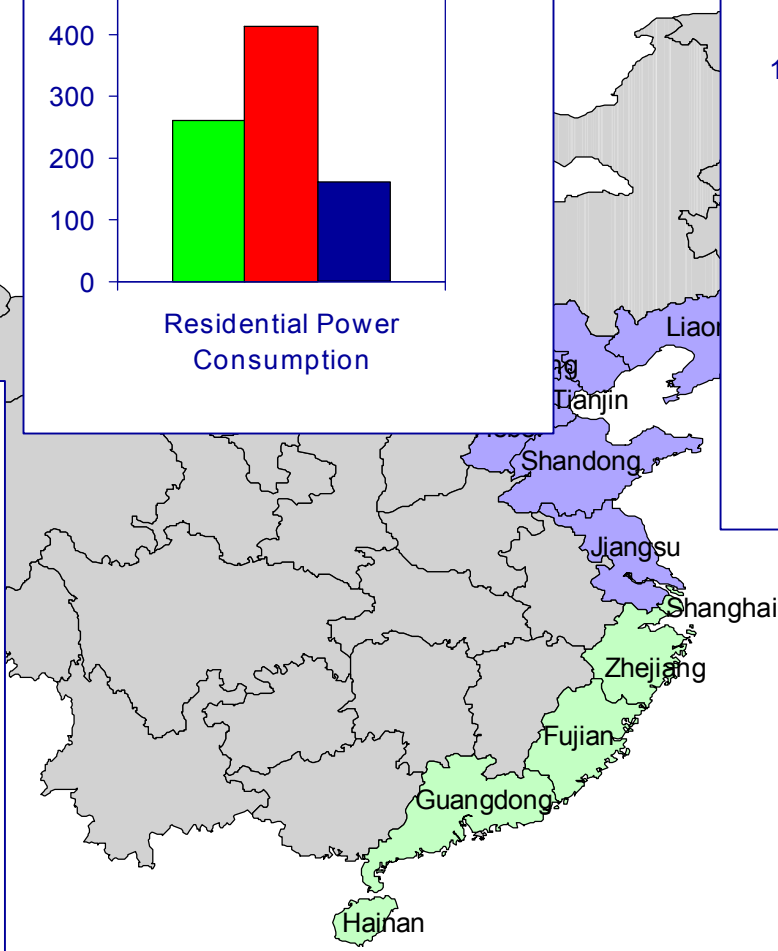
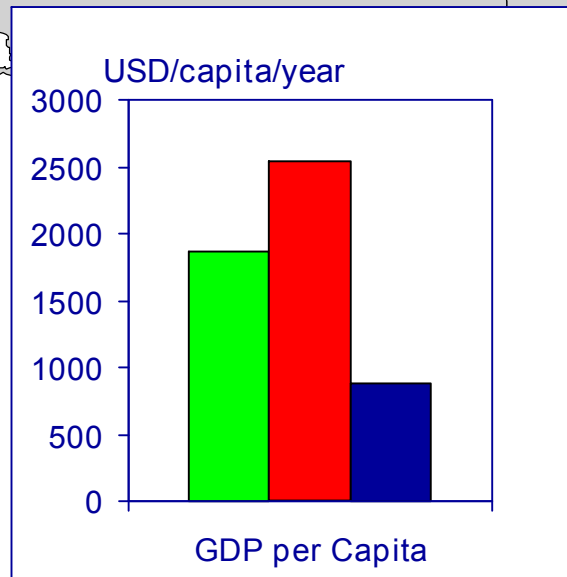
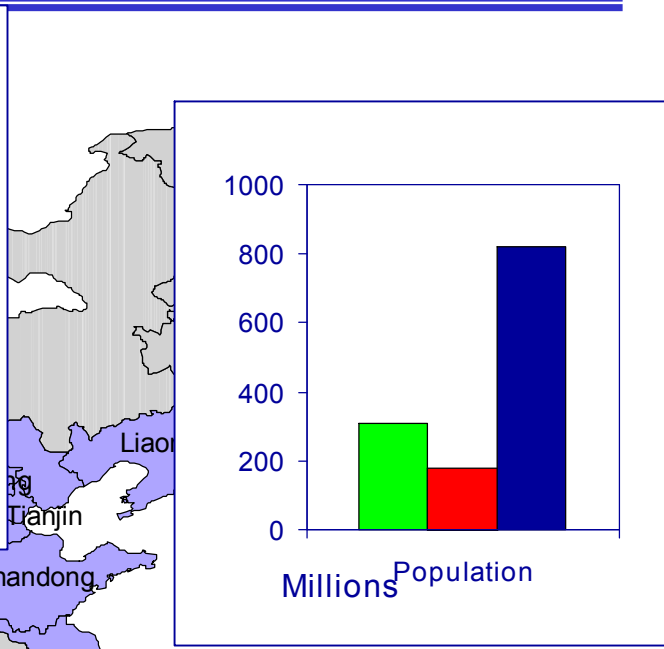
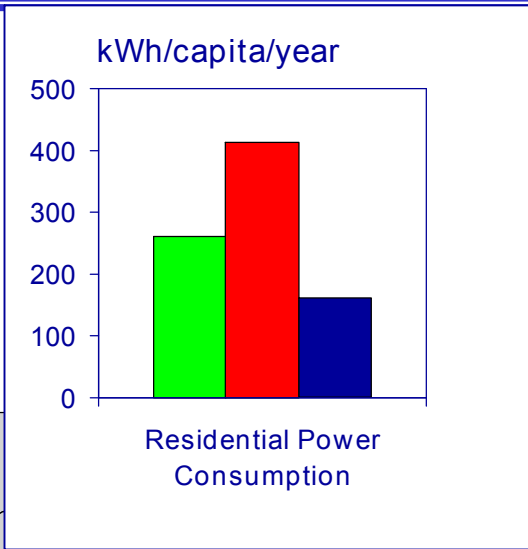
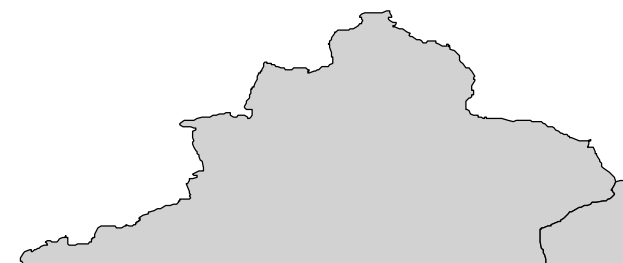
Year-to-Year Change
(Million Barrels per Day)



