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AVOIDING THE RESOURCE CURSE

The Economics of Managing Natural Resources

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Natural resources often “curse” the countries that discover them. Australia has fared reasonably well, but can do even better

1. The Parable of Pleasant Isle

2. What is the resource curse?

3. How can Australia better manage its resources?

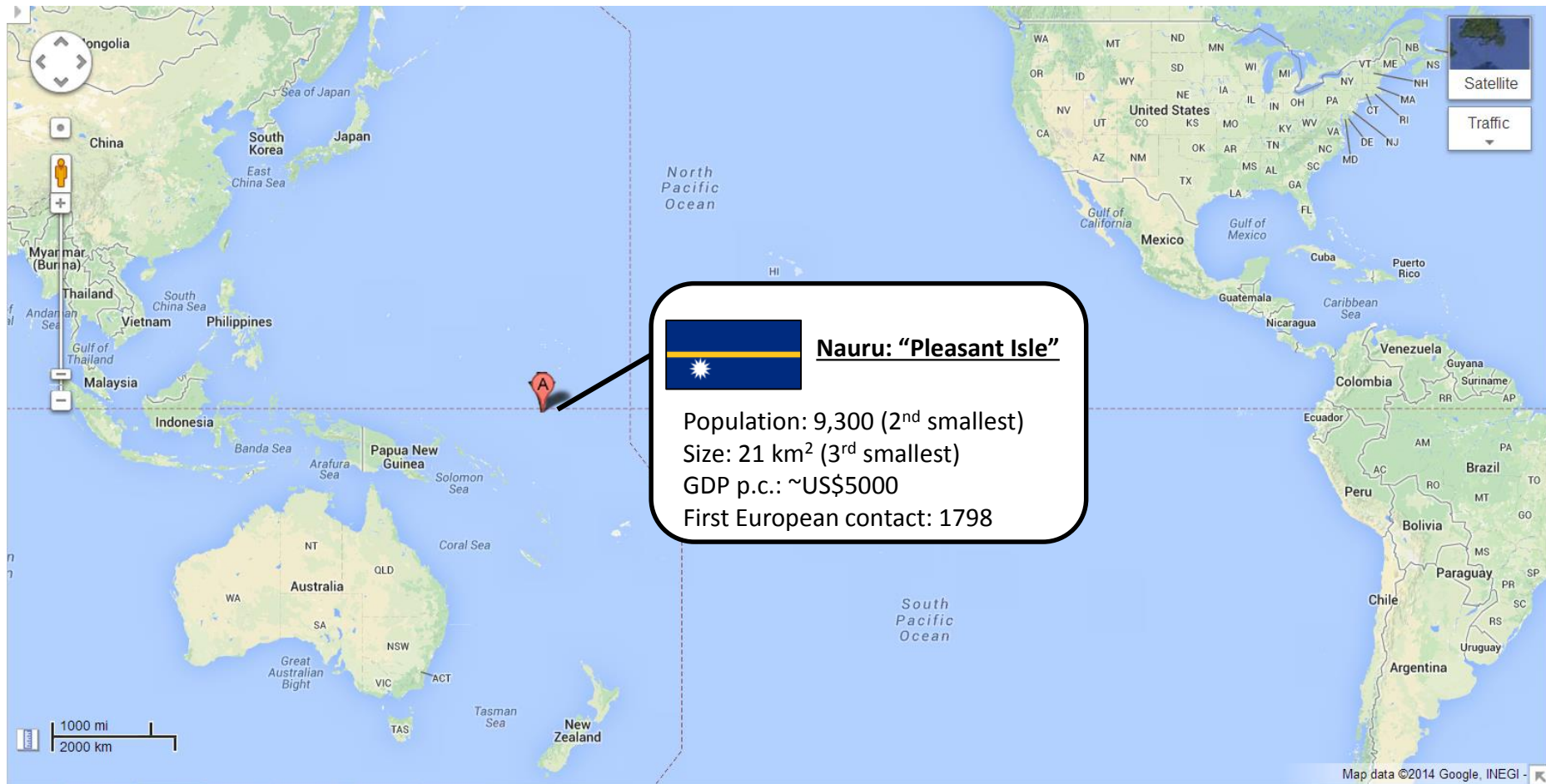
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The story of Nauru captures how badly natural resource management can go wrong



The interior of Nauru was mined for phosphate (used in fertilizer) from 1907-2000s



- Kalgoorlie "Superpit", Western Australia (Gold)



- Nauru, Central Pacific (Phosphate)

... both about the same size...

Phosphate mining caused serious environmental damage



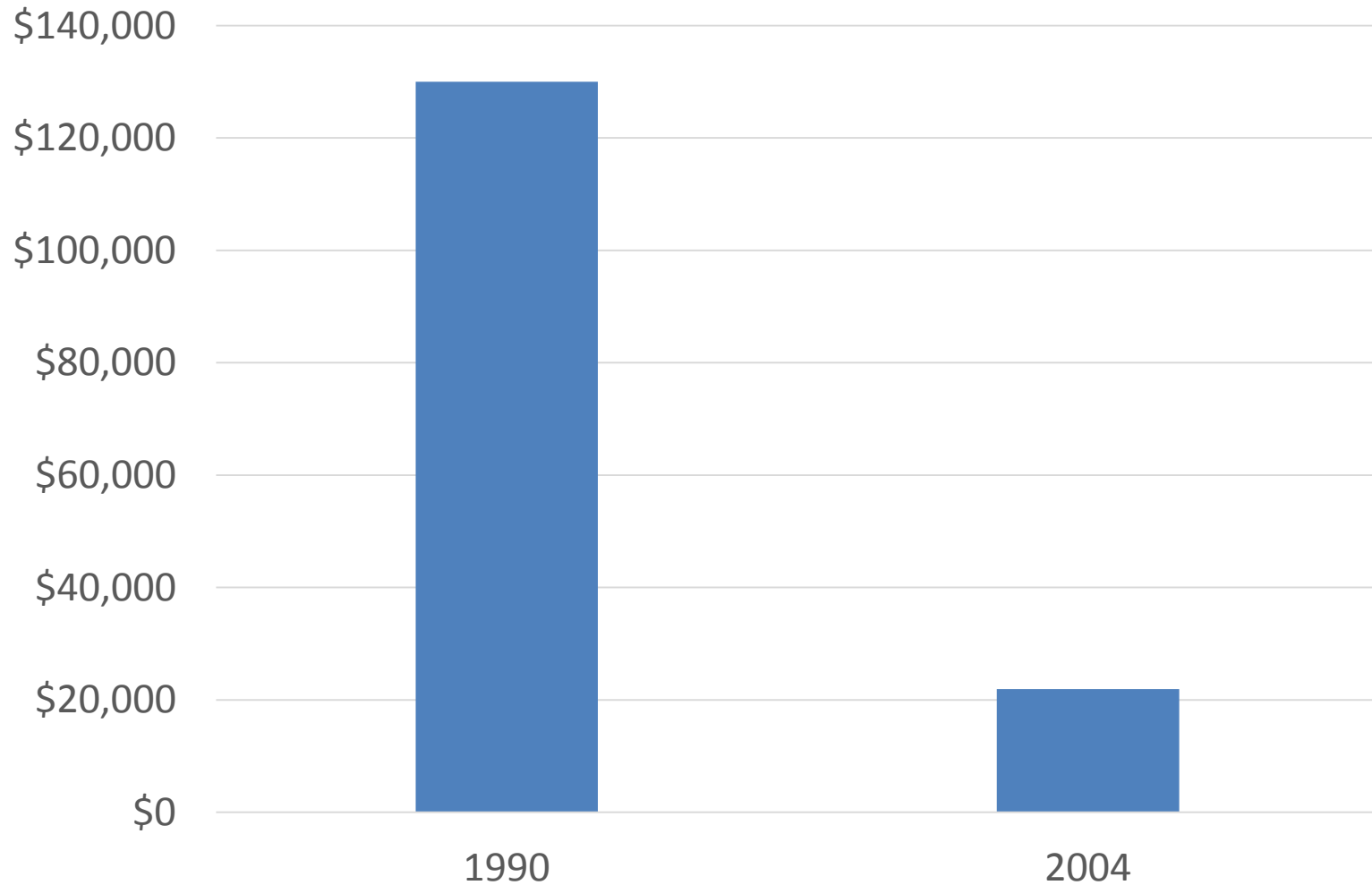
Phosphate loading cantilevers – destroyed reef

