The Next Financial Crisis

Gail Tverberg - Ecologistas en Acción - June 26, 2017
Our economy is a self-organized system that seems to grow by itself

- It is built up over time, by adding new businesses, governments, customers, and laws
- It adds new goods and services, and eliminates old ones

Source: http://www.rinusroelofs.nl/structure/davinci-sticks/gallery/gallery-01.html
An economy can collapse, if conditions are not right

- Many economies have collapsed in the past

Based on analysis of researchers Peter Turchin and Surgey Nefedov in “Secular Cycles.”
Example: The Soviet Union collapsed in 1991, leaving its member countries.

- This is the energy consumption of the countries, after collapse.
The Soviet Union was an oil exporter that collapsed when oil prices were low.
Venezuela is an oil exporting country with problems today – when prices are again low.

2016: Total energy consumed decreased by 5.2%.

Venezuela: Consumption

Data: BP Statistical Review 2016    Graphic: mazamascience.com
Oil importing nations can have problems when oil prices are too high.
Spain is another oil importing country with problems when oil prices are too high.
Countries with rapidly growing (cheap) coal consumption tend to do well

2016: Total energy consumed increased by 5.2%

India: Consumption

Data: BP Statistical Review 2016  Graphic: mazamascience.com
China’s energy consumption was growing rapidly, but now is nearly flat – Problem!!!
Shrinking coal consumption is bringing down world growth in energy consumption.

World: Consumption

- **hydro**
- **gas**
- **oil**
- **coal**
- **nuclear**

Data: BP Statistical Review 2016   Graphic: mazamascience.com
Historically, world economic growth has followed growth in energy consumption.
Growing energy consumption enables economic growth

- Allows energy products to increasingly leverage human labor
  - One gallon of gasoline equivalent to 500 hours of human labor
  - Thus growing energy consumption allows productivity growth

- World growth in energy consumption per capita is now slightly negative
  - Leads to lack of productivity growth
  - Leads to inability to repay debt with interest
  - Economies of scale occur less often
    - Instead, fixed costs become a problem as businesses shrink
World growth in energy consumption per capita is now slightly negative.
Growing wage disparity becomes a problem

- It takes energy to produce jobs
  - Not enough energy leads to few jobs that pay well

- People with low skills compete in world labor market
  - Wages fall too low to afford a home and family

- Result is political problems
  - Radical parties
  - No two parties can agree
  - Government finds it difficult to collect enough taxes
    - Problem is workers with low wages who cannot afford to pay taxes
No oil price today is satisfactory for both oil producers and oil consumers.
We have multiple problems that can lead to collapse

- $45 per barrel oil is way too low for oil producers
  - Will lead to collapse of exporting countries

- $100+ per barrel oil is needed by producers
  - Way too high for oil importers like Greece and Spain

- China’s slowing energy consumption will make it difficult to repay debt with interest
  - Spain, Italy, Greece have the same problem
  - Can lead to huge debt defaults
  - Failing banks
Timing of collapse is likely to be soon

- There are many things that go wrong
  - Radical political parties arise; gain power
  - If oil prices stay low, oil exporters collapse
  - If oil prices rise, oil importing countries collapse
  - Higher-level organizations, such as European Union, subject to collapse
  - Debt defaults increase
    - Energy *growth* is what permits economic *growth*

- All of these problems come from inadequate growth in energy consumption

- Timing could be as soon as next few months
Affordability is a big part of our energy problem

- Too many people have low paying jobs, or no job at all
  - Wage disparity problem again

- These people cannot afford to buy energy-using goods such as cars and homes

- There is plenty of oil, coal, natural gas and other energy products, *if consumers could afford* the high prices that producers require
  - Affordability is the key issue
  - Neither economists nor peak oil people understand the issues!
Likely symptoms of collapse

- Governments that cannot agree because political parties cannot agree
  - Eventually, cannot collect enough taxes
  - Top political layers lose power
    - Top layers may disappear, similar to Soviet Union collapse

- Debt that cannot be repaid with interest
  - Failing banks
  - Failing pension plans
  - Eventually, governments give up on bailing out banks, pension plans, or fail themselves

- Falling international trade
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