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The End of Coal-Fired Growth in China

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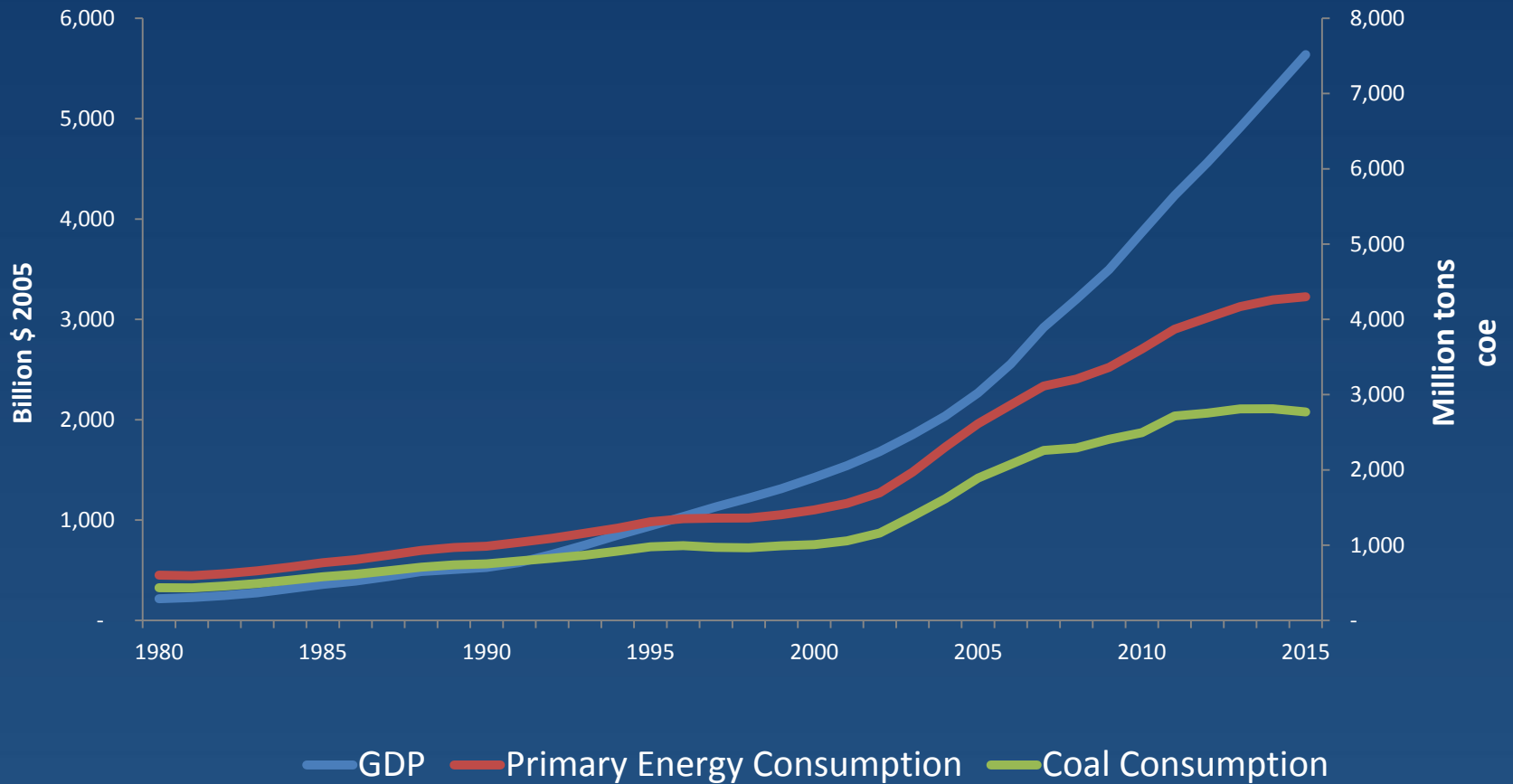


Coal-Fired Growth in China

- Coal had fueled the economic miracle in China over the past 35 years
 - ❖ Construction and manufacturing industry have been increased by about 13% annually from 1991-2010
- Coal consumption grew 6.5 times during 1980-2015
 - ❖ Consumed 4.24 billion tons in 2013, or 50% of global demand
- Coal accounts for around 64.4% of primary energy consumption in China



GDP and Energy Consumption in China (1980-2015)





The Turing Point:

- The “New Normal”
 - ❖ decline of construction and manufacturing industry
 - ❖ the period of slower economic growth is here to stay
- Air pollution and climate concerns
 - ❖ air pollution control policies
 - ❖ regional cap on coal
 - ❖ adaptation of the Paris Agreement
- Investment and technology improvement in clean energy



