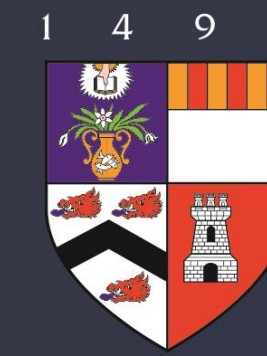


Modelling energy consumption in China

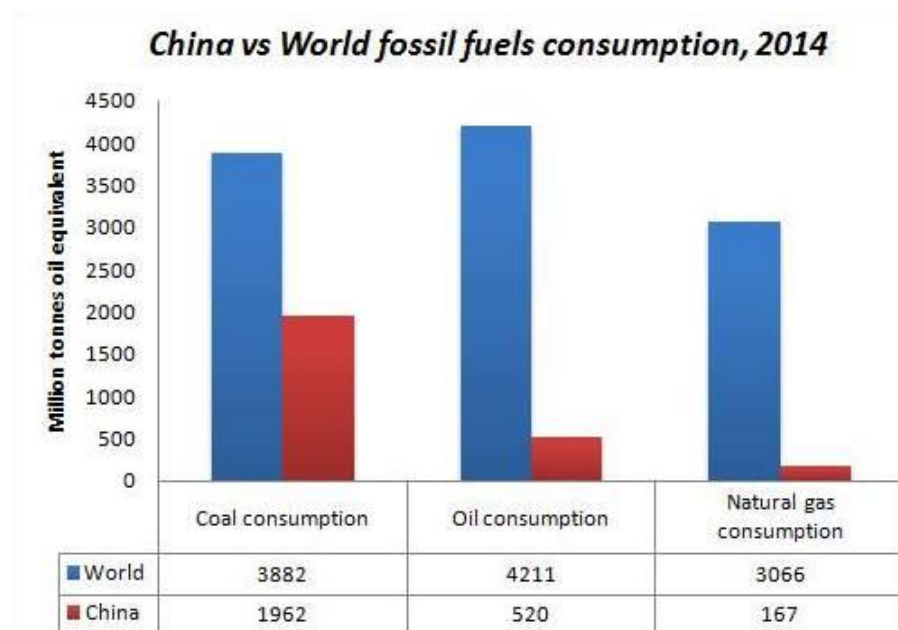
Georgi L Ivanov



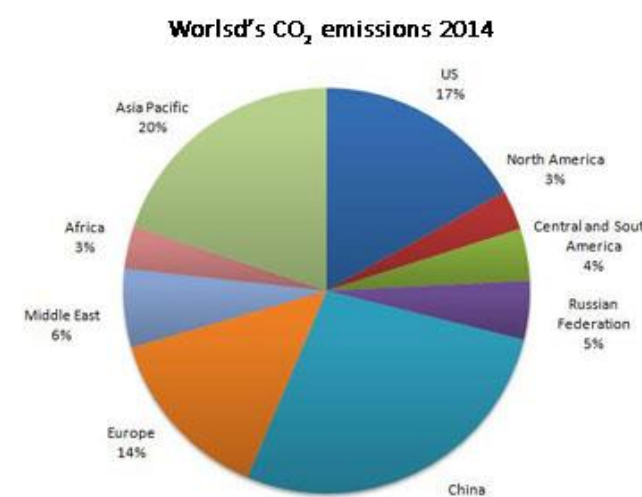
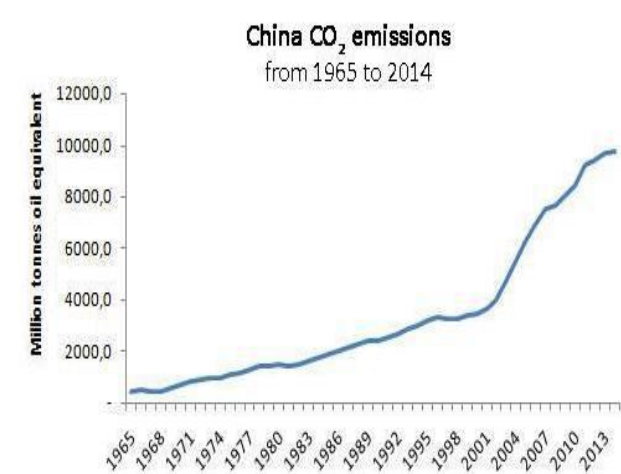
UNIVERSITY OF ABERDEEN

Introduction

- Today, China is the biggest energy consumer in the world with an annual energy consumption of 2,972.1 million tonnes oil equivalent