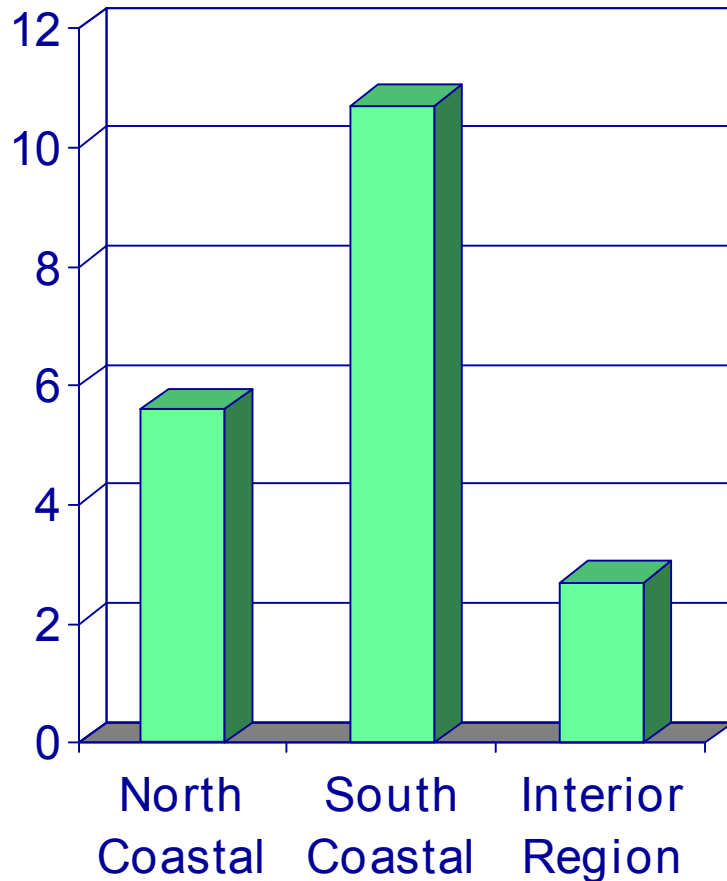
Can China's petroleum growth be sustained ?
What will be needed? What are the important
uncertainties?

