Making Sense of Prices for Oil & Natural Gas

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Colorado Business Economic Outlook - 2016

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… the short story:

- technology (i.e. fracking)
- policy (i.e. environmental)
- demand (i.e. China)
- pricing strategy (i.e. OPEC)

Natural Gas - recent history

- How did we get here?

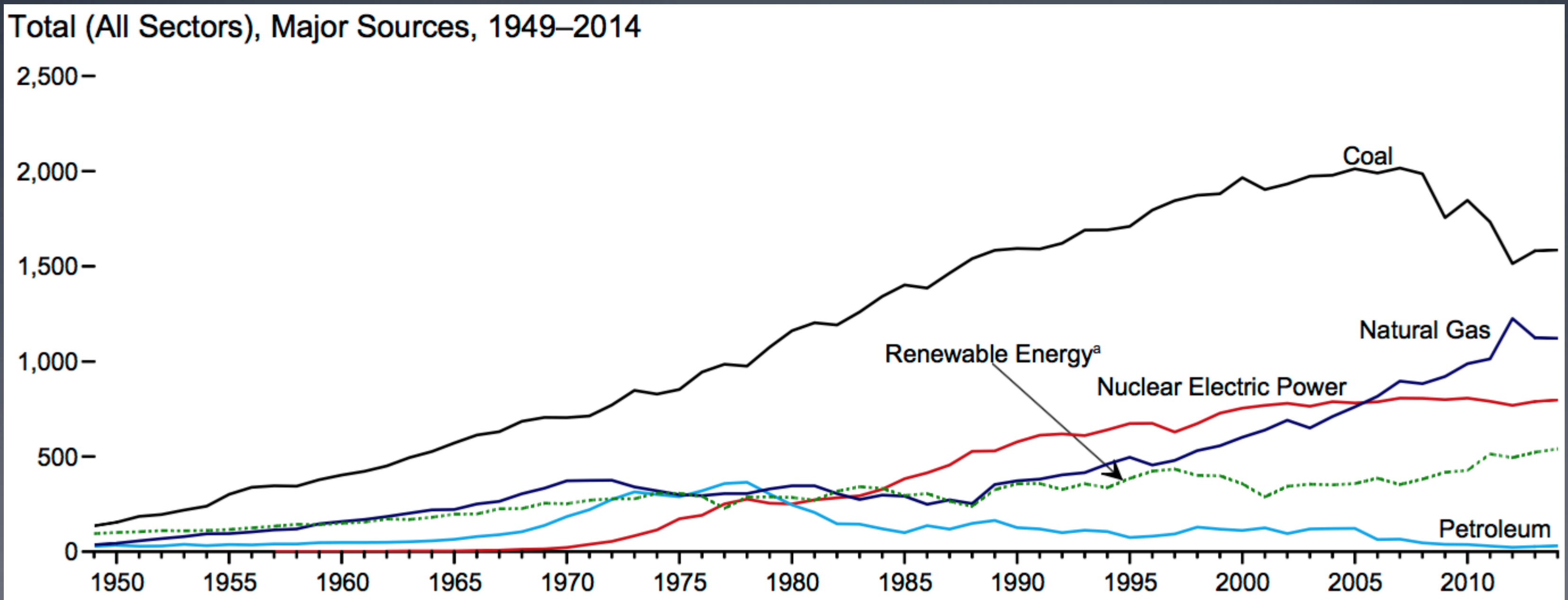
Natural Gas – recent history

natural gas drilling rig and Fort Worth, Texas skyline

David Kent / ZUMA

Natural Gas – recent history

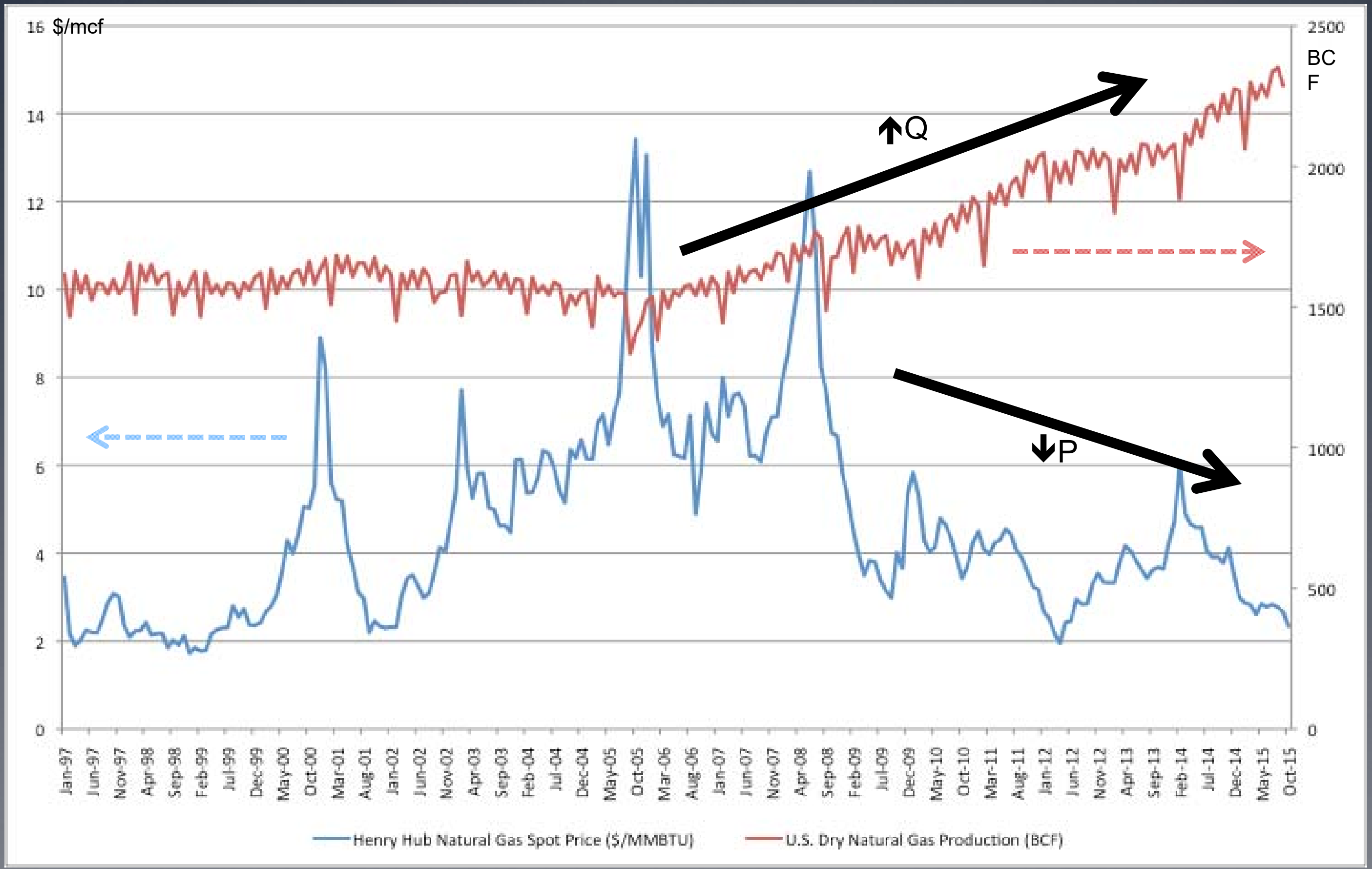
US Electricity Net Generation (billions of kilowatt hours)



