Australian National University

# Small States, Big Effects?

## *Oil Price Shocks and Economic Growth in Small Island Developing States*


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# The Takeaway Message

- Small states and small effects!
  - After a rise in oil prices, all 7 countries experience a temporary increase or negligible reduction in real GDP
  - The role of energy intensity and exchange rate system is not relevant in explaining this finding
  - No difference between oil importers and exporters

# Research Questions

- Do rising oil prices reduce GDP growth in SIDS?
- Is the effect of oil price shocks on real GDP growth different in oil-exporting countries compared to oil importers?
- To what extent is the impact on real GDP growth linked to oil intensity use and exchange rate regimes?

# Relation to the Literature

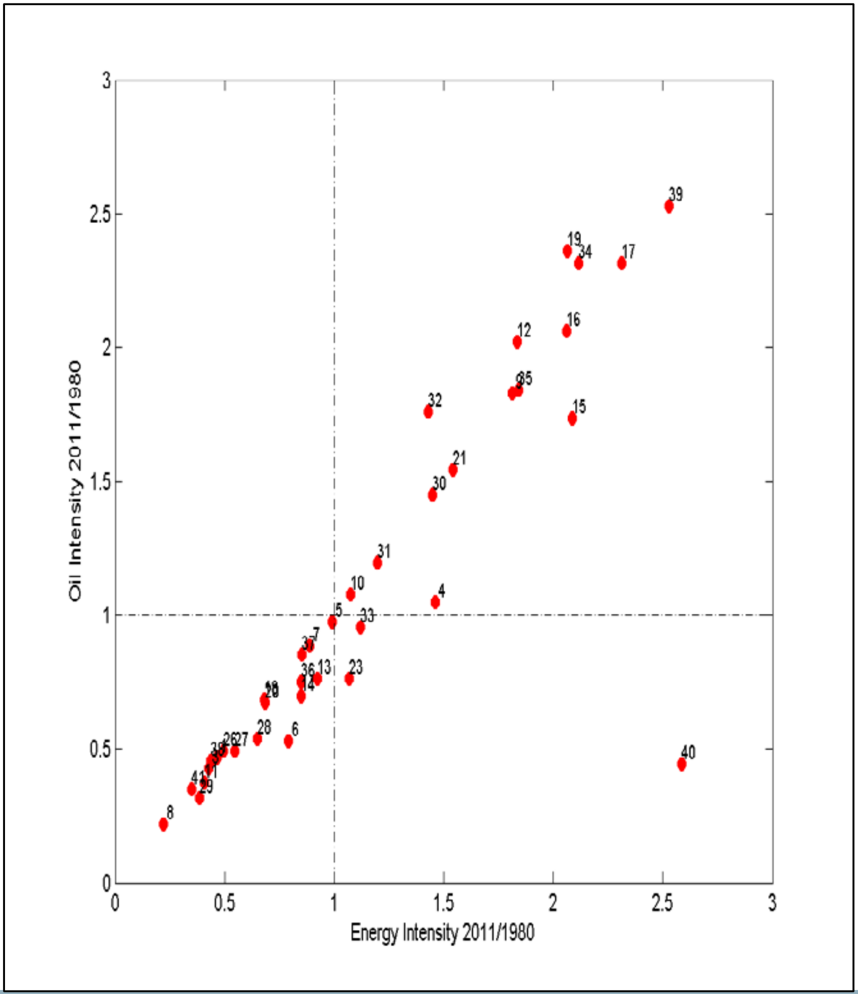
- Early models found large effects
  - The 1973-74 oil price shock led to a 7% decline in real GNP in the United States and as much as 17% in Japan – Rasche and Tatom (1977)
- Relationship asymmetric
  - Rising oil prices seem to retard economic activity more than how falling oil prices stimulate it – Hamilton (1983); Mork (1989)

# Relation to Literature

- Magnitude now smaller
  - A 10% oil price shock would have reduced GDP in the United States by 0.7% prior to 1984 but later declined to 0.25% over a 2-3 year period – Blanchard and Gali (2007)
- Oil intensive oil-importing developing countries suffer more from adverse oil price shocks than OECD countries – IEA (2004)
- Quantitative analysis of 13 Pacific islands between 2002 and 2009 show that rising oil prices feed directly into inflation and slow economic growth – Davies and Sugden (2010)

# Stylized Facts – Common Features


Source: United Nations Conference on Trade and Development (UNCTAD)



