

Australian Mining Productivity

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Overview

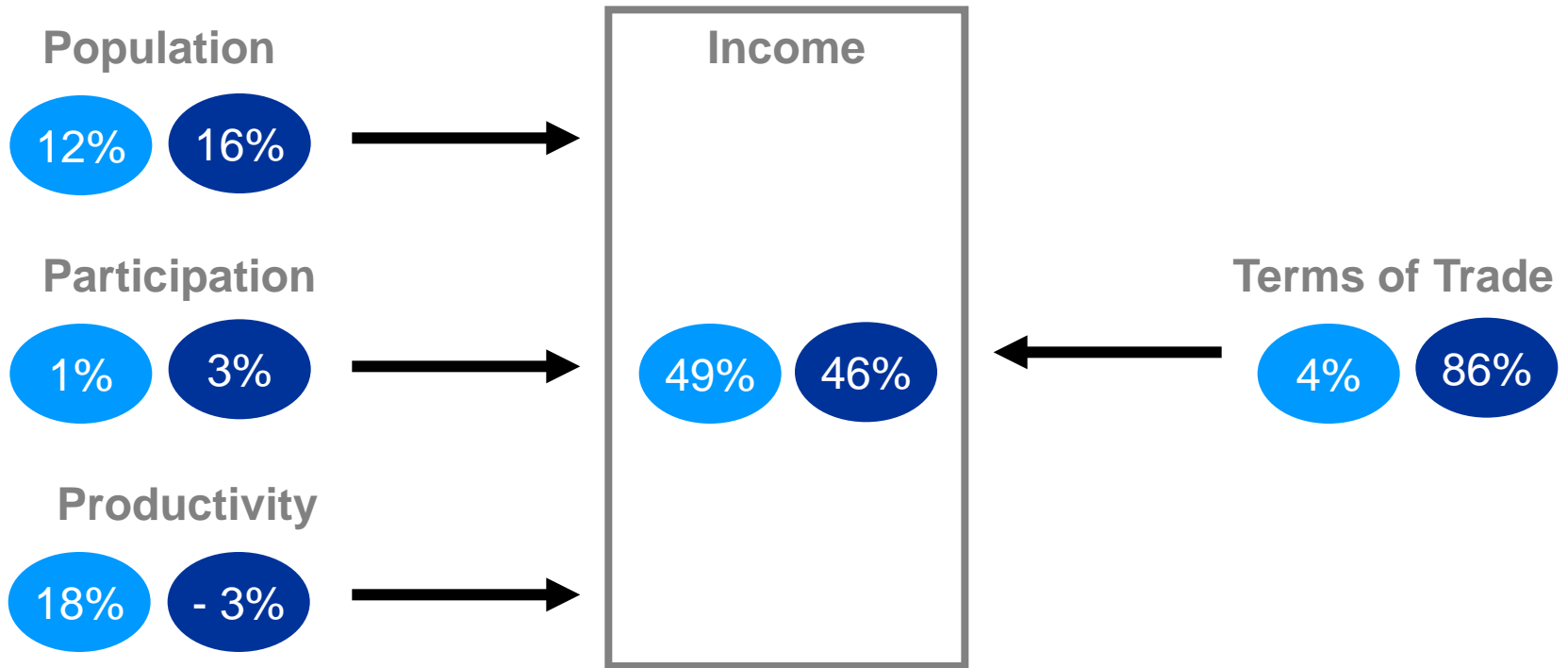
- I. Importance of Productivity
- II. Australian Mining
- III. Mining Productivity Trends
- IV. Measuring Productivity in Australian mining
- V. Insights
- VI. Conclusions

I. Importance of Productivity

“...nothing contributes more than productivity growth to reduction of poverty, to increase in leisure, And to the country’s ability to finance education, public Health, environment and the arts”

Blinder and Baumol (1993)

