The End of Coal-Fired Growth in China

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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)

- GDP
- Primary Energy Consumption
- Coal Consumption
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
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

Coal Consumption per Capita (kg) vs. GDP per Capita ($2005)

- CH
- US
- UK

Key:
- 2013
- 1956
- 2000

Graph shows the relationship between coal consumption per capita and GDP per capita over time for CH, US, and UK.