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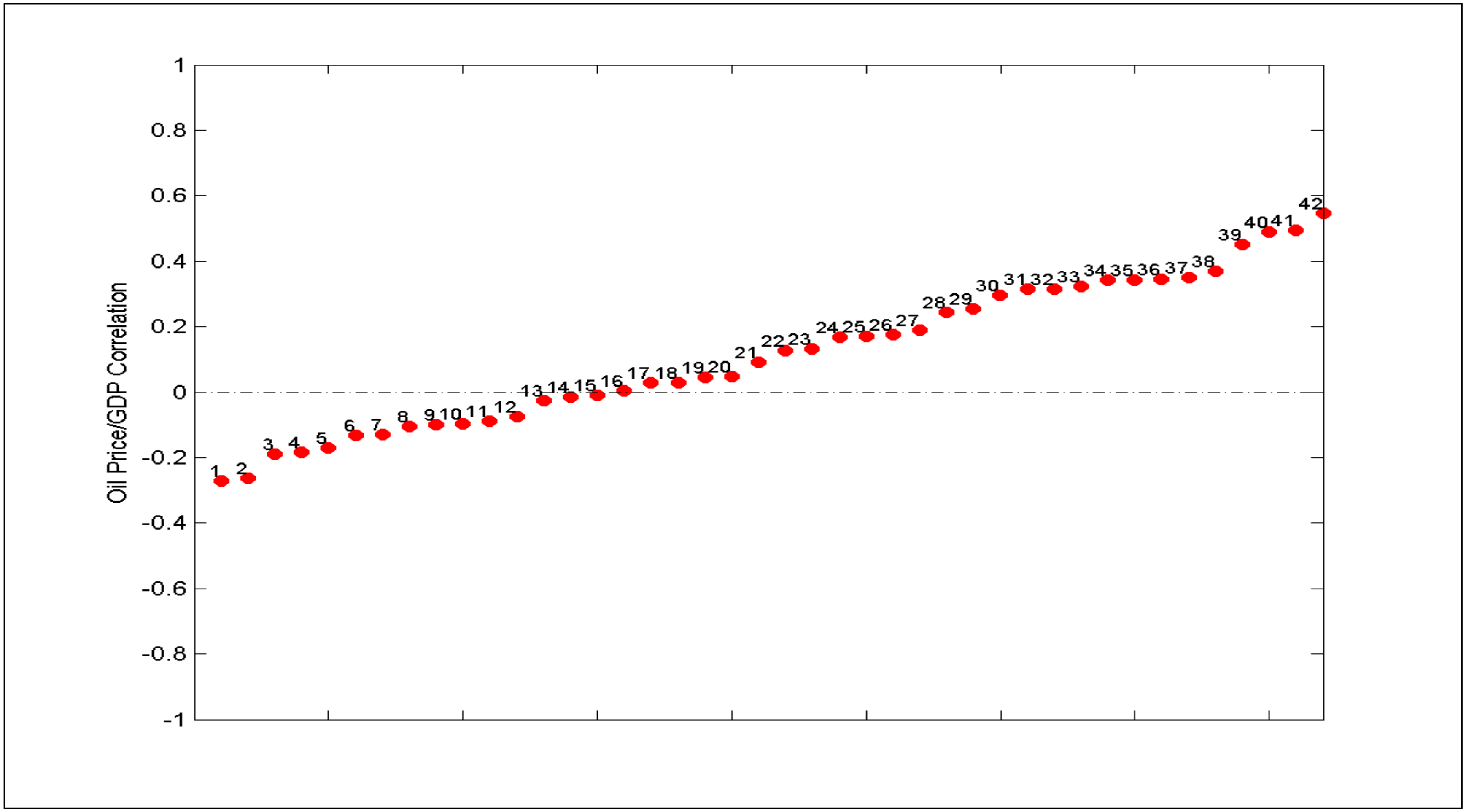
# Stylized Facts – OP/GDP Correlation



# Data and Methodology

- Sample – 7 countries
  - Caribbean, Pacific, and AIMS
  - Oil Endowment
    - Exporters – Bahrain and T&T
    - Importers – Cuba, Jamaica, Fiji, Kiribati, Mauritius
  - Exchange Rate System
    - Fixed – Fiji, Kiribati, Bahrain, Cuba
    - Managed Float – Jamaica, T&T, Mauritius

- Annual Data: 1980 - 2012
  - crude oil prices(op)
  - exchange rate (er)
  - consumer price index (cpi)
  - domestic GDP (gdp)