Three Ps: 1992-2002 and 2002-2012



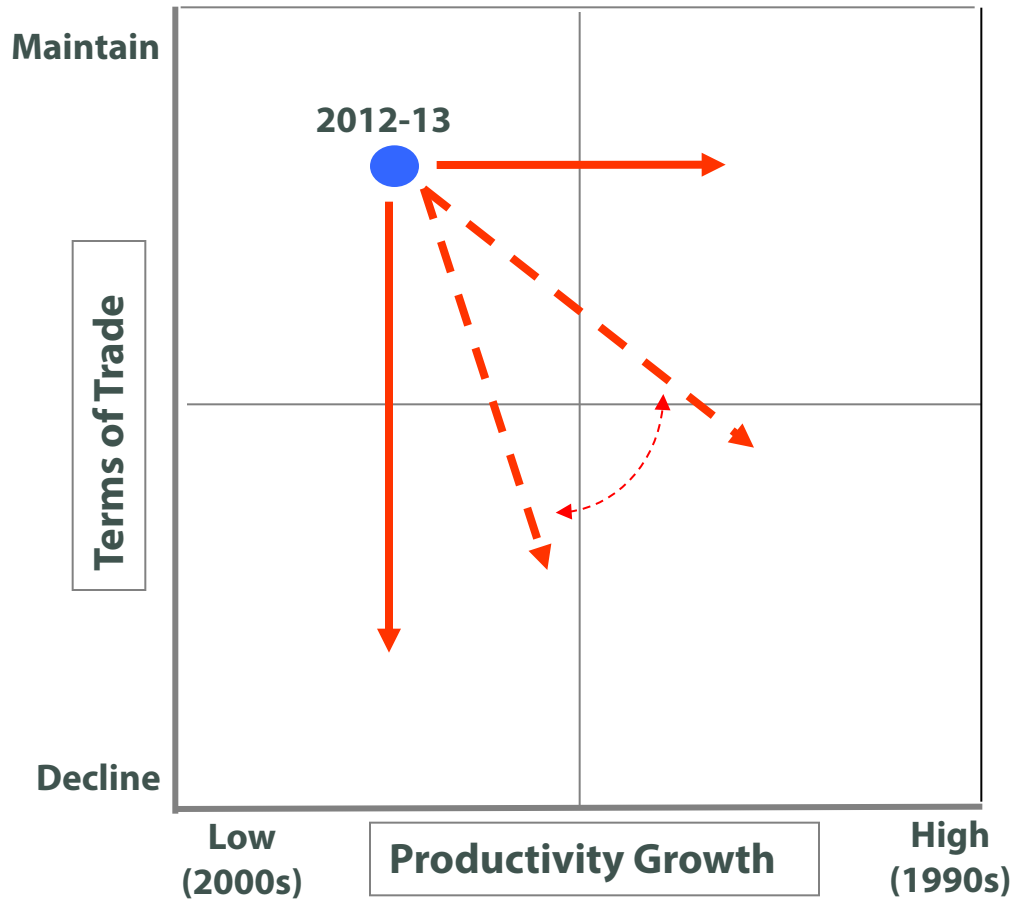
 1992-2002
 2002-2012

Income: Real gross national income: Chain volume measures
Productivity: Multifactor productivity, quality hours adjusted hours worked

Source: BREE; ABS

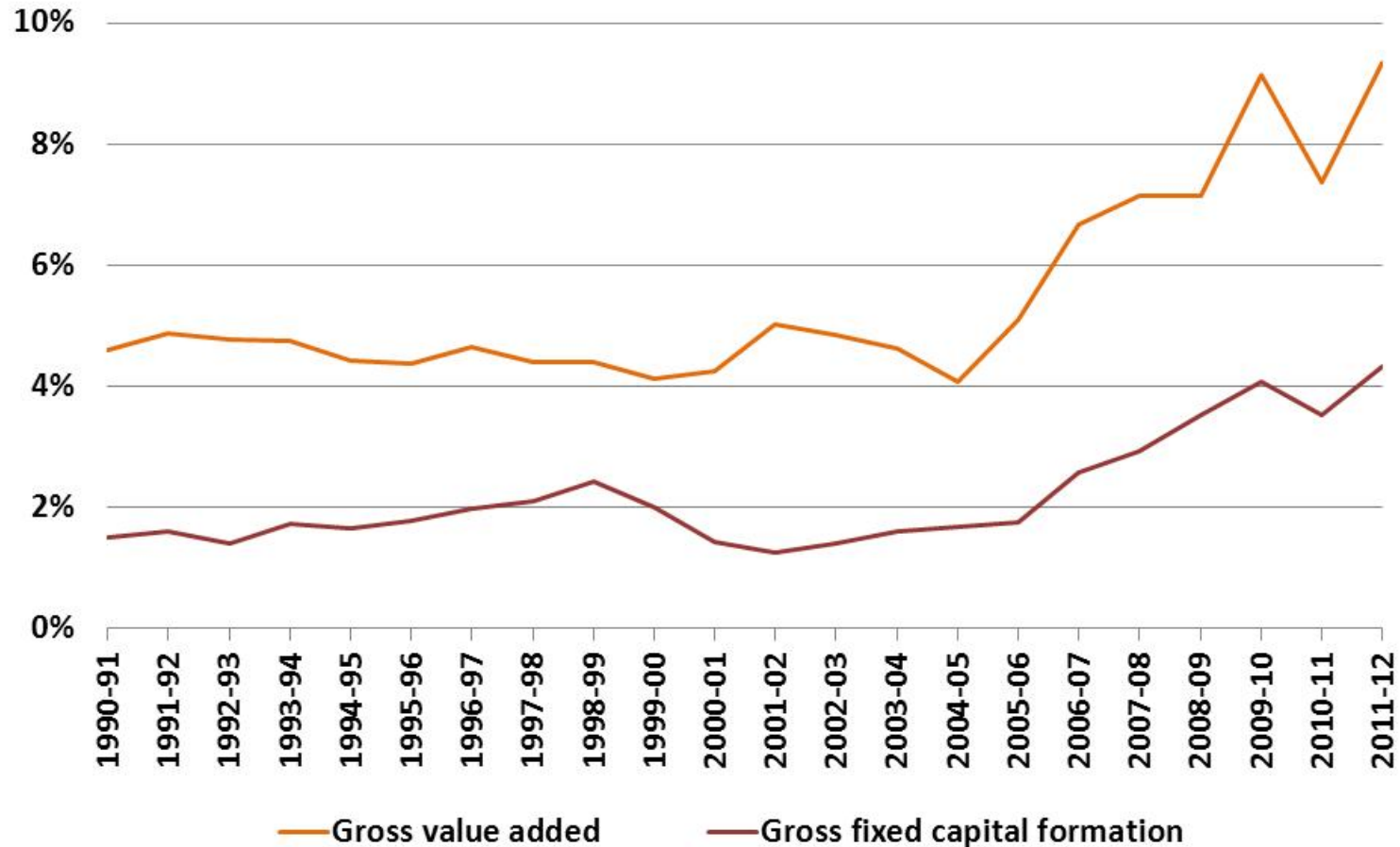
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Where to Australia?