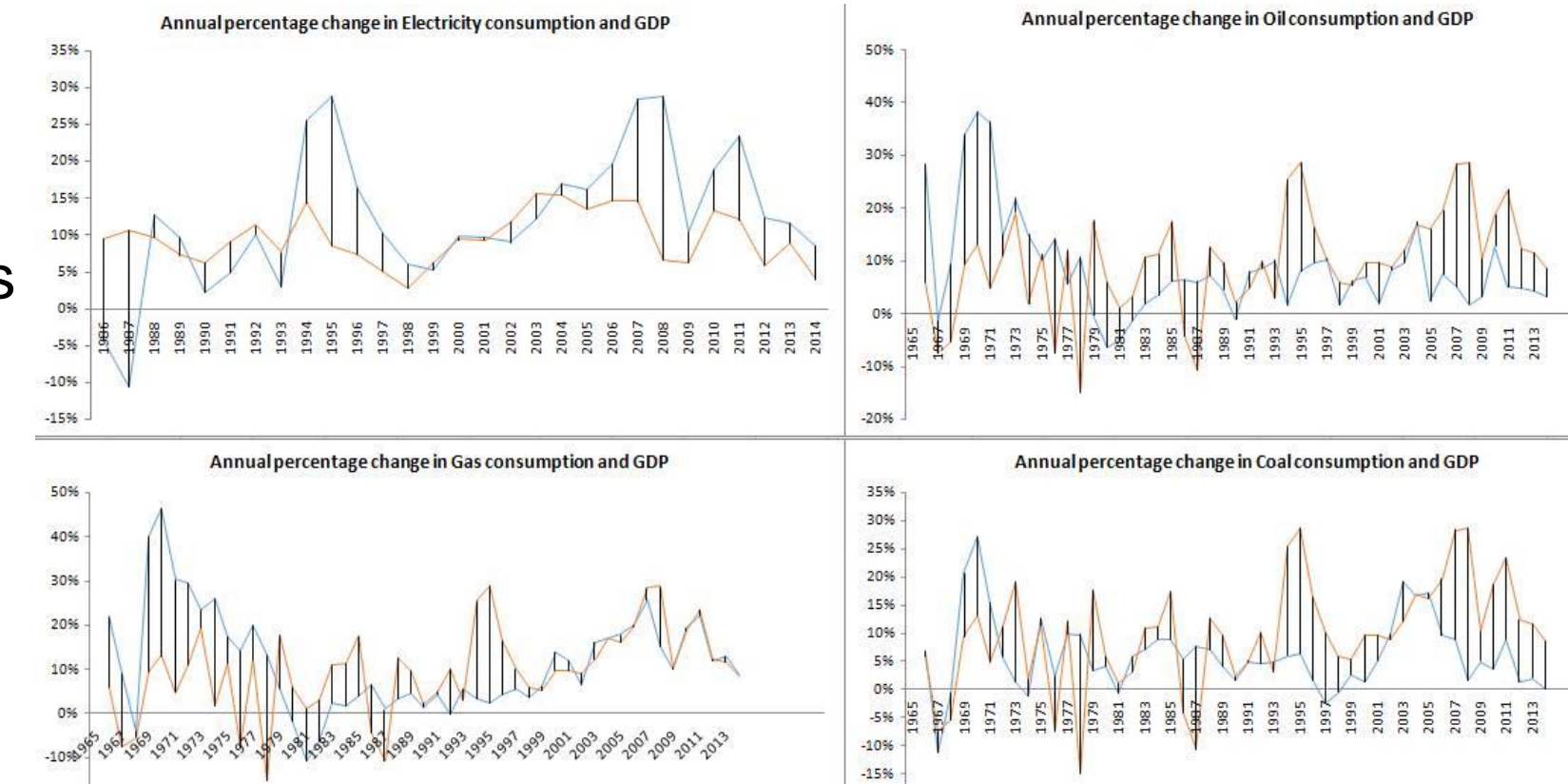
- The vast consumption of fossil fuels have caused serious environmental problems
 - Can it be reduced?



- This study examines the relationship between energy consumption and economic growth in China

Methodology

- Treatment of non-stationary data:
 - Testing for unit root using Augmented Dickey-Fuller and Phillips-Perron tests
- Relationship analysis using Vector Autoregressive (VAR) modelling
 - Block significance and causality tests
 - Impulse response functions



Results

- Existence of correlation between Energy consumption and GDP
 - Uni-directional Granger causality between Oil and coal consumption and GDP



- Bi-directional Granger causality between electricity and natural gas consumption and GDP



Conclusion

- The energy-income nexus poses important challenges to Chinese policy makers, considering the high energy consumption growth rate, high CO₂ emissions level and its growth rate
 - Directly reducing coal consumption by switching to other energy sources can lower the emissions problem without causing economic growth distortions
 - Reduce oil and gas consumption indirectly by lowering the energy intensity in the country