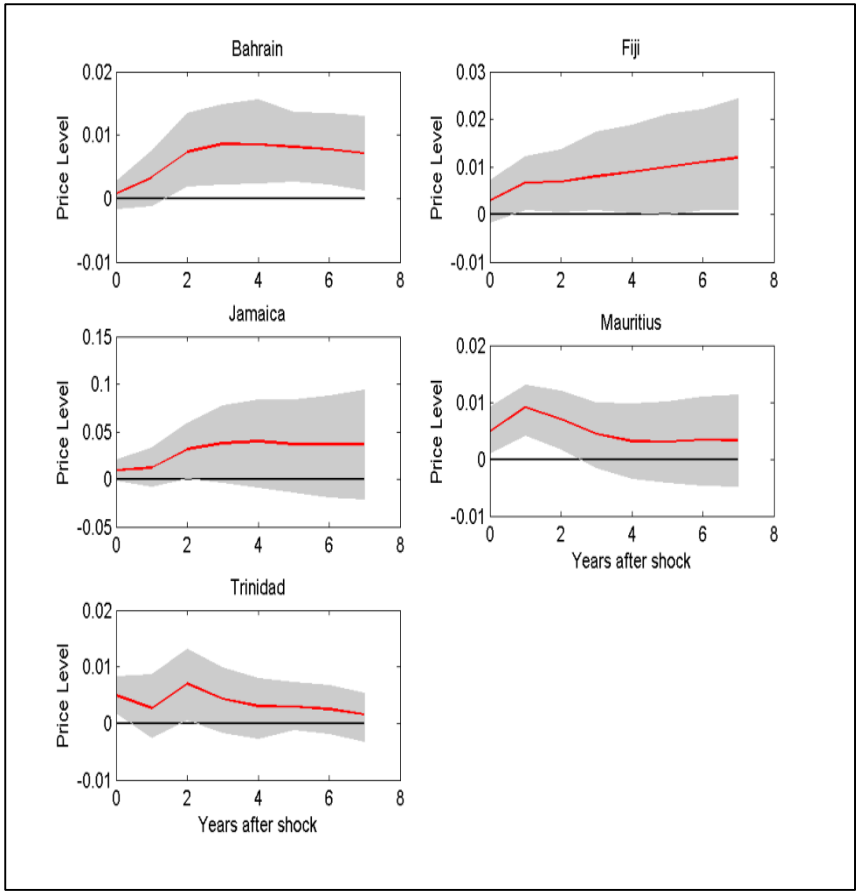
- Diagnostic checks
  - All series at most I(1): ADF and KPSS Tests
  - VAR lag length: BIC
  - Cointegration in 6 countries, Full rank in Fiji

# Data and Methodology

- CVAR
  - Short-run restrictions on the contemporaneous matrix of coefficients to improve estimation results
  - $\Delta Y_t = \prod Y_{t-1} + \sum_{i=1}^{p} \Gamma_i \Delta Y_{t-i} + u_t$
  - $Y_t = [op_t, er_t, cpi_t, gdp_t]'$
  - $u_t = B\varepsilon_t$

$$\begin{bmatrix} u_{op,t} \\ u_{er,t} \\ u_{cpi,t} \\ u_{gdp,t} \end{bmatrix} = \begin{bmatrix} \gamma_{11} & 0 & 0 & 0 \\ \gamma_{21} & \gamma_{22} & 0 & 0 \\ \gamma_{31} & \gamma_{32} & \gamma_{33} & 0 \\ \gamma_{41} & \gamma_{42} & \gamma_{43} & \gamma_{44} \end{bmatrix} = \begin{bmatrix} \varepsilon_{ops,t} \\ \varepsilon_{ers,t} \\ \varepsilon_{cpis,t} \\ \varepsilon_{gdp,t} \end{bmatrix}$$