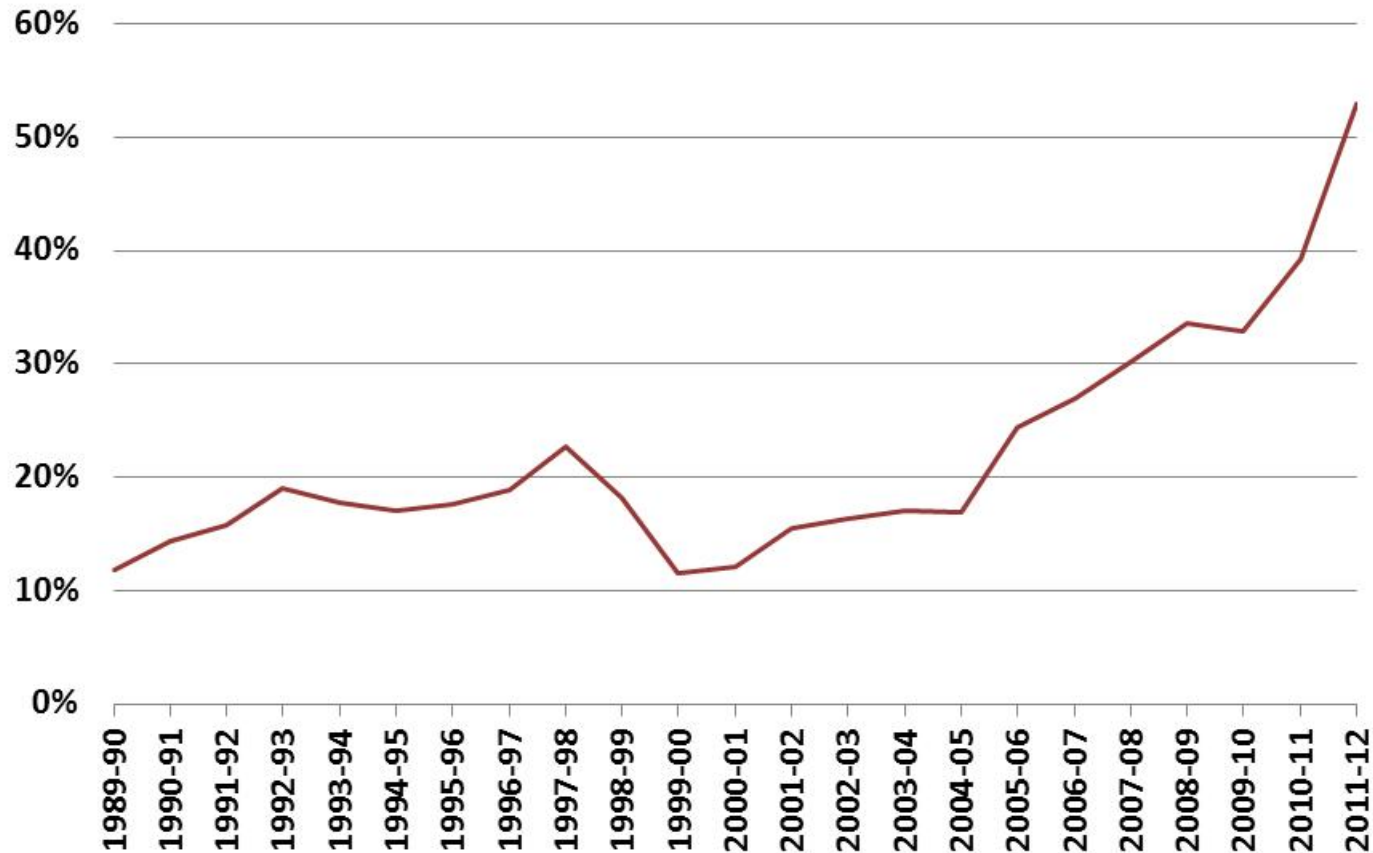
II. Australian Mining

Economic Importance of Mining as % GDP, current prices

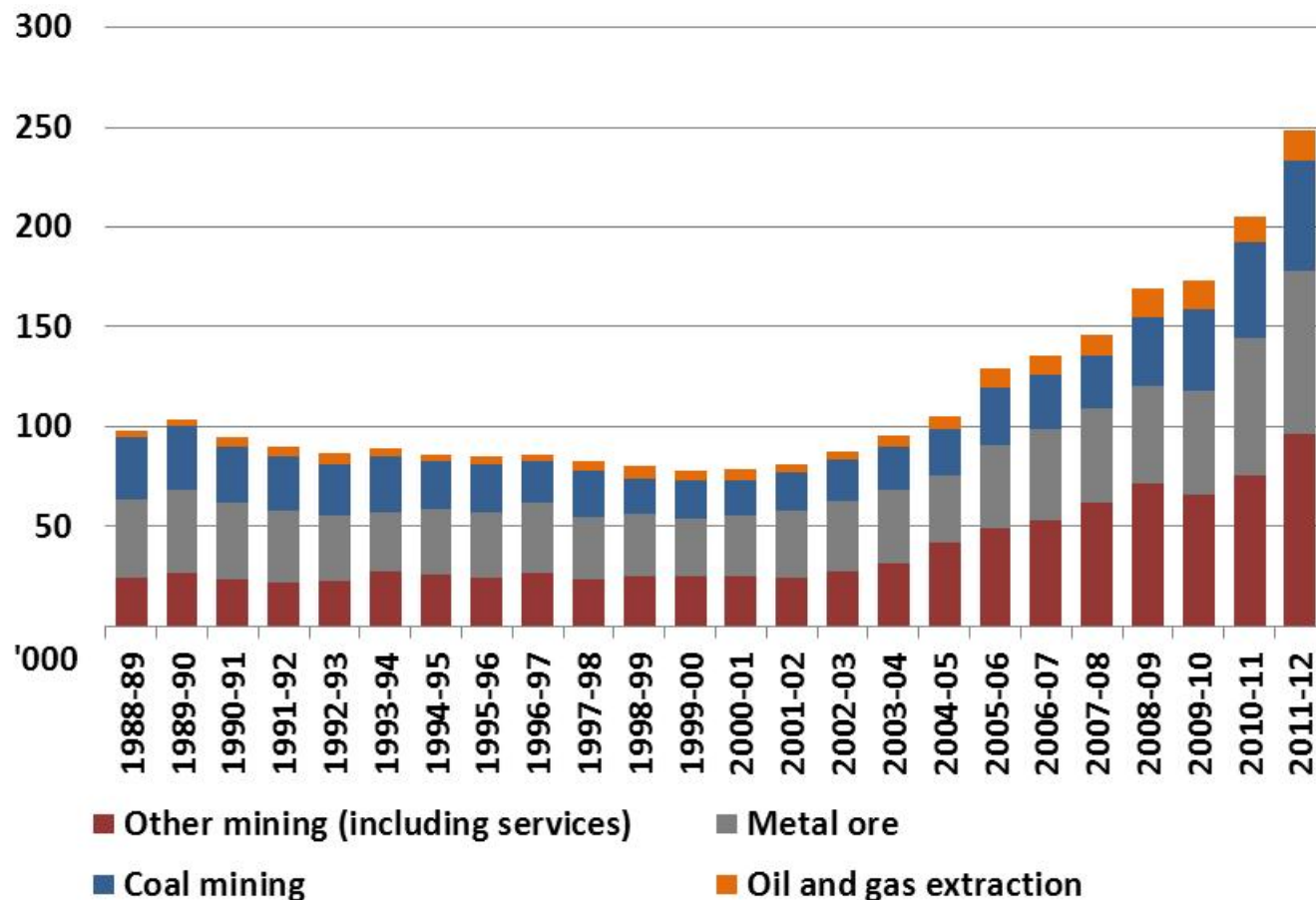


Source: ABS Cat. No. 5204; BREE estimation