Coral pinnacles left after mining – no agriculture, almost all food imported



In 1990 Nauru was one of the richest countries in the world, but whittled the wealth away through bad investments and corruption

Nauru Phosphate Royalties Trust, assets per person (AU\$ 1990)



Some of the investments include



Air Nauru, Yaren Airport

- Fleet of 7 aircraft
- Seating capacity for 10% of population

Nauru House, Melbourne

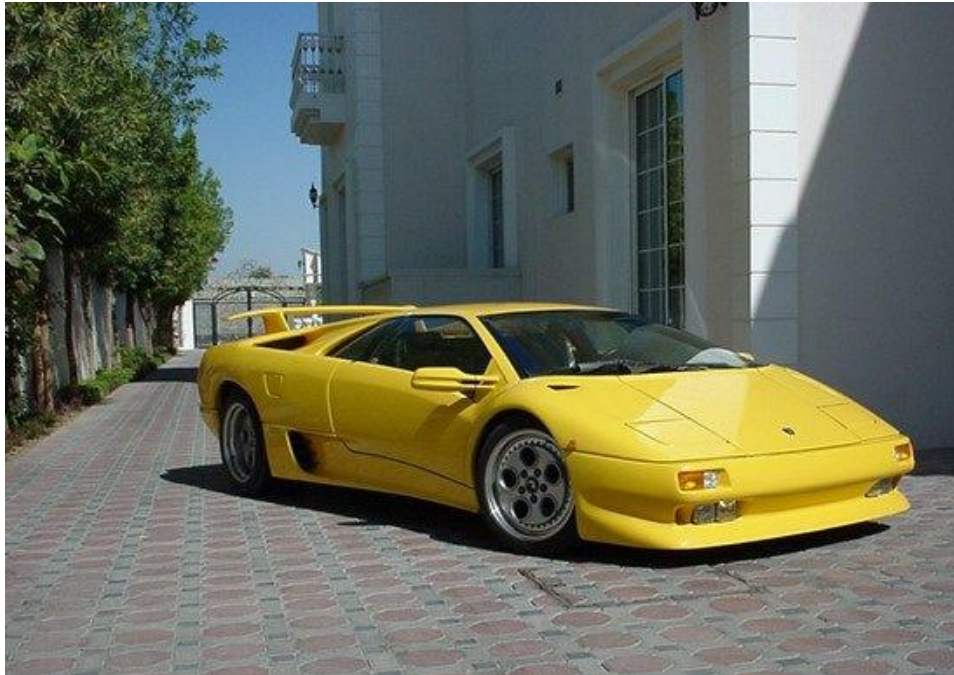
- Part of international property portfolio
- Sold in 2004



...as well as

- Sports teams
- Failed west-end shows
- Cruise ships that didn't leave port

...as well as

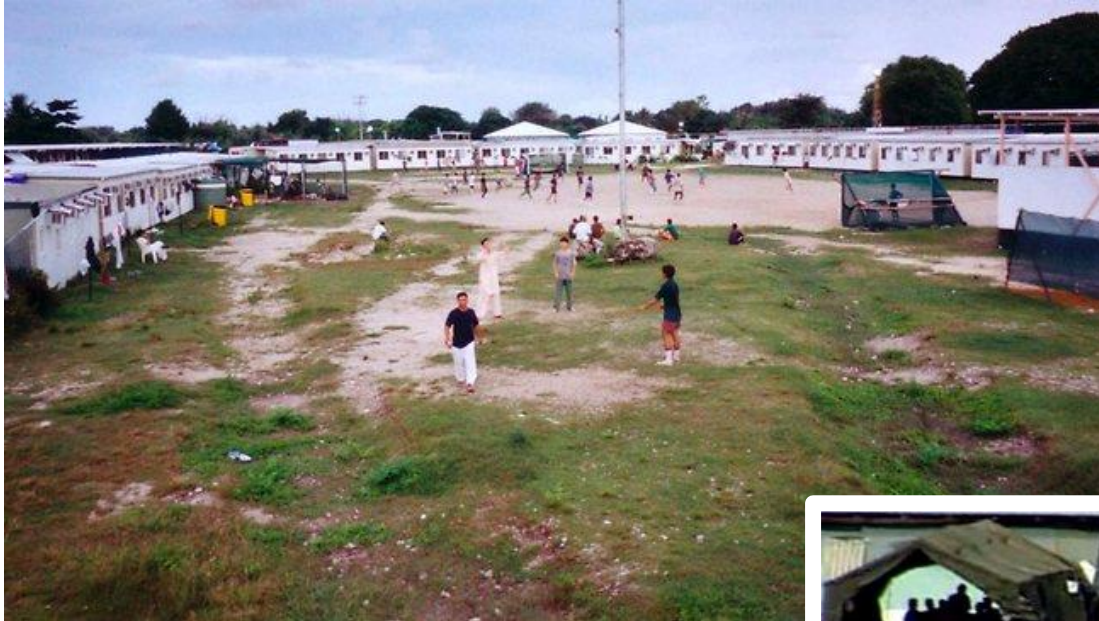


A yellow Lamborghini for the police chief...



