

Senate Standing Committee on Economics

ANSWERS TO QUESTIONS ON NOTICE

Resources, Energy and Tourism Portfolio

Supplementary Budget Estimates

19 October 2011

Question: SR41

Topic: Depletion Rates for Mineral Resources

Proof Hansard Page: Written

Senator Brown asked:

Is there an optimal depletion rate for mineral resources? Are there signs this is being exceeded at present in Australia and that our longer-term welfare would be enhanced if the finite mineral resources were extracted at a more measured pace?

Answer:

Australian Economic Demonstrated Reserves (EDR) of mineral resources have in many cases increased dramatically as exploration continues to reveal new ore bodies and higher mineral commodity prices increases move previously sub-economic resources to economic ones.

The optimal rate of extraction for mineral resources is the rate at which supply equals demand, provided that the extraction of the resource is undertaken in a way which maximises national interest through royalties, taxes, employment etc, while being responsive to environmental and social sustainability imperatives.

There is global undersupply in many commodities leading to a sub-optimal outcome not only for the Australian economy but also to those economies to which we supply our resources where growth and poverty alleviation is constrained by a lack of their own resources.

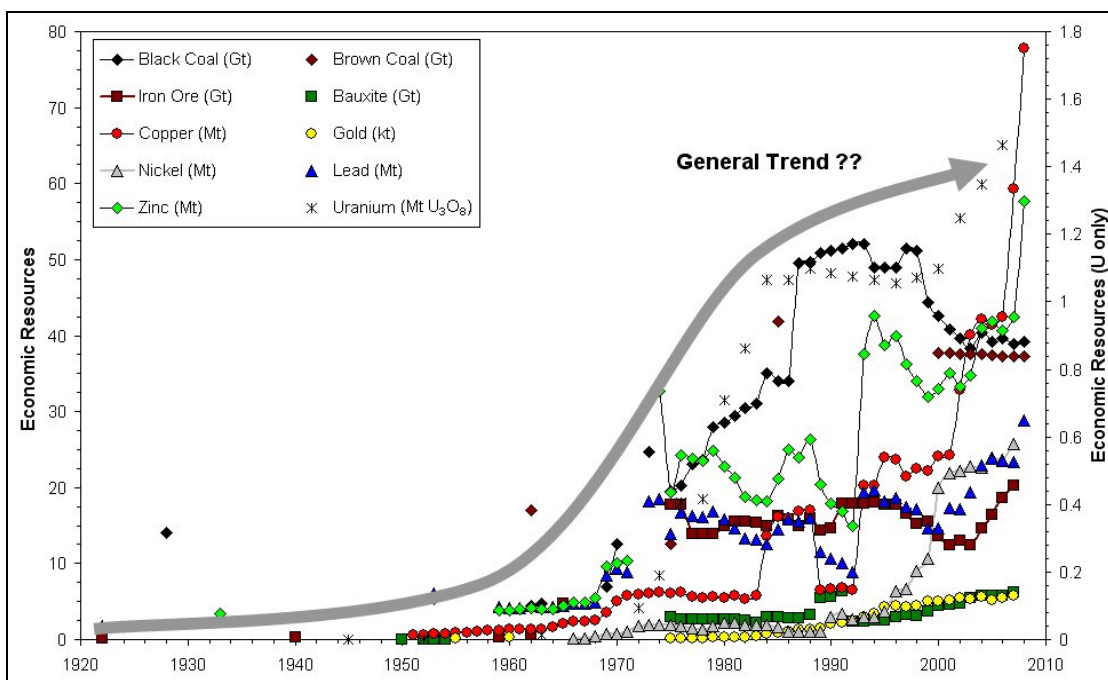
Australia is one of the top five mineral producers and has a large inventory of resources of most of the world's key minerals commodities. According to Bureau of Resources and Energy Economics (BREE), the production of most energy and mineral commodities is expected to grow across most producers in the short term. Therefore if, in the short term, Australia were to reduce production, importers would seek supply from alternative sources and Australia would be exporting economic activity.

Development of emerging economies could continue for a number of decades underpinning growth in minerals and energy consumption. However at some point in the future we may see a slowing in demand growth as these economies develop and become less minerals and energy intensive. At that time, economies such as China and India may start to look more like advanced economies with similar minerals and energy consumption profiles. They are less likely to have the same need to build minerals and energy intensive infrastructure and housing, and so commodity demand growth may ease.

It is also likely, that over time, the energy sector will be transformed with new sources of energy such as renewables increasing their share of energy consumption at the expense of traditional fuel sources such as coal and oil. This may change the economic value of these undeveloped energy resources. This may mean over time coal resources for example could have a lower value than they do today.

While there has been a rapid increase in the annual rate of mining of major mineral commodities since the early 1990s, known resources have increased. This is because of: discoveries of new deposits and delineation of extensions of known deposits; fluctuations in commodity prices and currency exchange rates which can move previously sub-economic resources to economic ones; and advances in mining and metallurgical technologies, emphasising that resource estimates are not finite – they are simply a ‘snap shot in time’ of what is known. Apart from discoveries, advances in mining and metallurgical technologies and advances in transport of minerals, are particularly effective in lowering cost and rendering previously sub-economic resources economic.

In his research report on Australia's Mining Industry, environmental engineer Dr Gavin Mudd from Monash University¹ demonstrates that economic resources have increased over time. Dr Mudd's figure below shows the growth in Australia's economic resources from 1920-2009.



¹ Mudd, G M, 2009, The Sustainability of Mining in Australia : Key Production Trends and Their Environmental Implications for the Future. Research Report No RR5, Department of Civil Engineering, Monash University and Mineral Policy Institute, Revised - April 2009.