Mining's Share of Private CAPEX, 1990-2012



Employment in the Australian mining industry, 1990-91 to 2010-11

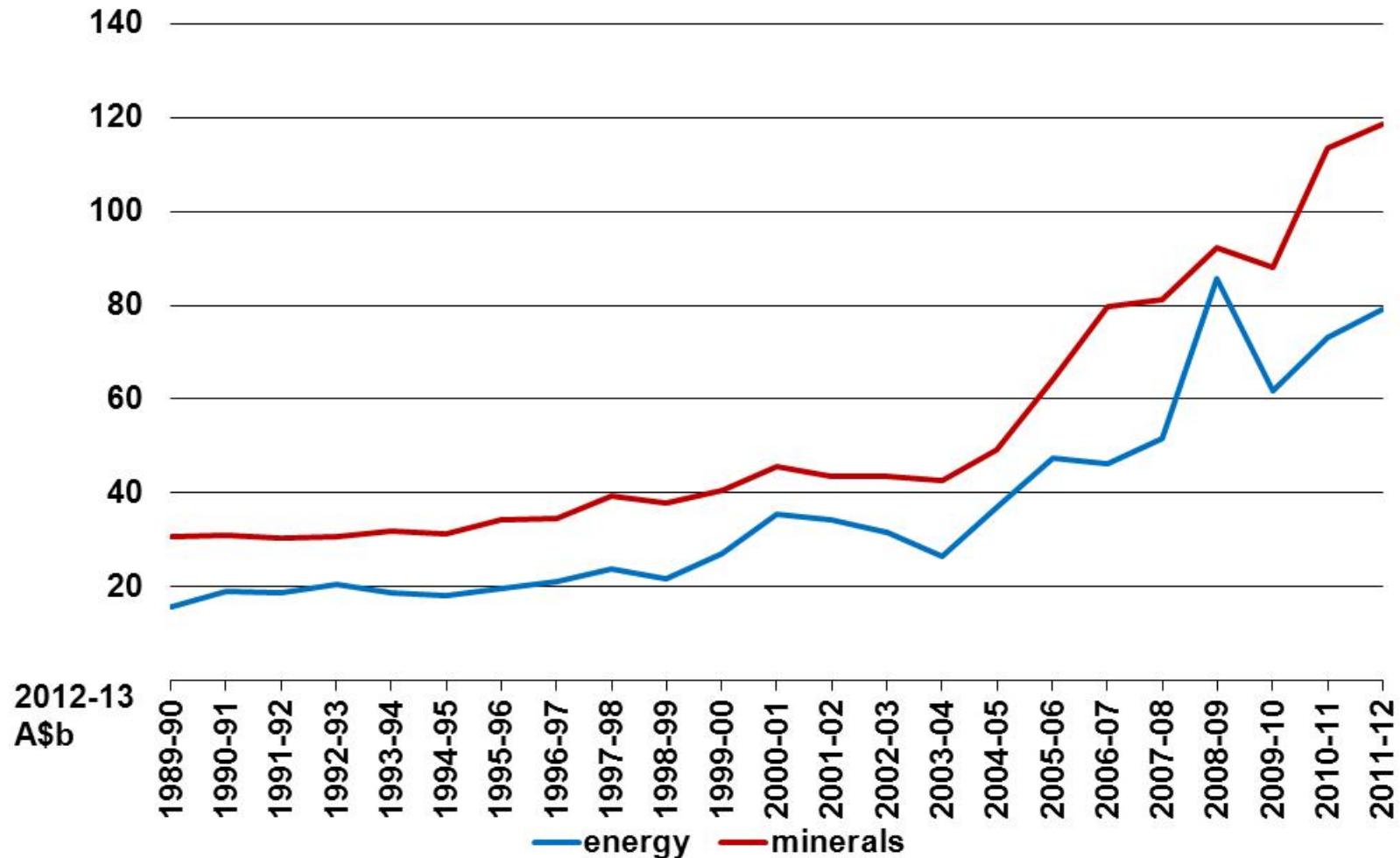


Minerals exports – shares of total export values

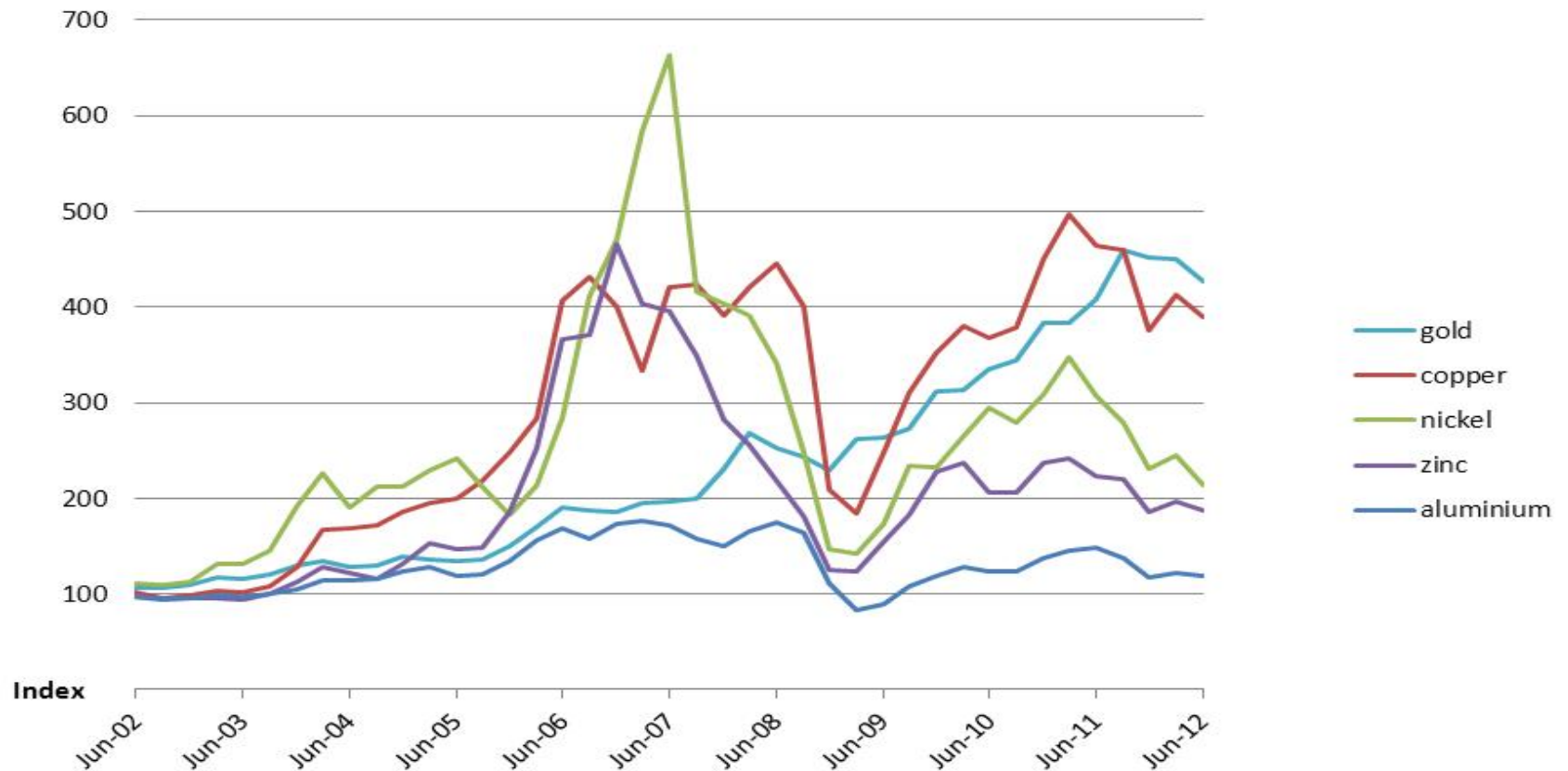