China's regional diversity requires regional analysis of energy and petroleum situations.

- North Coastal
- South Coastal
- Interior



How does the disparity of demand and growth affect the petroleum outlook?



- Any of these regions on its own would be a petroleum market on the scale of India.
- Relatively advanced economic areas grow faster and demand more fuel.
- Regional analysis answers the questions and places demand forecast on a firmer footing.
- Regional analysis answers the question of where in China the fuel will be required.

Fundamental approach used for demand forecast

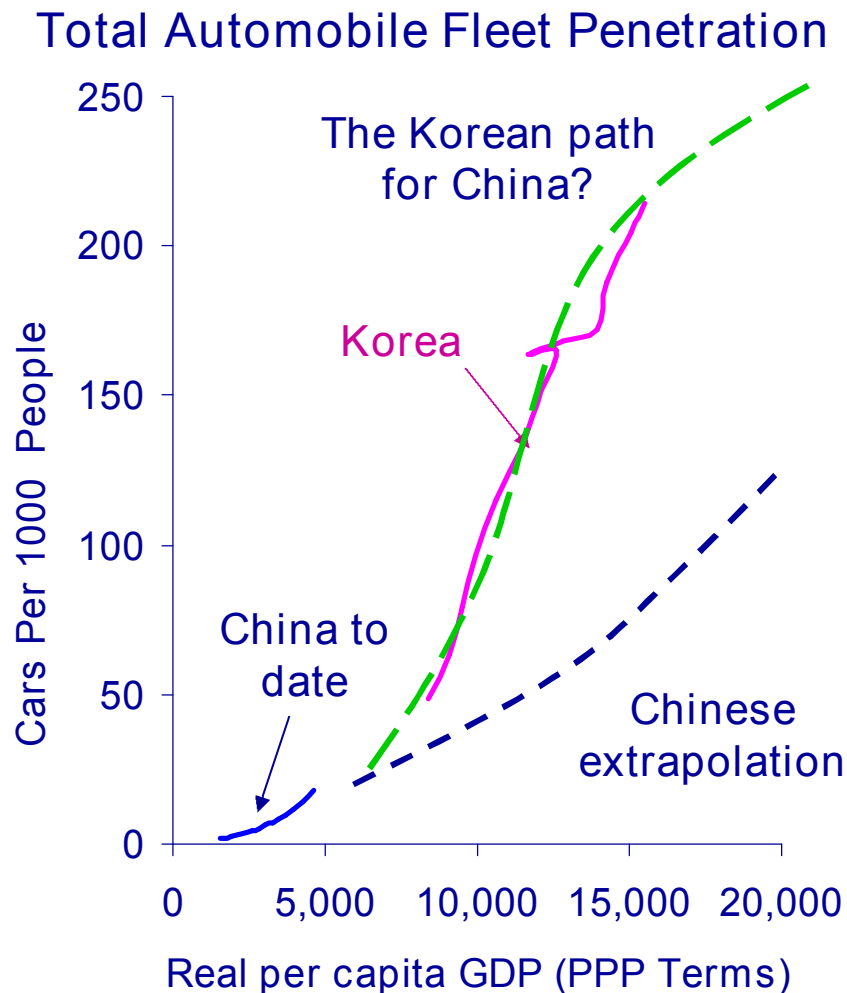
- Fundamental approach used to forecast the energy and petroleum demand for China.
 - Analysis done on province/regional level to capture disparate economic development
 - Petroleum demand forecasted by major petroleum products on a sector-by-sector basis considering sector growth and inter-fuel competition
- Special care for fast-growing transport fuels with little substitution opportunity away from petroleum
 - Number of vehicles in fleet – Population and penetration by region
 - Fuel efficiency – current fleet, projected auto sales by type and international available engine technology
 - Distance traveled – current and projected use of private automobiles

China has a very low vehicle penetration compared to other countries

Private Motor Vehicle Penetration 2004 (Vehicles per Thousand Population)		
Developed Economy	US	812
	UK	515
	Germany	586
	Japan	599
Moderate Economy	Korea	293
	Malaysia	240
Emerging Economy	China	16
	India	17
	Thailand	127
	Indonesia	29

