Australian National University

China's coal demand is becoming more price elastic

Paul J. Burke[a] and Hua Liao[b]

[a] Australian National University (ANU)

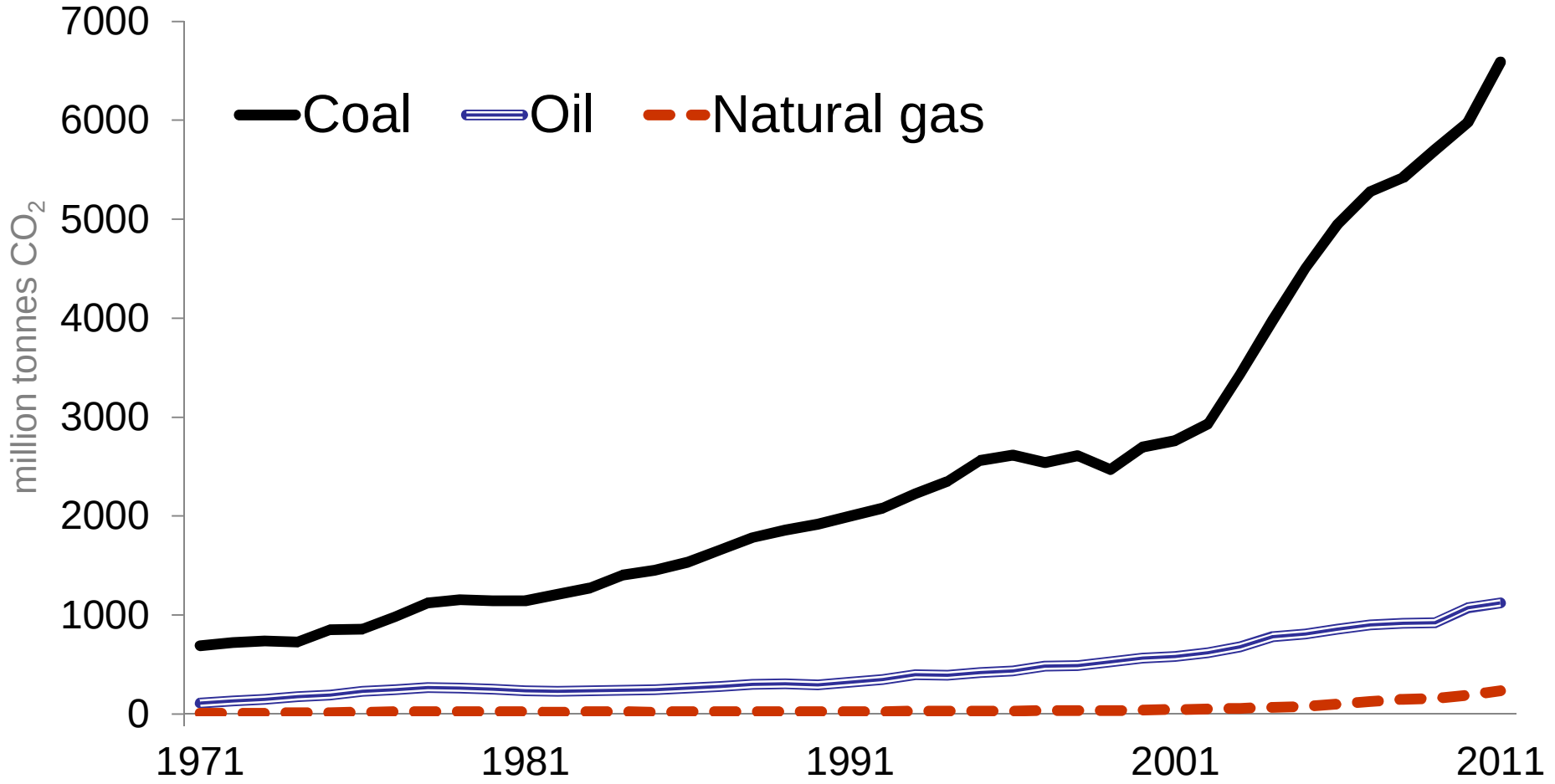
[b] Beijing Institute of Technology (BIT)

ANU, 12 February 2014

paul.j.burke@anu.edu.au

@pburke_ec

Sources of China's energy-based CO_2 emissions



Source: IEA

Questions

1. What is the price elasticity of demand for coal in China?

2. Has this elasticity changed over time?

Picture: http://blogg.nhh.no/reconhub/?p=1868

Approach

Use panel of provincial data for period 1998-2012

Sample of 379 observations (30 provinces; 15 years; some missing)

Fixed effects estimation, with numerous controls

Price measure: output price index for the “mining and washing of coal” in each province (in real terms; deflated by industrial producer price index)

Caveat: Data are not perfect

Picture: http://ceo.ca/coal-to-surpass-oil-as-top-global-fuel-by-2020-wood-mackenzie/

Answers

Price elasticity of demand now in range **-0.4 to -0.8**

Has ↑ed over time (in absolute value)

Appears partly to be driven by marketisation

Picture: http://thetransitpass.wordpress.com/2009/10/30/electric-cars-bad-for-our-health/coal-miner/

Implications of removing subsidies

IEA estimates China's coal consumption subsidies = $13 billion per annum

We calculate that the removal of these subsidies would result in a **2% ↓** in coal use and related emissions

Picture: http://www.etftrends.com/2012/05/currency-etfs-chinese-yuan/

Implications for emissions pricing

China currently piloting ETSs, considering carbon tax

For pricing schemes to function properly in terms of reducing emissions, it is important that coal use is responsive to coal prices

↑ing price elasticity of coal demand

=> China becoming increasingly suitable for price-based instruments

Picture: http://www.brookings.edu/research/commentary?topic=Tax%20Reform/

Thank you – comments very welcome

Paul J. Burke
Crawford School of Public Policy
Australian National University
paul.j.burke@anu.edu.au
@pburke_ec

Picture: http://2ndgreenrevolution.com/2011/11/30/chinese-power-plants-fined-for-sulfur-pollution-false-data/