Year	Share of Australian export value (%)
1990	41
2000	35
2010	54
2012	60

Source: BREE, Resources and Energy Statistics, 2012

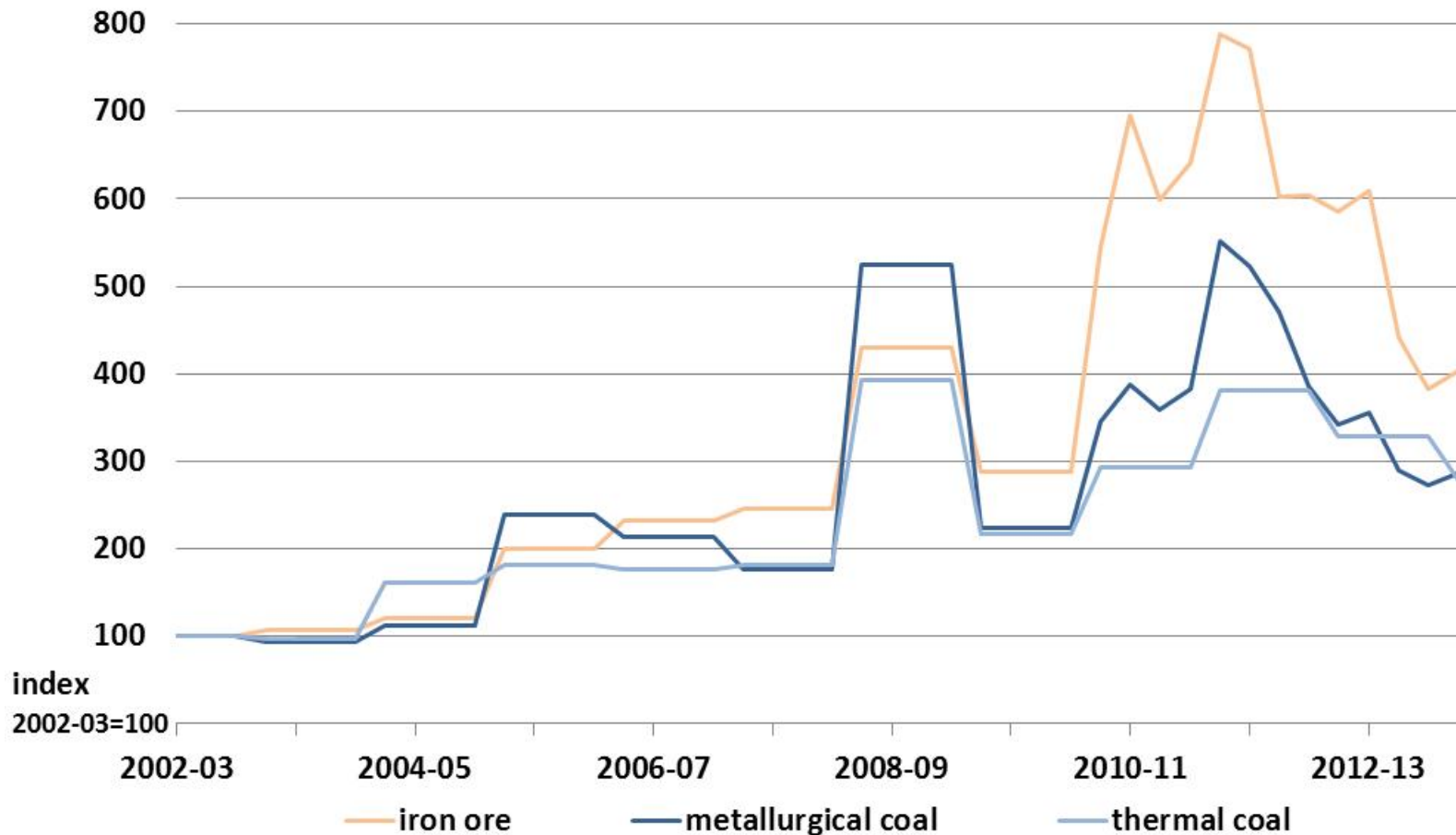
Australian energy and mineral export earnings, 1990-2012