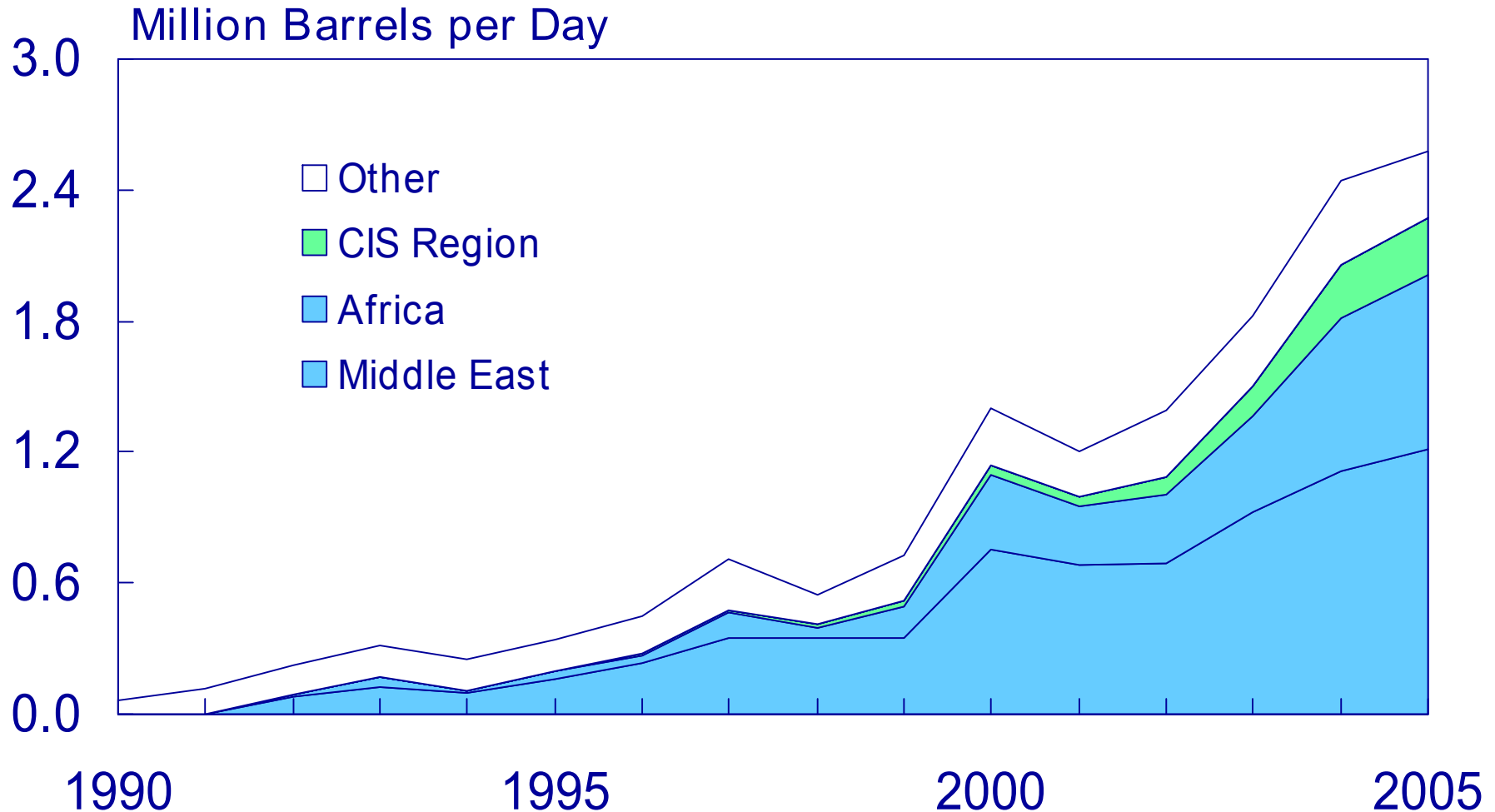
Can China approach vehicle penetration levels of moderate nations? What does that imply about fuel demand?

How will the fast growing transportation sector unfold?