*...for the island's one road...
... which is a 16 km circle...*

Nauru's income is now based on foreign aid, tax haven status and processing refugees....



Australia's offshore refugee processing centre.



... on the phosphate plain where my less-than-illustrious athletics career began.



A portrait of the speaker as a young man

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The resource curse works through six different channels

2. What is the resource curse?

i. Inflation

ii. Volatility

iii. Exhaustion

iv. Dutch disease

v. Corruption

vi. Environmental degradation

The first four can all be solved with a mining tax and a sovereign wealth fund

i. Inflation is caused by spending resource revenues, which distorts the economy

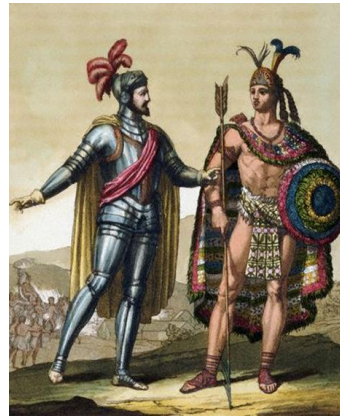
Egypt: 14th Century



Mansa Musa (1280-1337):

- Emperor of Mali (Timbuktu)
- Vast wealth from trading
- Muslim: made Hajj pilgrimage to Mecca in 1324
- Gave out gold to poor in Cairo, Mecca.
- Inflation destroyed economies

Spain: 16th Century



Curse of Moctezuma (1520)

- Spanish Empire extracted gold and silver from Latin America
- Amounted to (1990 USD) \$1.5 trillion in 16th Century
- “Everything is dear in Spain except silver”

Australia: 21st Century



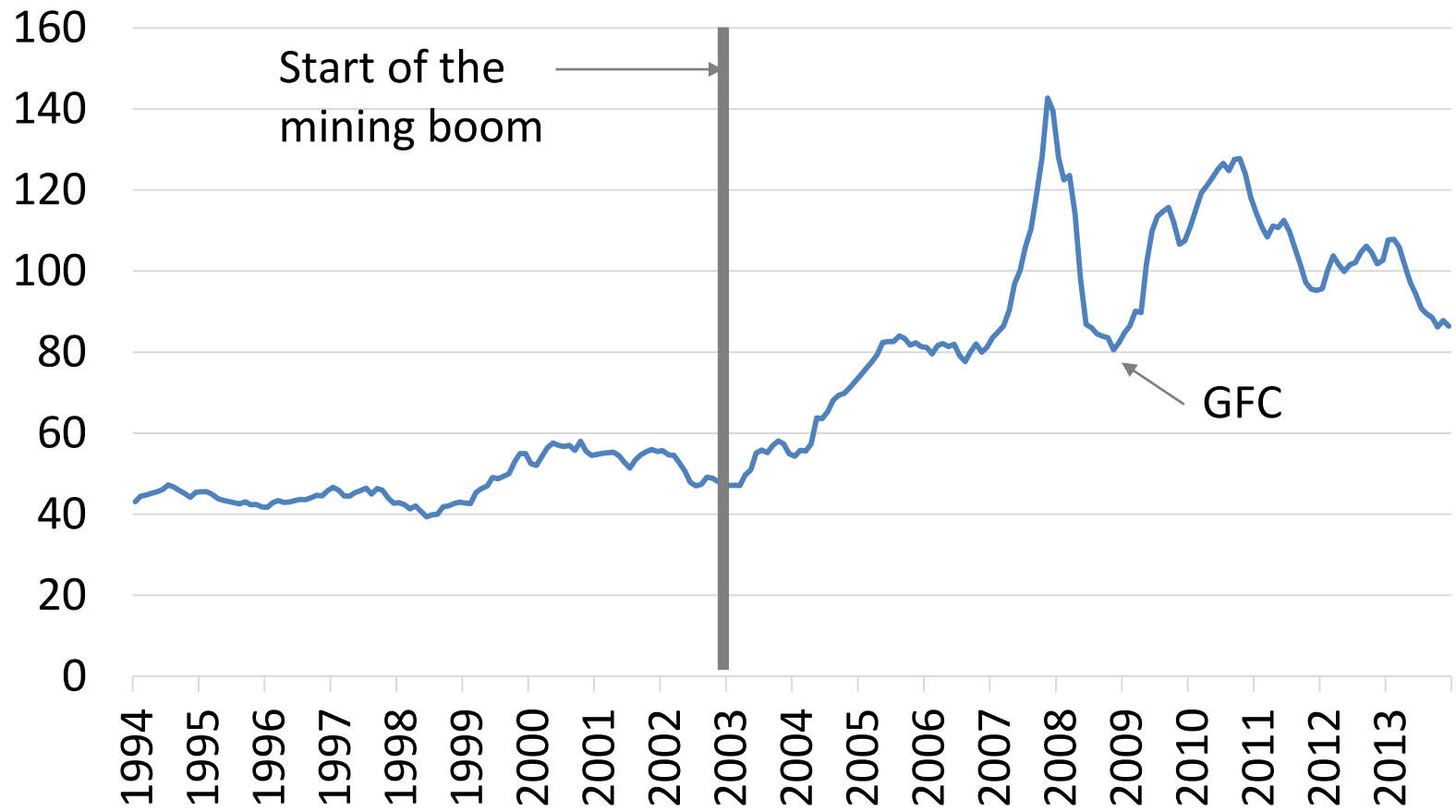
Western Australia (2003-)

- Price of iron ore rose 13x from 2003-2011
- Vast investment and employment in mining in WA
- Average inflation nearly 0.5% above Aus avg. since 2003

Inflation distorts the relative price of things, and transfers wealth from lenders to borrowers. So important that the RBA's main purpose is to keep inflation stable at 2-3%.

