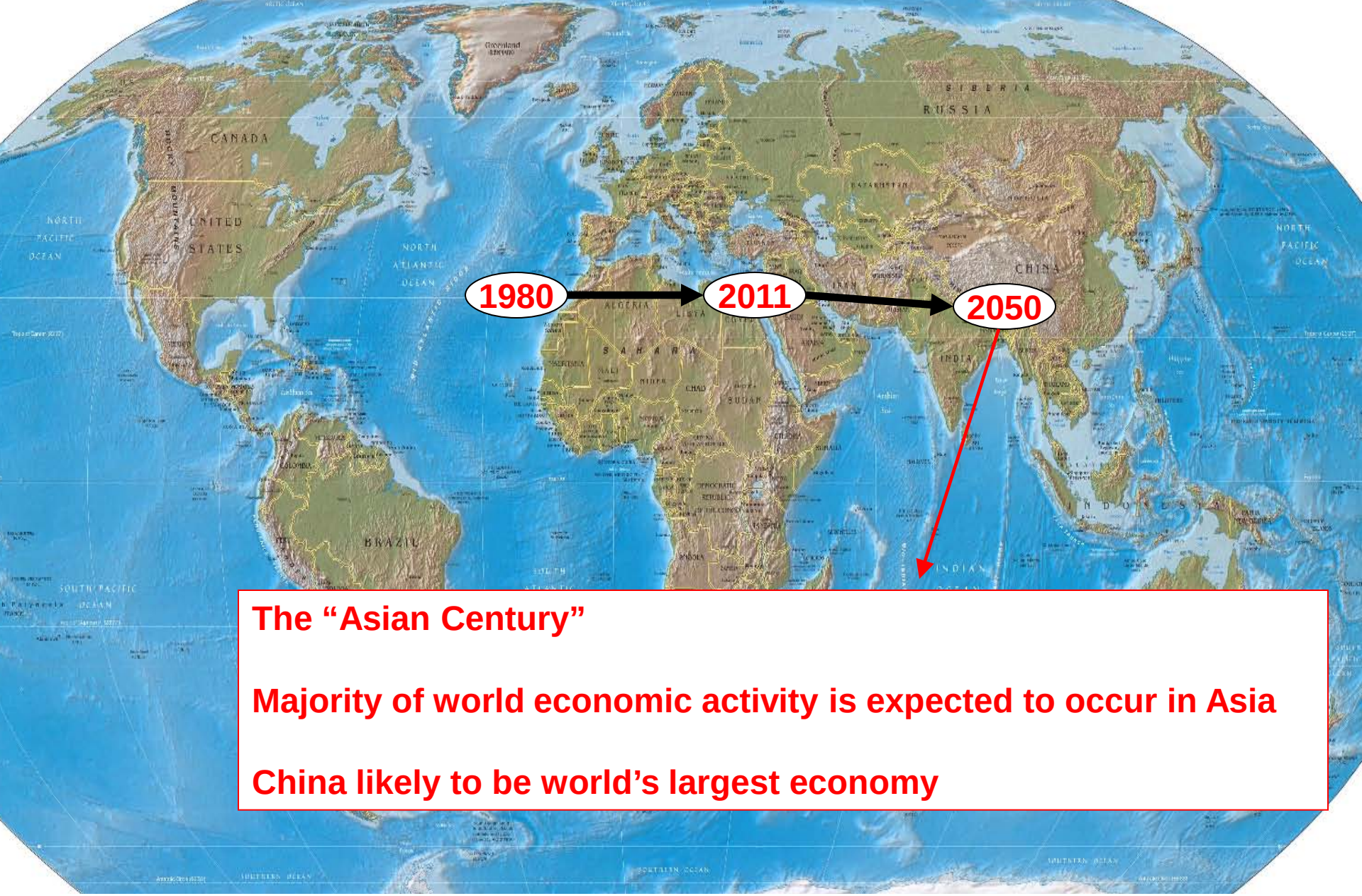
Australian National University

Changing energy demand

Paul Burke
Arndt-Corden Department of Economics
Crawford School of Economics and Government