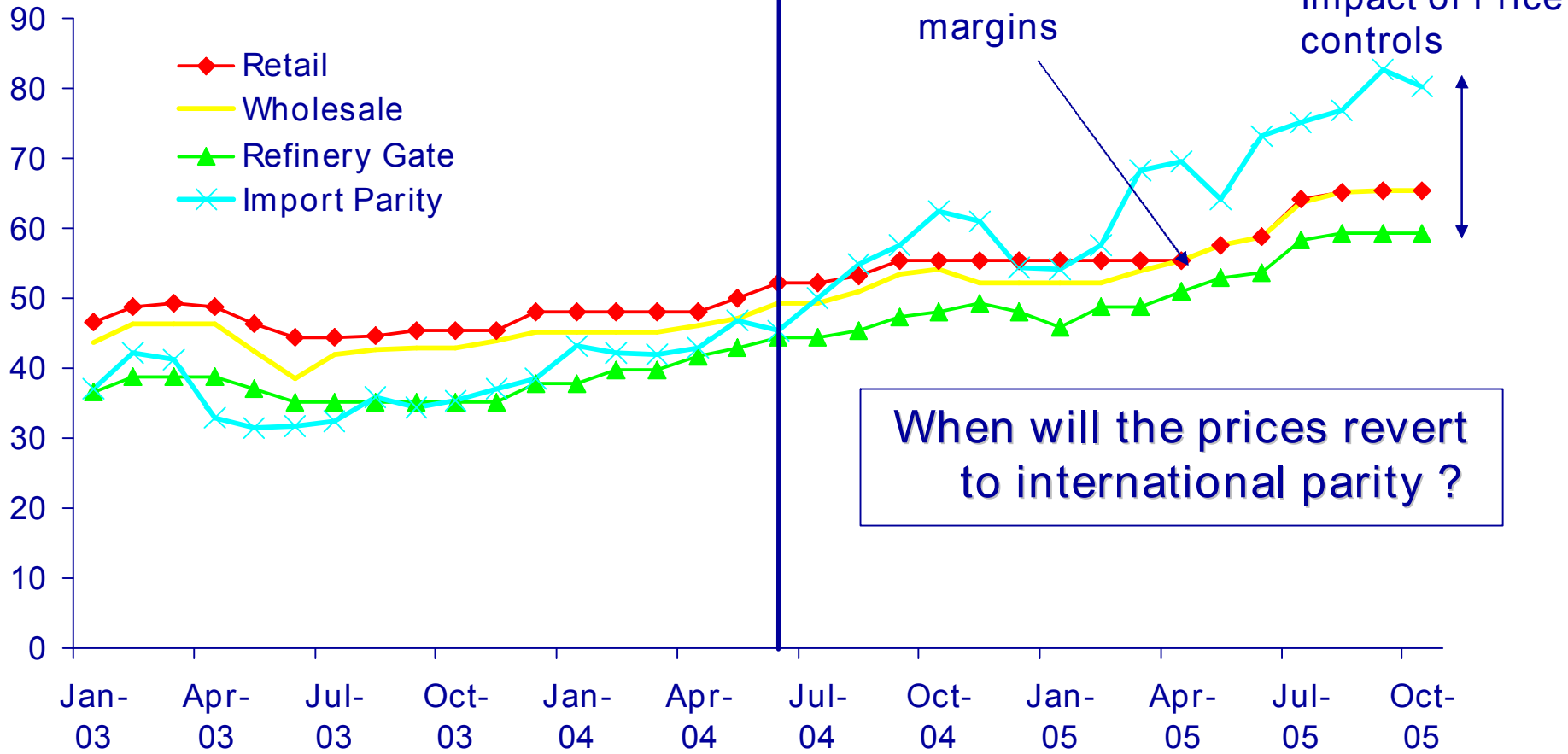
- Korea could represent a reasonable future path for China auto penetration
- While China as a whole may not grow as quickly as Korea, there is a reasonable case that it could
- What path will China follow? How will this affect demand?

What is governing the types and sources of Chinese crude imports?