# Main Empirical Results




- Consumer Price Level
  - Unambiguous increase in consumer prices

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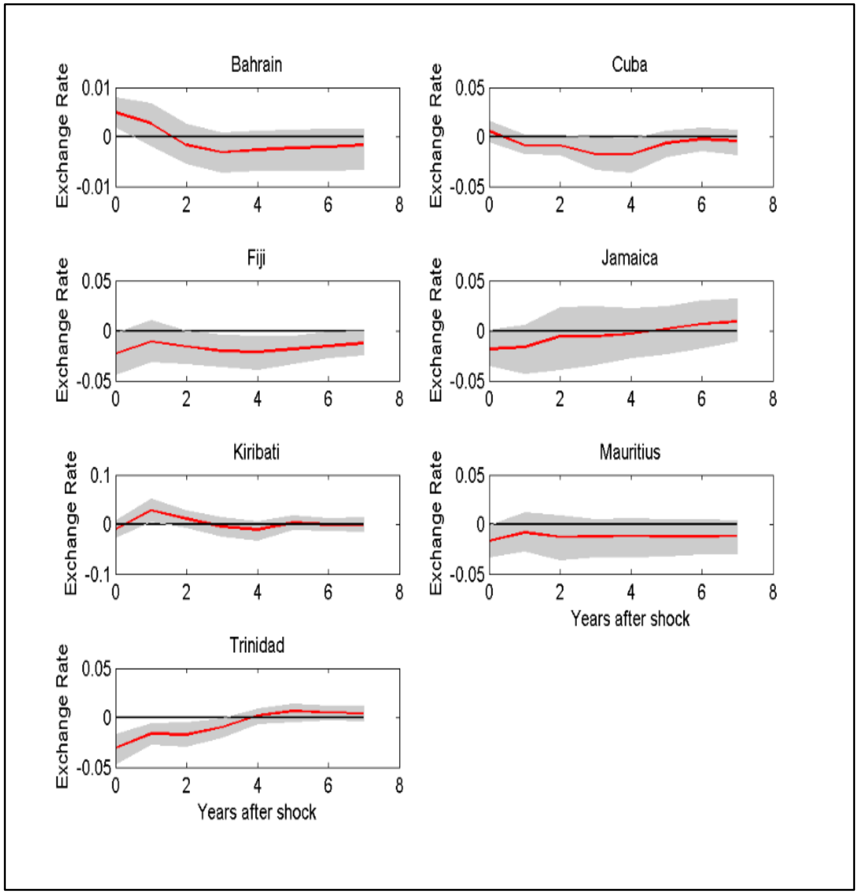
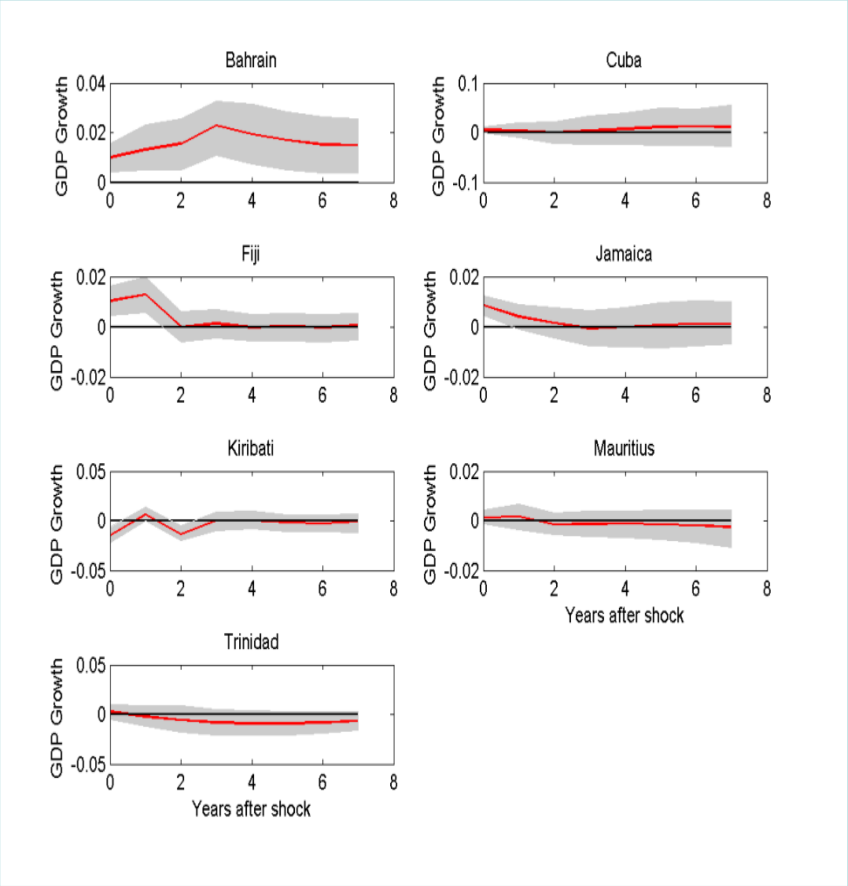



- Exchange Rate
  - Oil exporters - RER appreciates
  - Oil importers - RER appreciates initially followed by a depreciation by the second year

# Main Empirical Results




- Real GDP
  - Oil price increases generally have a positive effect on real GDP growth
- No obvious difference
  - Oil-importing or exporting
  - Exchange rate system
  - Oil intensity

# Conclusions

- Oil price shocks are inflationary in all 7 SIDS economies

- Small states and small effects!
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  - The role of energy intensity and exchange rate system is not relevant in explaining this finding
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- **Possible Explanation: Endogenous Policy Choices**
  - Sectoral Composition
  - Locational advantages
  - Outward-oriented Economic Policies

Thank you for your time and interest.

I look forward to your comments and questions.