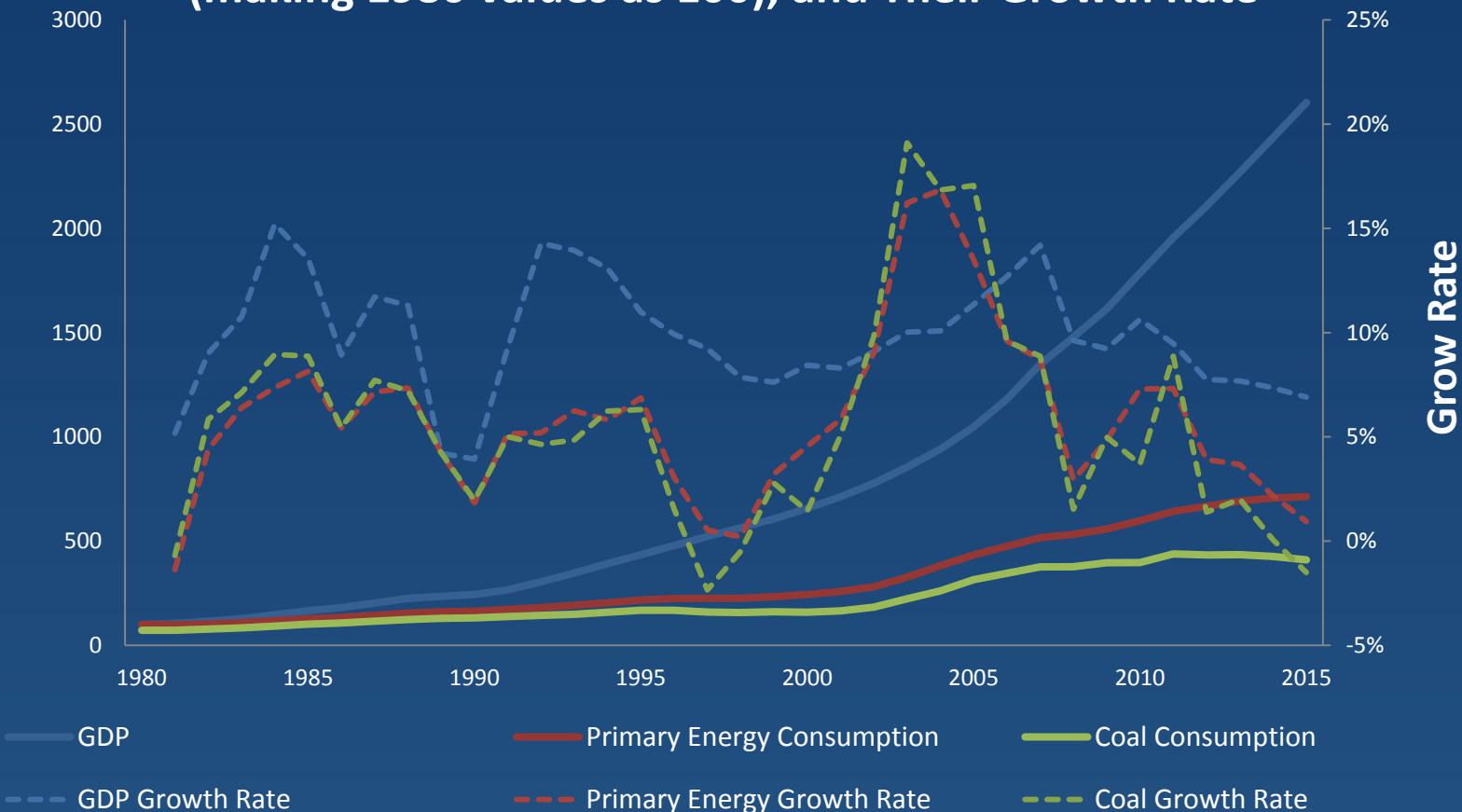
The Divergence of Coal Consumption and Economic Growth

- Change in economic structure
- Change in energy structure
 - ❖ the share of coal has been steadily decreasing in the overall energy mix, from 73% in 1980s to 64% in 2015
- Improvement of energy intensity and coal intensity
 - ❖ the growth of coal use has been much slower than growth of the economy
 - ❖ 2kg/\$GDP in 1980 vs. 0.49kg/\$GDP in 2015
- Coal consumption decreased by 2.9% in 2014 and by 3.6% in 2015



China's Economy, Primary Energy and Coal Consumption (making 1980 values as 100), and Their Growth Rate

GDP and Energy Consumption in China
(1980-2015, standardized)





Transition to Post-Coal-Fired Growth

- Both the United States and the United Kingdom have shifted away from coal-fired growth
 - ❖ over a long timeframe
 - ❖ shifted their energy mix from coal to oil-and-gas as they developed
- China has followed the broad trend, but its transition has been more sudden and proactive
 - ❖ emphasis on renewable energy
 - ❖ a shorter phase of oil-and-gas during the substitution



Coal Consumption and Economic Development