US EIA, Monthly Energy Review, November 2015, figure 7.2

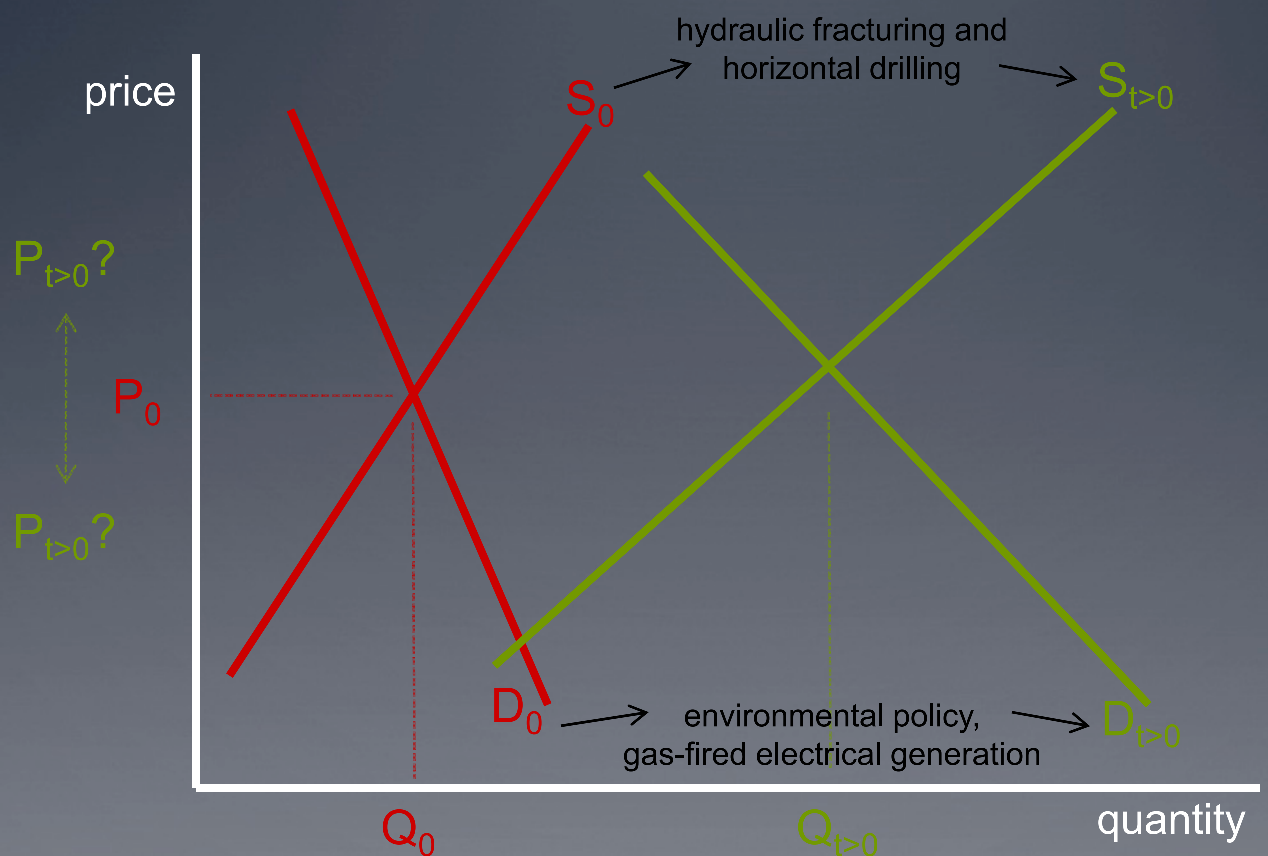
Natural Gas – recent history

US Natural Gas Prices and US Production