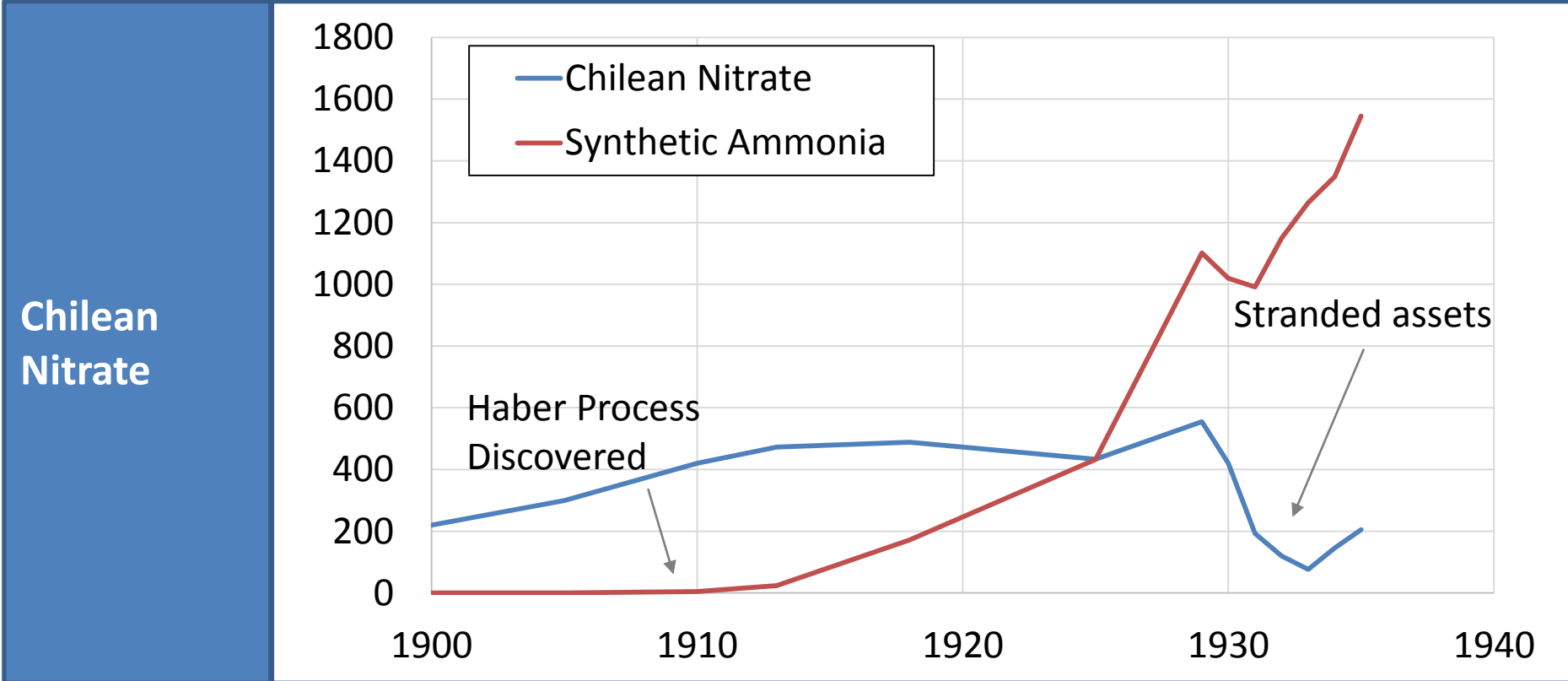
ii. Volatile income makes it very difficult to budget for the future, and to conduct monetary policy

Reserve Bank of Australia Commodity Price Index, Jan 2013=100



Source: RBA, 2014

iii. Natural resources are also finite – not always because of exhaustion. This was a problem for Chile in the 1930s, leaving many stranded assets.



Australian Resources		Reserves left at current production
Natural Gas:		85 years
Iron Ore:		90 years
Coal:		160 years

Stranded Assets

IF: Global warming kept to 2°C
 THEN: 60-80% of listed firms' coal, oil and gas reserves are unburnable

iv. Resources also cause the exchange rate to appreciate leading to Dutch disease: the collapse of manufacturing firms

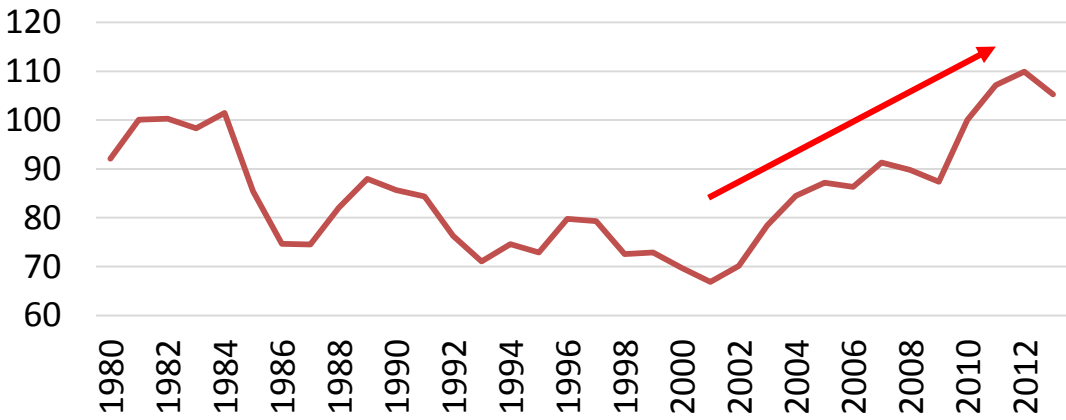
Holland
1970s

- Large North Sea Gas deposits discovered (1959)
- Real exchange rate appreciated
- Other sectors became uncompetitive
- Unemployment rose – Gas extraction doesn't employ many people

Australia
2000s

Australia's real exchange rate appreciated dramatically in the 2000s...