Index of real metal prices, quarterly, 2002 to 2012 (Mar-00=100)

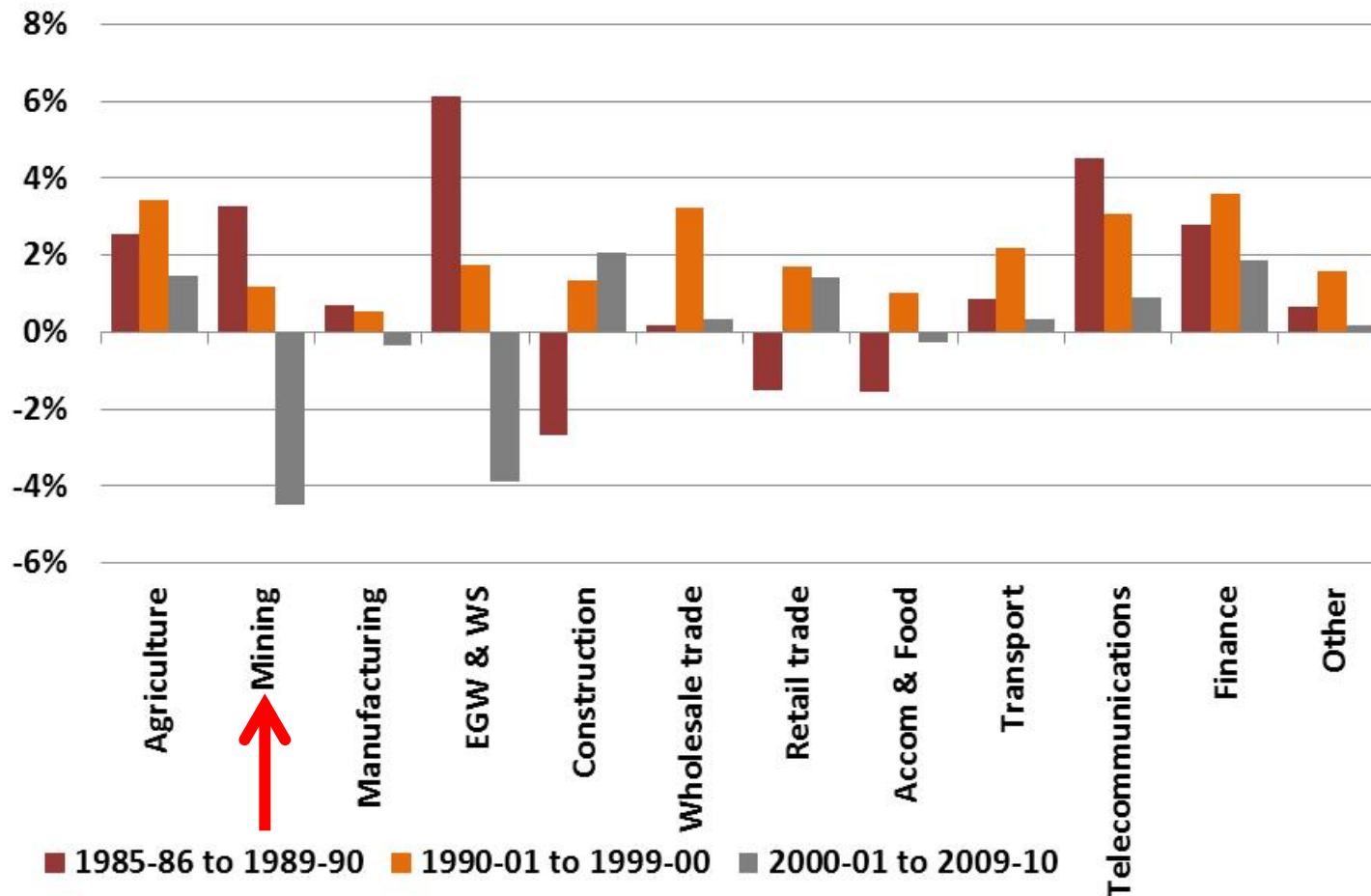


Index of real bulk commodity prices quarterly, 2002 to 2012 (2002-03=100)