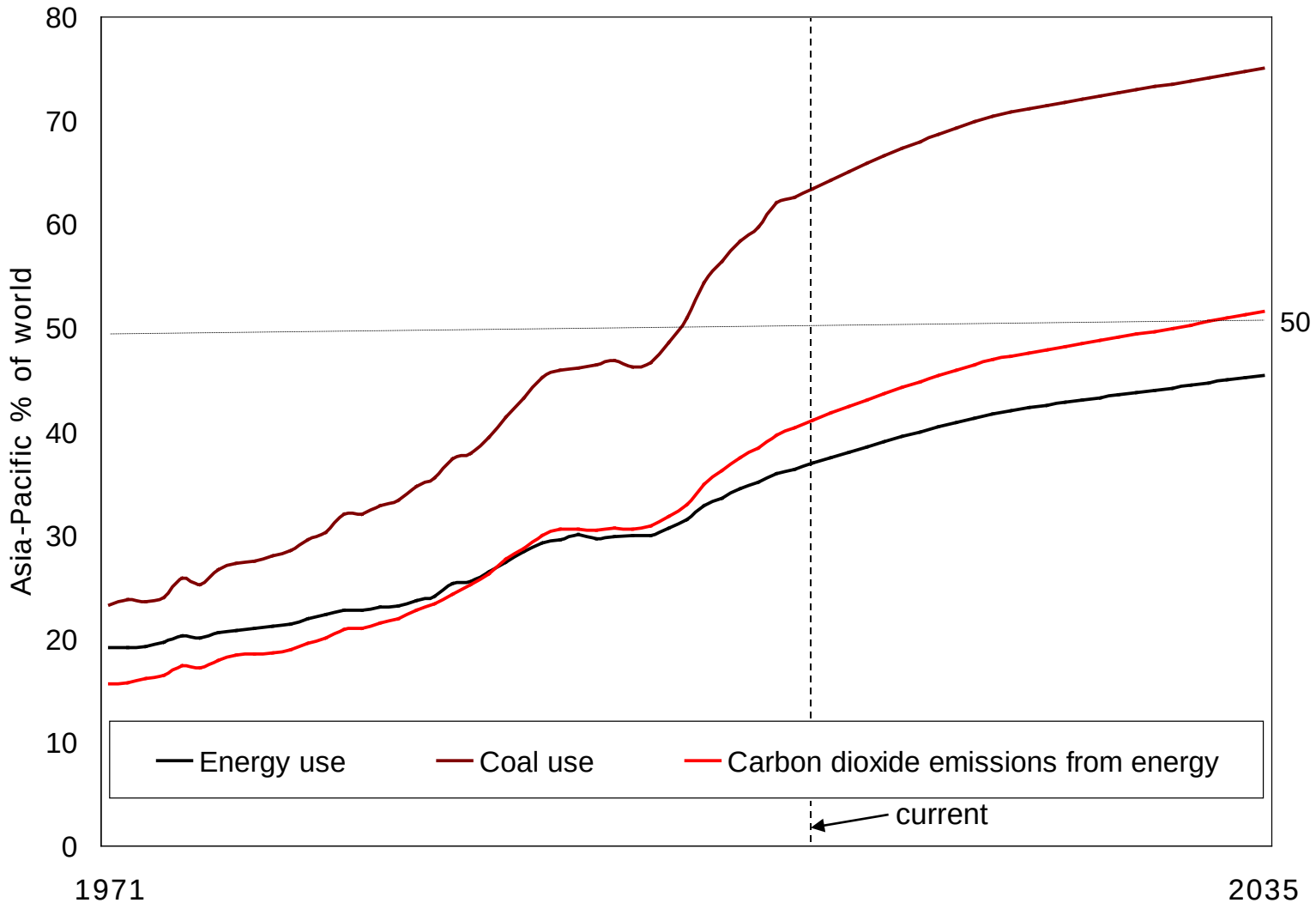


The global economy’s shifting centre of gravity

Source: Quah (2010)

