

# Earthquake and Economic Growth

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# Short-run consequences of a natural disaster

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- ▶ Well known
- ▶ Disaster destroys → Low productive capacity → Low output
- ▶ But leads to recovery → higher growth rate (lower capital per worker)
- ▶ Difference between advanced economies and developing economies
- ▶ Property damage high and casualty low in advanced economies
- ▶ Growth stronger in advanced economies because  $K/L$  drops a lot
- ▶ Good news for Japan

# Long-run consequences of a natural disaster

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- ▶ Less well known
- ▶ Does the economy come back to the original long-term growth path?
- ▶ Seems to depend on what are destroyed
- ▶ If some economic or social institutions that supported growth are destroyed, the long-term growth is hurt
- ▶ If some institutions that hindered growth are destroyed, the long-term growth will be higher
- ▶ How about Japan?

# Japan stagnated before the earthquake/ tsunami

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- ▶ Anil Kashyap and I identify several impediments to long-term growth in Japan (NIRA report “Why Did Japan Stop Growing?” (<http://www.nira.or.jp/english>))
- ▶ Important impediment, for example, is the zombie problem
- ▶ Subsidies to weak firms make it unattractive for stronger firms to displace them
- ▶ Workers and other resources are retained at weak firms
- ▶ Productivity suffers
- ▶ Empirical support in our work with Ricardo Caballero (2008, AER)

# Optimistic possibility

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- ▶ Earthquake/tsunami destroy zombies and free up the human capital trapped in zombie firms
- ▶ Make it more attractive and easier for new enterprises to enter the market and the non-zombies to expand
- ▶ Higher productivity growth

# Pessimistic possibility

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- ▶ Protect all who suffered, zombies or non-zombies
- ▶ Make the zombie problem even more serious
- ▶ This happened after the earthquake of 1923 (Earthquake Bills)
- ▶ If this happens again, Japan continues to stagnate

# Overall good news from economics

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- ▶ Output initially declines but recover soon (physical capital is easier to replenish than human capital)
- ▶ Long-run growth rate can even be higher than that before the earthquake/tsunami
- ▶ But, the long-run growth rate can drop as well
- ▶ Depends on policy choice