US EIA, data downloaded December 4, 2015

Natural Gas – recent history



Oil- recent history

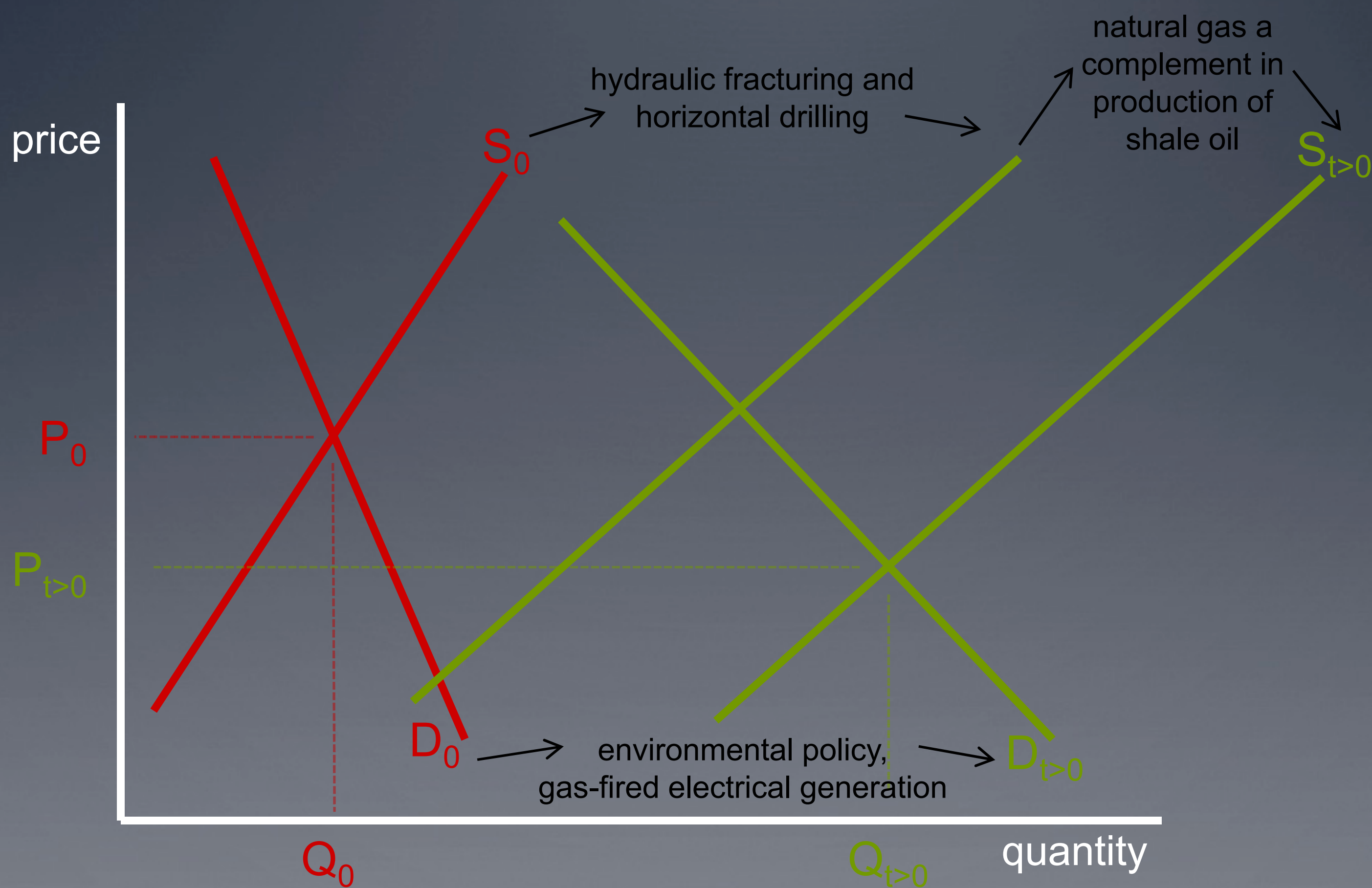
- How did we get here?