Australian real exchange rate index

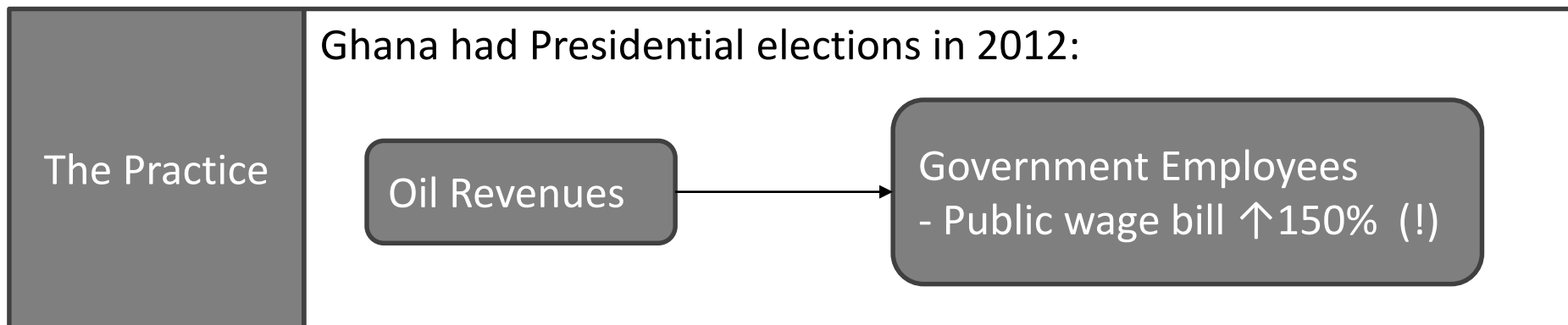
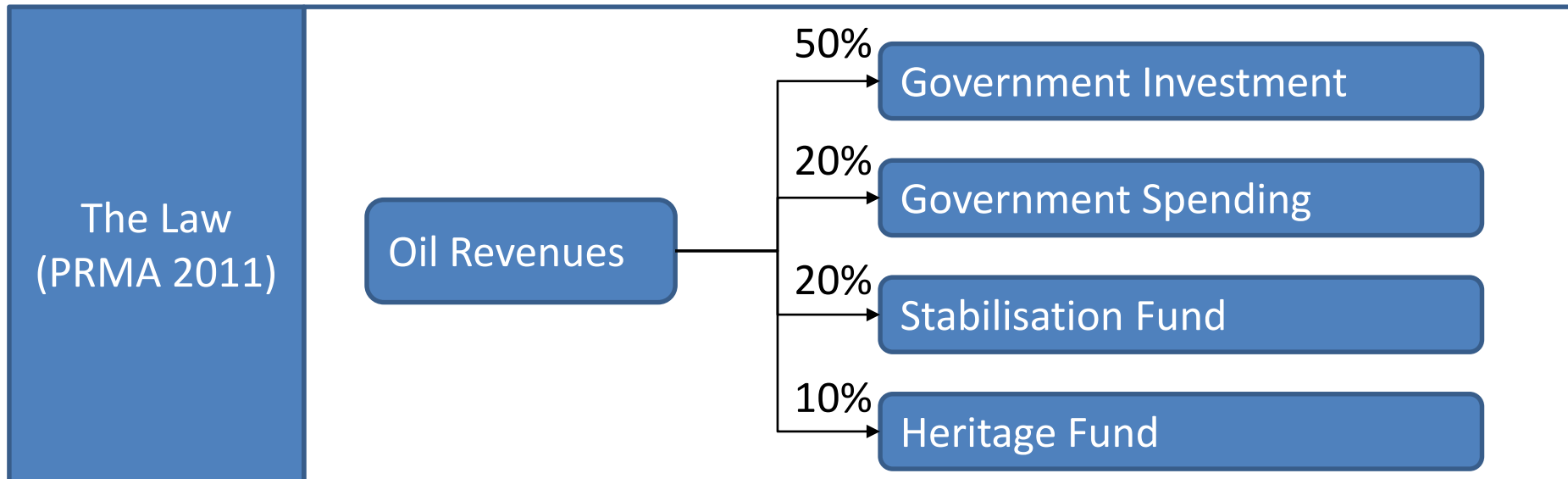


...contributing to the collapse of the Auto industry



v. In developing countries the political process can also be corrupted by natural resources, as in Ghana in 2012.

Ghana is one of the best-managed countries in Africa and made a modest oil discovery in 2007. My colleagues at Oxford and I helped design their law in 2011.



vi. The environment can be destroyed by mining, or it can be rehabilitated

Destruction...



- Nauru, Central Pacific (Phosphate)

...or rehabilitation



- Bridge Hill Ridge, Myall Lakes, NSW,
1983 and Now

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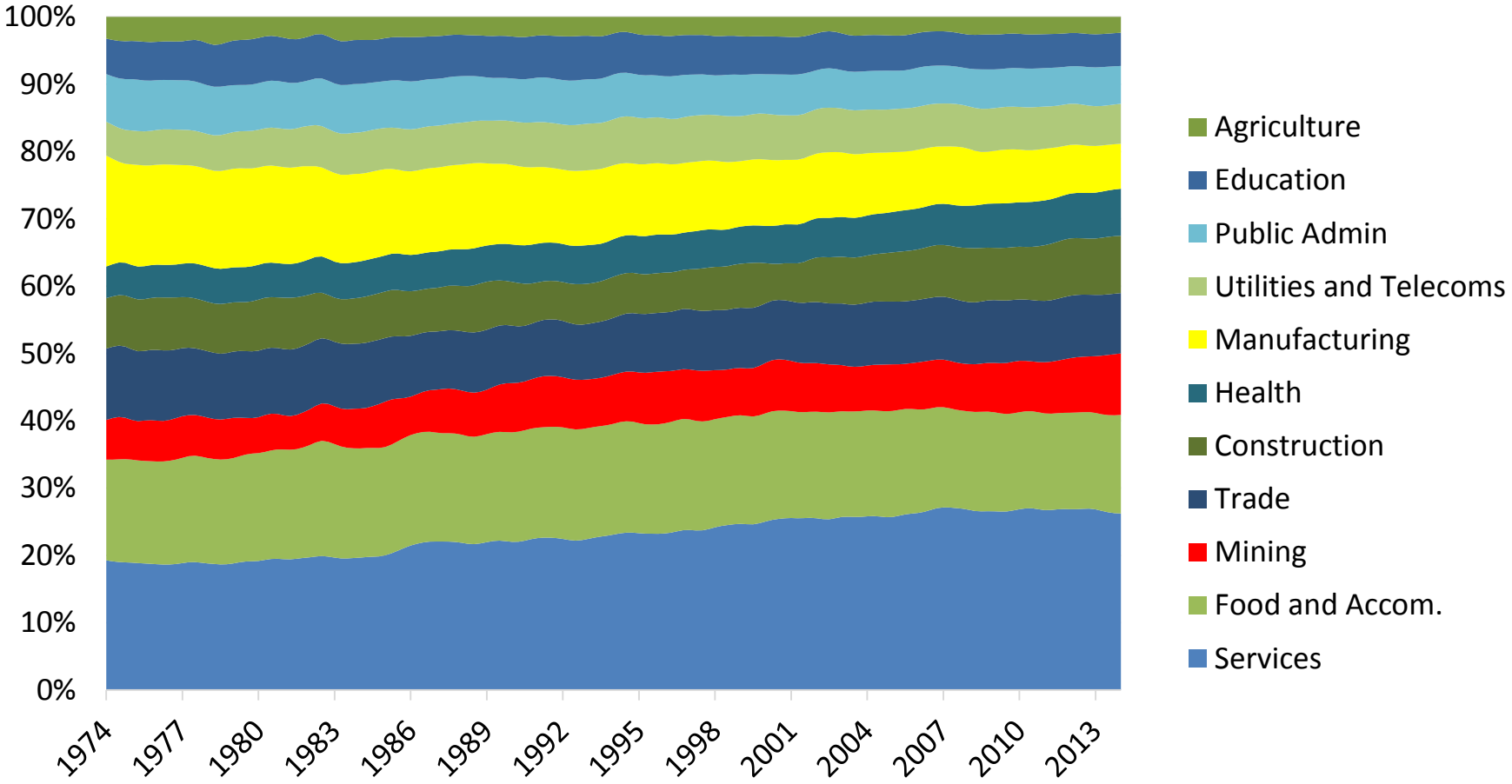
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In Australia while mining accounts for over 50% of exports it only accounts for 5-10% of GDP (and even less of employment)