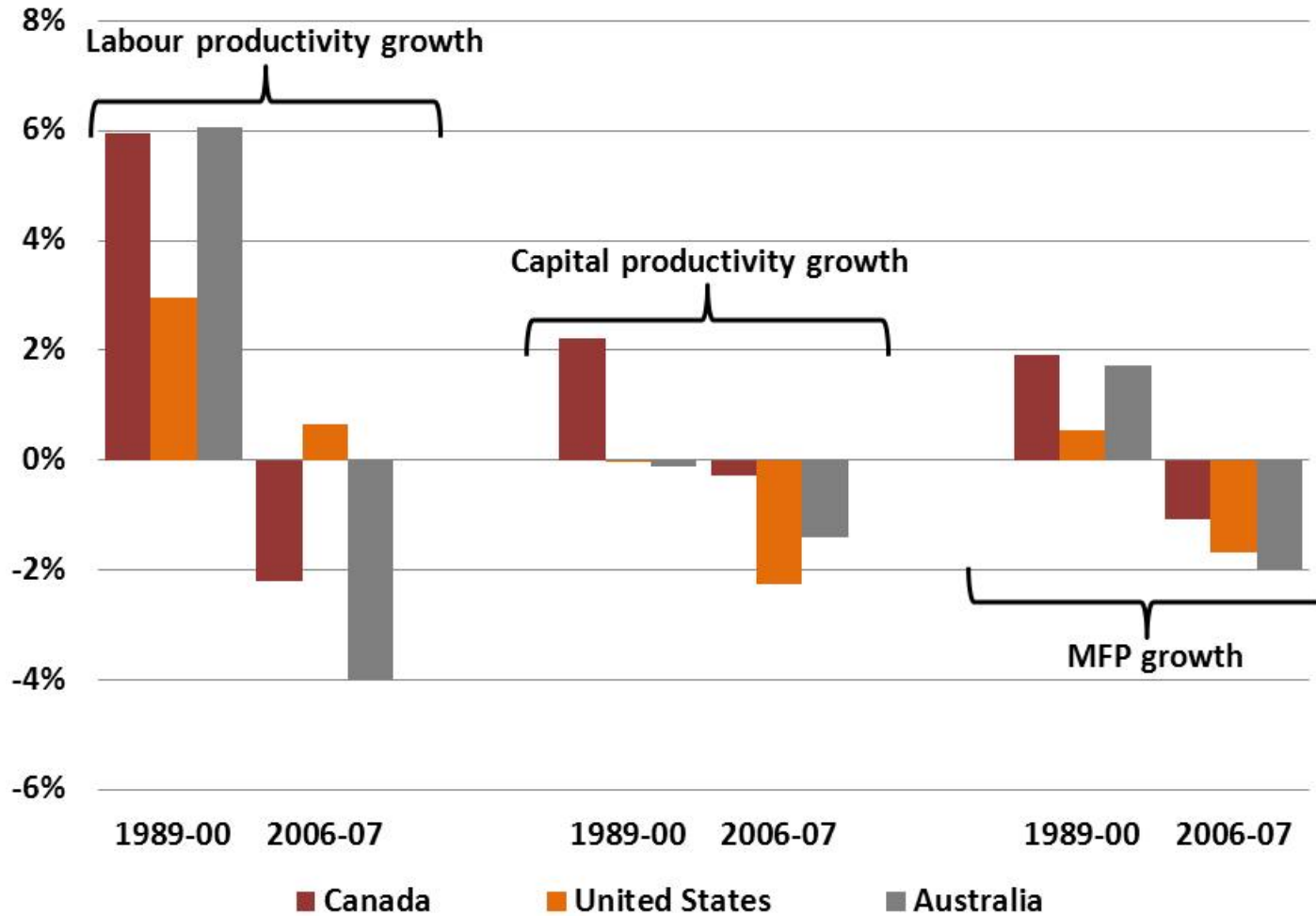


III. Mining Productivity Trends

Multifactor productivity (MFP) growth in Australia, selected sectors, average annual growth rates (%)