Oil – recent history

Crude Oil Prices

US EIA, data downloaded December 6, 2015

Natural Gas – recent history



Oil – recent history

Crude Oil Prices and US Production

US EIA, data downloaded December 6, 2015

Oil – recent history

Crude Oil Prices and US Production

US EIA, data downloaded December 6, 2015

Looking forward:

- making sense of natural gas requires making sense of oil
- making sense of oil requires making sense of OPEC

Looking forward - oil:

- Q: ‘the end of OPEC’? A: not so fast
  - Why would OPEC cut revenue by $60 per bbl on 30MMBOPD for a gain of 2MMBOPD at $40 per bbl?
  - Why would Saudis cut revenue by $60 per bbl on 10MMBOPD for a gain of 2MMBOPD at $40 per bbl?
- Potential gains from current price cut:
  - Political = leverage against Iran?
  - Commercial = re-stimulate Chinese demand?
    = discourage non-OPEC production
    - shale oil?
    - conventional, large-scale developments?

Looking forward - oil:

- Q: 'the end of OPEC'? A: not so fast
  - Why would OPEC cut revenue by $60 per bbl on 30MMBOPD for a gain of 2MMBOPD at $40 per bbl? A: they wouldn't.
  - Why would Saudis cut revenue by $60 per bbl on 10MMBOPD for a gain of 2MMBOPD at $40 per bbl? A: they wouldn't.
- Potential gains from current price cut:
  - Political = leverage against Iran? A: will take through 2016 Q2.
  - Commercial = re-stimulate Chinese demand? A: long-term objective.
    = discourage non-OPEC production
    - shale oil? A: No. Too elastic.
    - conventional, large-scale developments? A: Yes. Trying to discourage high-fixed cost developments.

Looking forward - oil:

- Q: 'the end of OPEC'? A: not so fast
- Potential gains from current price cut =>
  - Political = leverage against Iran – Saudi Oil Minister indicates Iranian impact on global markets will be better understood in <u>summer 2016</u>.
  - Commercial = re-stimulate Chinese demand = long-term goal.
    = discourage non-OPEC production
    - shale oil is too elastic to be true target of price cut
    - conventional, large-scale developments
      - will produce at Poil > operating cost ≈ \$25/bbl
      - but <u>investment can be discouraged ≤ \$70, \$80/bbl</u>

Outlook:

- Oil:
  - OPEC will curtail production to raise prices as they confirm
    - Iran is not a threat
    - Large, fixed-cost investments are discouraged fr non-OPEC producers (Canadian Oil Sands? Alaska? Brazilian PreSal? Mexico? Russia?)

  => Prices to < $70, $80/bbl (large-projects break-even)
  mid-2016 (post Iran-market-impact uncertainty)

- Natural Gas:
  - High storage and mild winter to keep short-term prices low
  - Rebound in oil prices in mid 2016 => rebound in (elastic) shale oil production => return of associated gas production
    => medium-term prices remain low