Industry share of Australian GDP, 1974-2014, %

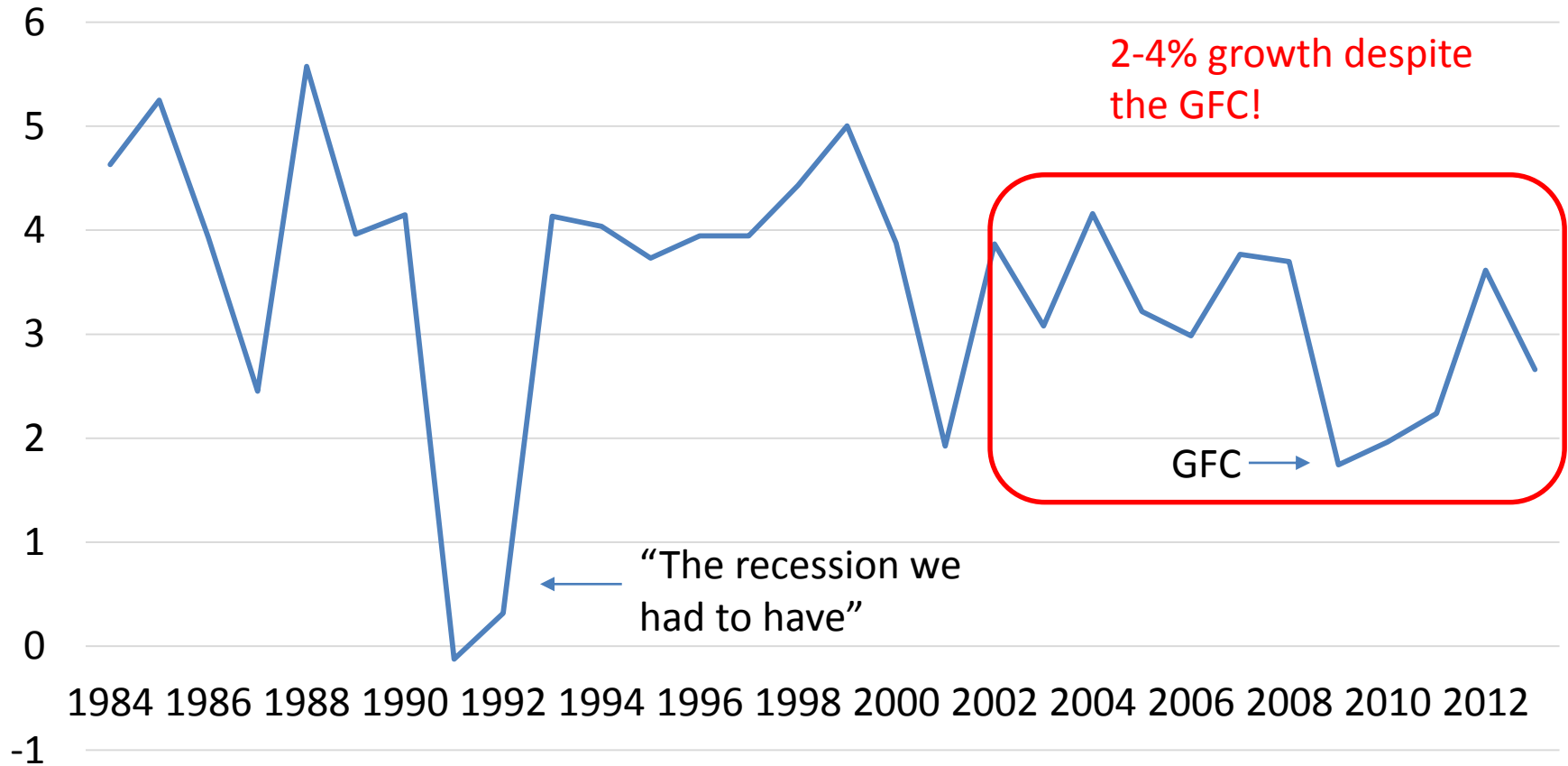


The mining boom is only thought to have added 3% to GDP over 2003-2011.

Source: ABS, 2014; Edwards, 2014

The Australian economy has been quite well managed throughout the mining boom

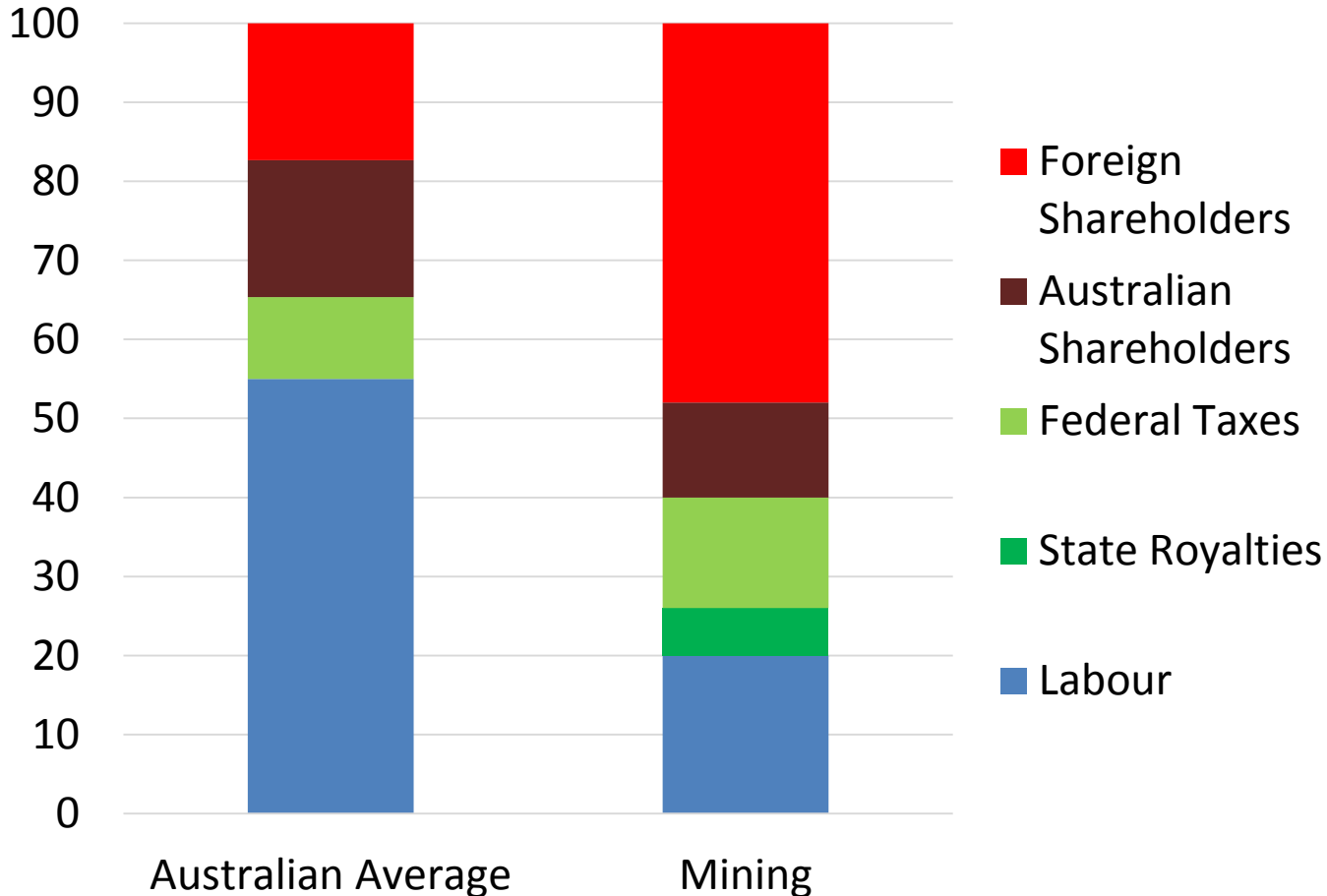
Australian GDP growth rate, 1984-2014, %