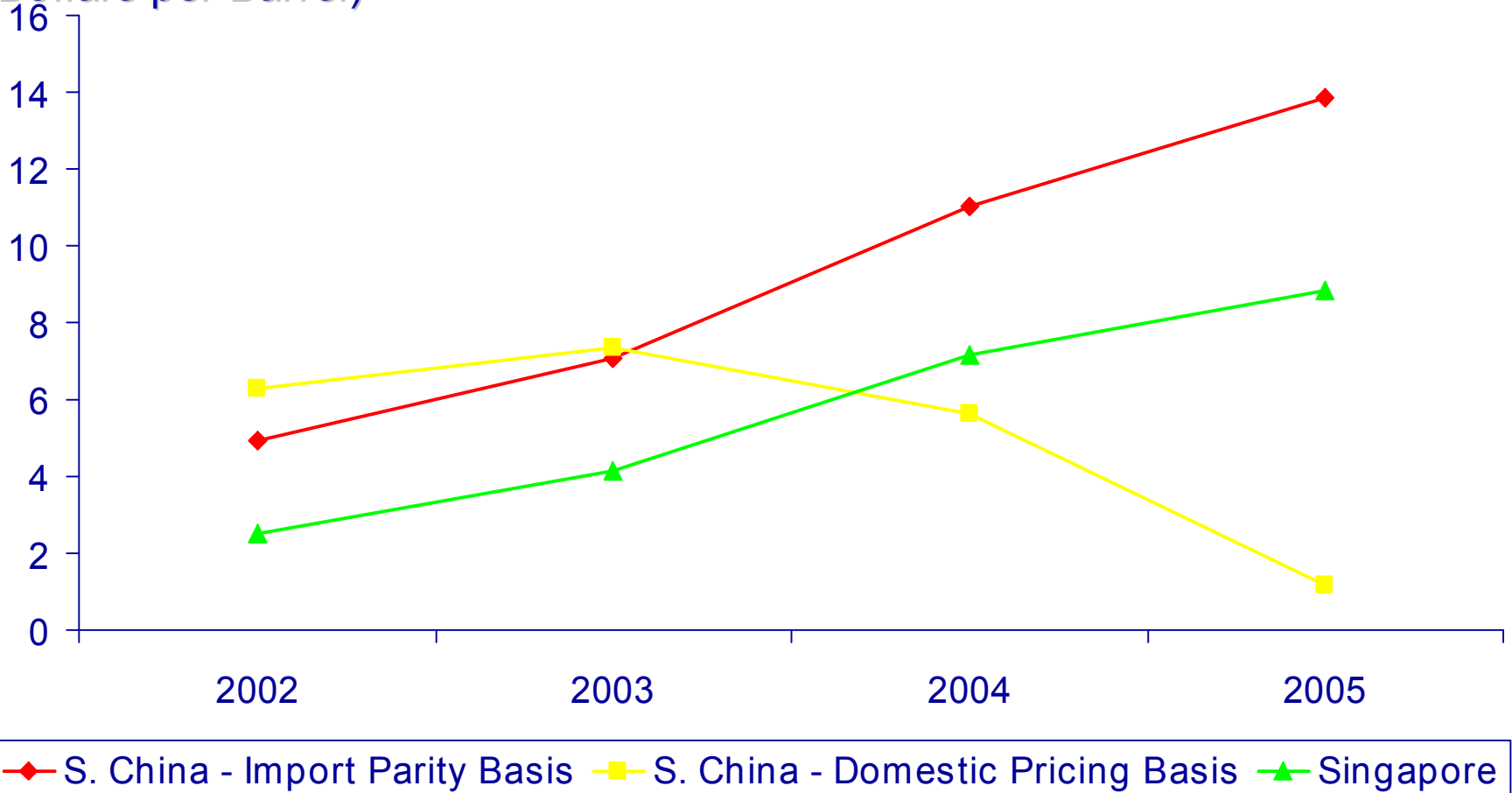
Petroleum growth sensitive to government price control

Diesel Price in South China,
Dollars per Barrel



Will the refinery investment decisions be slowed down due to domestic pricing controls ?

Hydrocracking Gross Margin
(Dollars per Barrel)



Purvin & Gertz has undertaken a thorough analysis to unlock the Chinese puzzle.

- Energy and economic review explains the role of gas, coal and other energy sources.
- Demand analysis has been undertaken regionally and by sub-sector to establish the best picture of future demand.
- Scenarios and key uncertainties have been probed to establish the range of outcomes in each sector.
- China's regulatory problems and industry structure are reviewed to determine how government action will influence future actions by Chinese companies and foreign investors.

Contents of the Reports

- Eight sections, which are
 - Introduction
 - Summary and Conclusions
 - Economy and Energy Overview
 - Refined Products
 - Refining Industry
 - Crude Oil Production and Trade
 - Regulatory Matters
 - Crude Oil, Product Prices and Refining Margins

- Published Jan 2006



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