Rising Asia

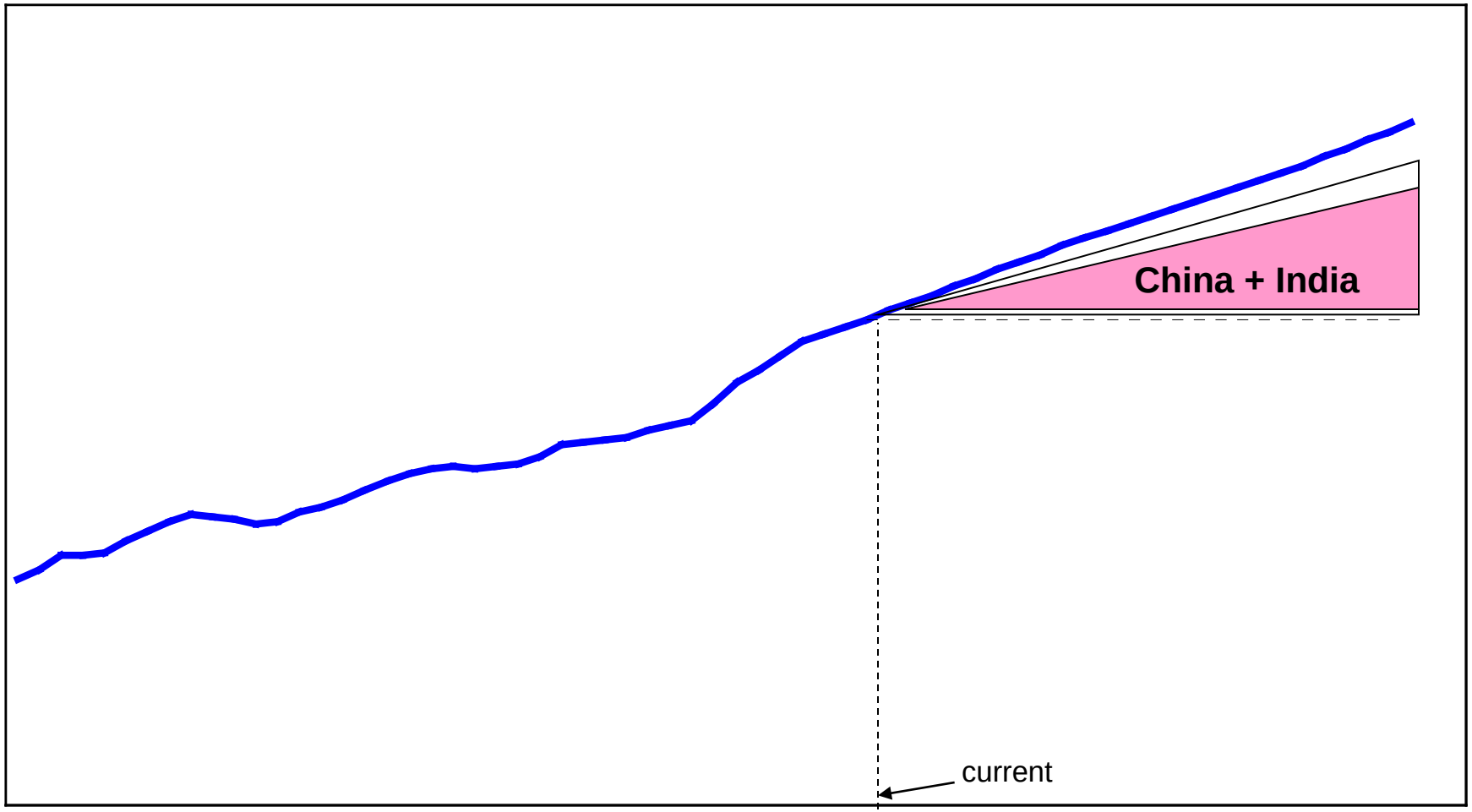
Australian National University



Source: International Energy Agency. Future data are for a “current policies” scenario

Global CO_2 emissions from energy use

Australian National University



Source: International Energy Agency. Unit: billion tonnes CO_2. Future data are for a “current policies” scenario

Why are Asia's emissions growing so quickly?

Australian National University

Primary reason

Increasing energy use as a result of rapid economic growth

Secondary reason

Increasing carbon intensity of energy in developing Asia as countries substitute to fossil fuels, especially coal

Countervailing factors

1. Falling carbon intensity of energy in rich Asia (e.g. Japan, Korea) as countries substitute to lower-carbon energy sources such as natural gas, nuclear power, and modern renewables
2. Effect of energy and climate change policies

Climate change targets

Australian National University

China

Reduce emissions intensity of output by 40-45% by 2020 (from 2005 level)

12th Five-Year Plan recently set out energy and emissions targets and policies for 2011-2015

India

Reduce emissions intensity of output by 20-25% by 2020 (from 2005 level)

Japan

Reduce emissions by 25% by 2020 (from 1990 level) (conditional on global agreement)

Indonesia

Reduce emissions by 26% relative to business as usual by 2020 (unconditional; 41% with international funding support)

Climate change action: China

Australian National University

Energy efficiency: specific targets set for provinces, large state-owned enterprises. Energy standards for buildings, vehicles, …

Decommissioning inefficient plants (manufacturing/electricity generation)

Investment in and incentives for development of **low-carbon energy**. China is leading the green technology race

Tax on fossil fuel extraction in Xinjiang, likely to be expanded

Trials of carbon market mechanisms are planned

Reduction in GDP growth target from 8% to 7% so as to relieve environmental pressures

Climate change action: others

Australian National University

India

2010: introduced a small tax on coal, with revenues used to fund clean energy R&D

Japan

Has voluntary ETSs in place, but national compulsory ETS has been delayed

Nuclear power is at centre of its emissions reduction plans – now at some risk

Indonesia

Phasing out fossil fuel subsidies by 2014

Progress to reducing emissions from forestry

- Moratorium on issuing new licences for forest conversion as part of a US$1 billion agreement with Norway

- Indonesia-Australia Forest Carbon Partnership aims at improving institutions, incentives and monitoring in forestry

- Supporter of UN REDD Programme (Reducing Emissions from Deforestation and Forest Degradation)

Implications for Australia

Australian National University

Australia to continue to benefit from rapid growth in energy demand in the region for the foreseeable future

Climate change policies in the region have the potential to:

1. Dampen growth in demand for Australian energy exports
2. Reorient demand away from coal and toward natural gas, uranium, renewables

Australia gains from reduced climate risks due to mitigation efforts in Asia

- Asia's participation is crucial for success of global mitigation efforts

In light of climate action in major export markets, Australia's long-term interests served by innovation in clean coal and renewables

To achieve this: carbon price, government funding of R&D

Australian National University

Thanks

Paul Burke
Arndt-Corden Department of Economics
Crawford School of Economics and Government
paul.j.burke@anu.edu.au