Source: ABS, 2014

But, we are missing an opportunity. Natural resources generate a lot of profit but most are being sent abroad.

Revenue breakdown, Mining industry vs Australian Average, 2011



Details

- Foreign Share Ownership:
 - Aust Avg: 50%
 - Mining: 80%
- Federal Taxes:
 - Fell from 52% to 19% of profits as mineral prices rose.
- Domestic ownership concentrated:
 - Aus: 6 mining billionares
 - Norway: None

Source: Edwards 2014, Black Kirkwood 2010, Clark, Greagg, Leaver 2011

Best practice from experience around the world involves taxing resource rents and saving the proceeds in a sovereign wealth fund.

Resource curse channel

i. Inflation

ii. Volatility

iii. Exhaustion

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Effect of mining tax and SWF

- Takes demand out of the economy
- Smooths resource revenues in budget
- Saves for future generations
- Lowers the exchange rate
- N/A
- May make it worse (easy to raid)

The mining tax (and carbon tax) would also help governments meet their commitment to balance their budgets

Mineral Resource Rent Tax

- Tax ↑: little effect on production

$$\text{Budget Surplus} = \text{Tax} - \text{Spending}$$

Carbon Tax

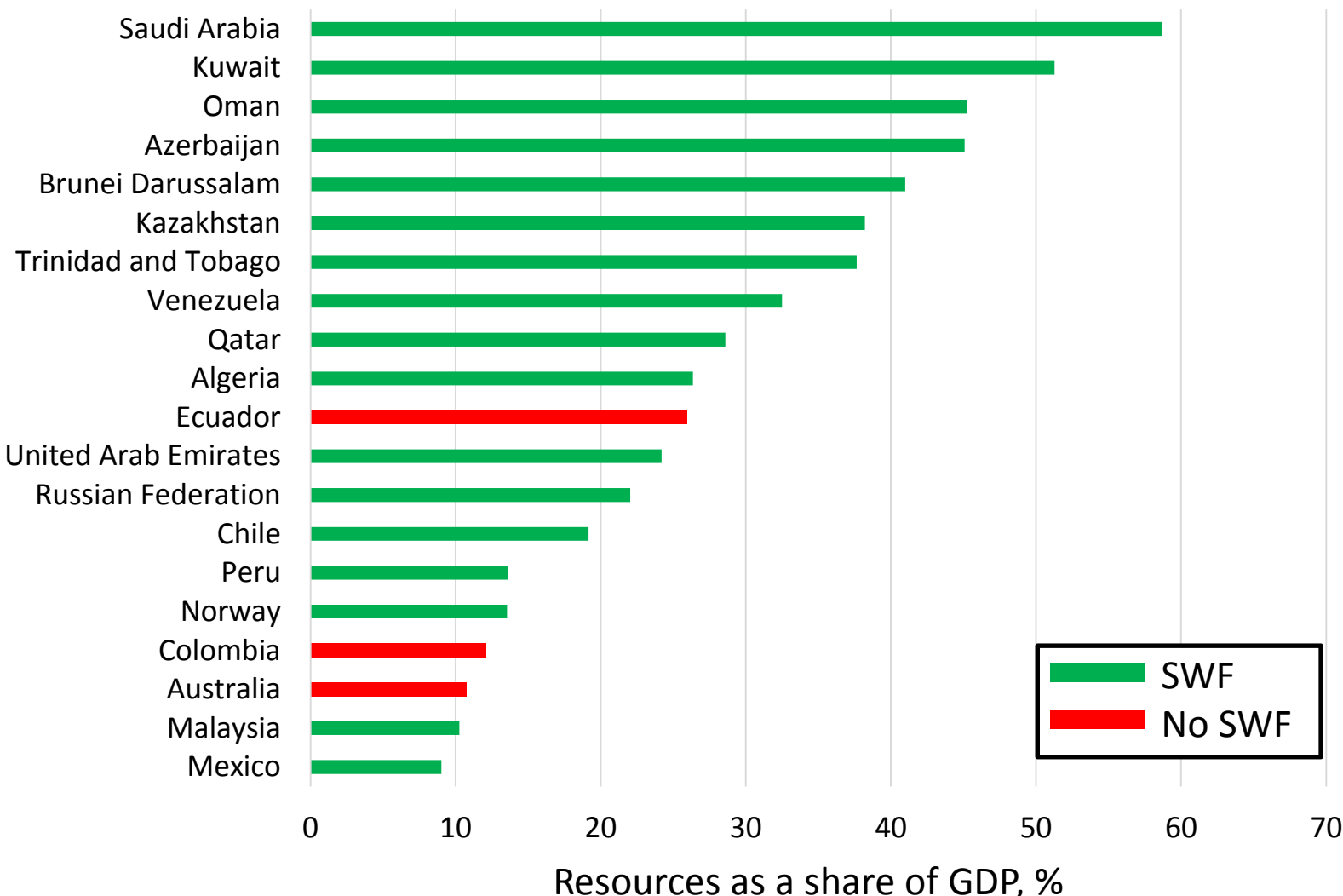
- Tax ↑: Few distortions, reduces incentive to pollute
- Spending ↔

Direct Action

- Tax ↓
- Spending ↑: a double-whammy on the budget

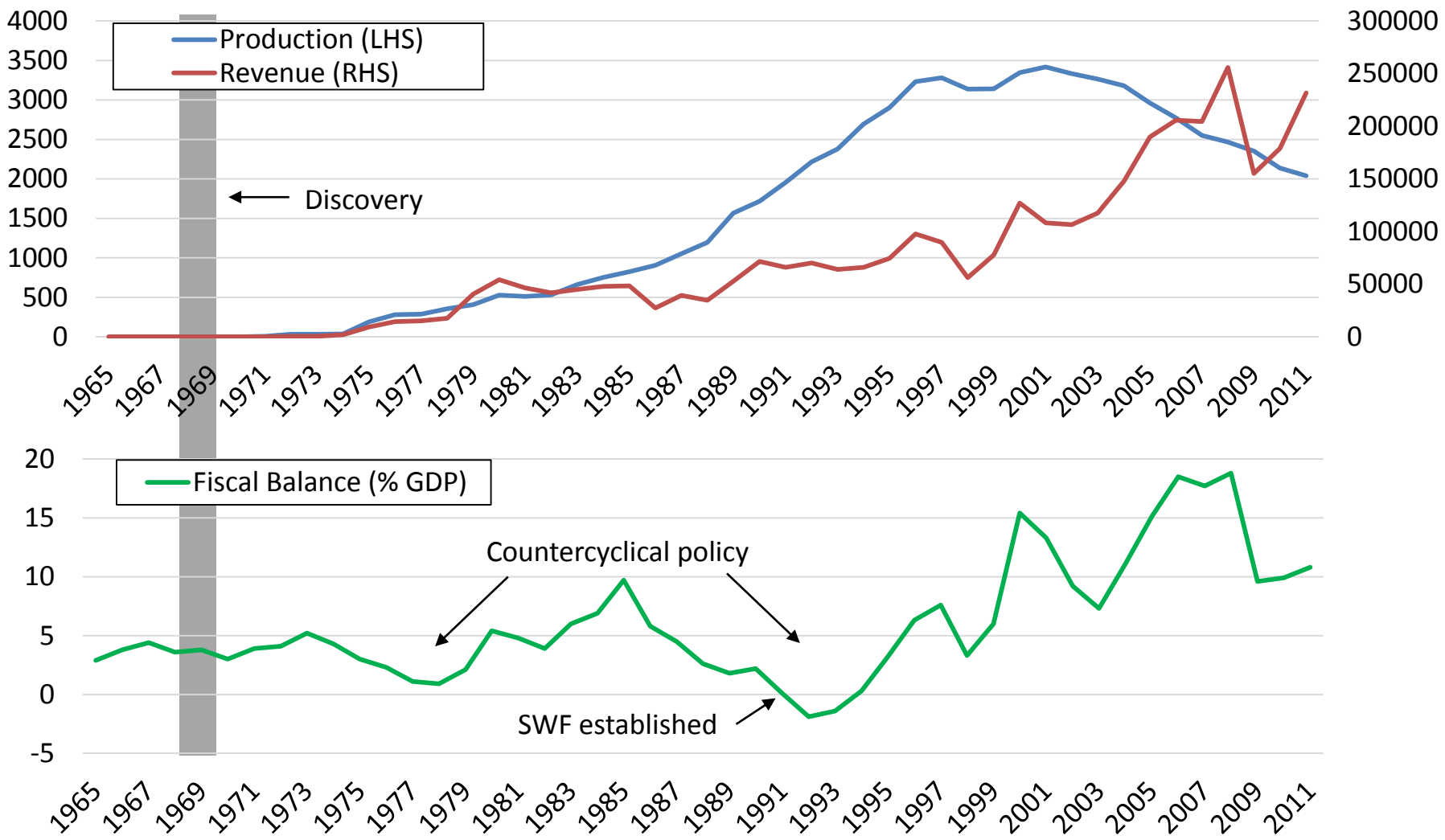
Australia is one of the only resource-rich developed countries without a sovereign wealth fund

Resources as a share of GDP, Top 20 developed countries, %



Norway discovered oil in 1969 but only built support for a SWF after oil prices fell in the late 80s, causing a recession. Will Australia be the same?

Norway's oil production ('000 bpd), revenues (USD, '000 per day) and fiscal balance (% GDP)



Source: BP Statistical review of world energy, 2013, OECD, 2013

How will Australia's mining boom develop in the future?

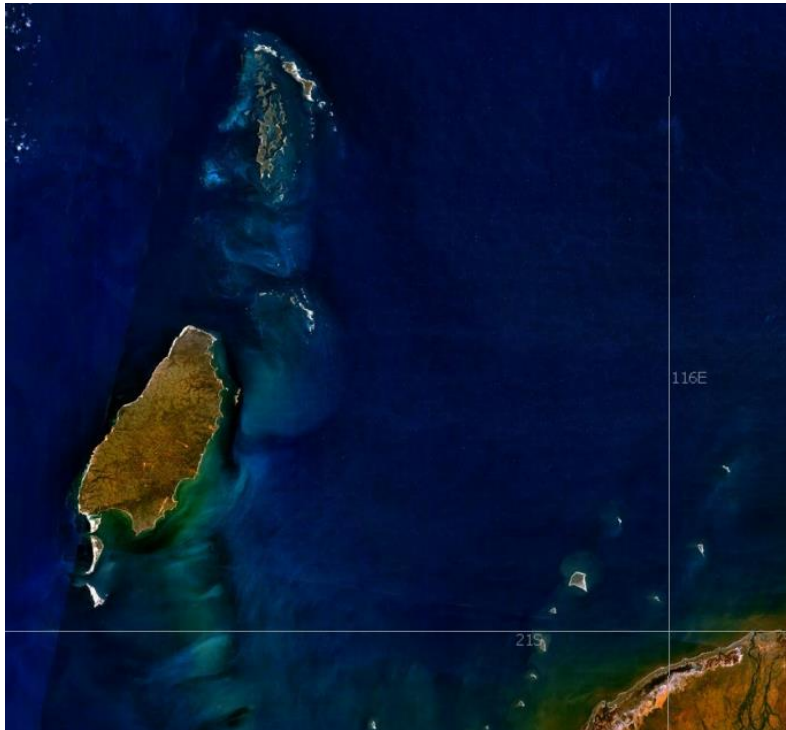
**Economists can't see into the future – don't believe any that say they can.
...but here's an educated guess:**

- Talk that the mining boom is coming to an end
 - Not true
- Will feel like the mining boom is ending:
 - Prices will fall: more supply
 - Investment phase will end
 - Employment in the mines will fall
 - Exchange rate will fall – QE ending abroad
 - Production phase: sending 80% of profits abroad
- In 2-3 years Australia will be better placed to re-introduce a mining tax
 - Lower prices, so immediate impact on miners will be less
 - Less visible role of mining in popular press, etc.

Comments and Questions

The Mining Tax was well designed because it rose and fell with prices and profits, like the PRRT.

Barrow Island would have shut in the 90s under pure royalties. Instead it still produces small amounts of oil today



- *Barrow Island, WA*

BHP and ESSO approached the government to apply the PRRT in 1990, after previously holding out



- *Bass Strait LNG*