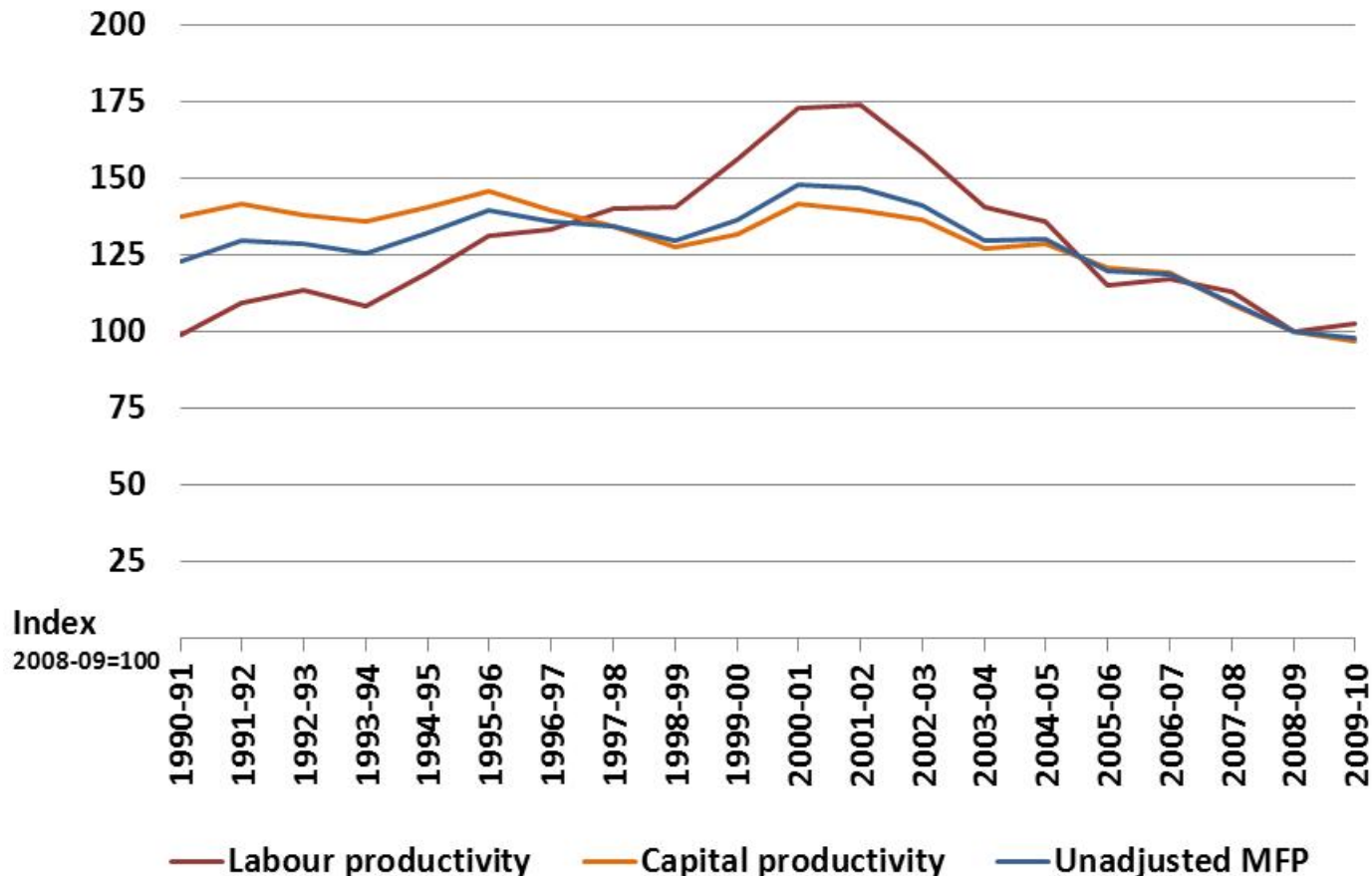


Labour productivity, capital productivity and MFP growth in mining, 1989-90 to 2006-07, average annual growth rates (%)



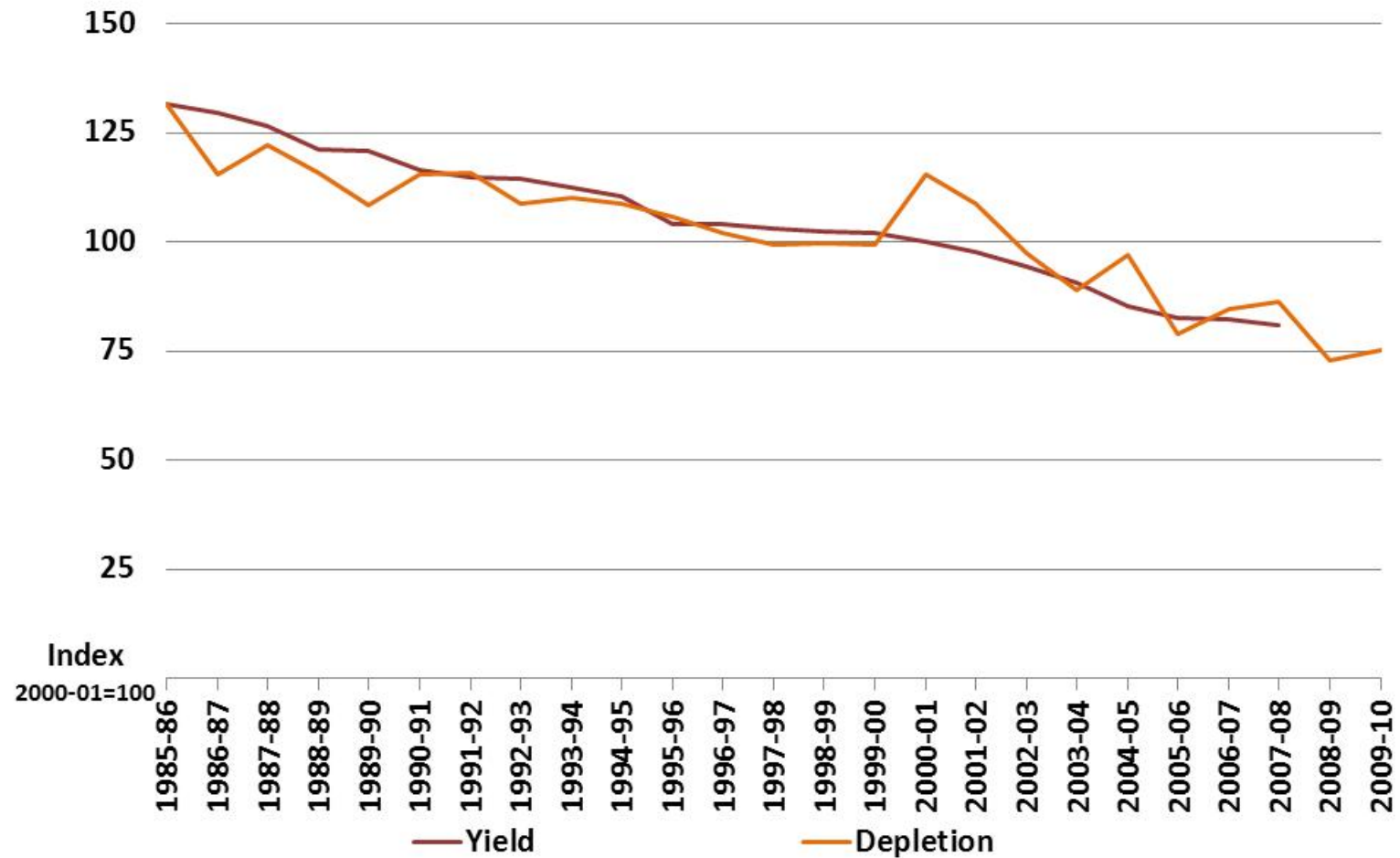
Source: Braley and Sharpe (2009)

Australian labour and capital productivity and unadjusted MFP 1990-91 to 2009-10, (2008-09=100)



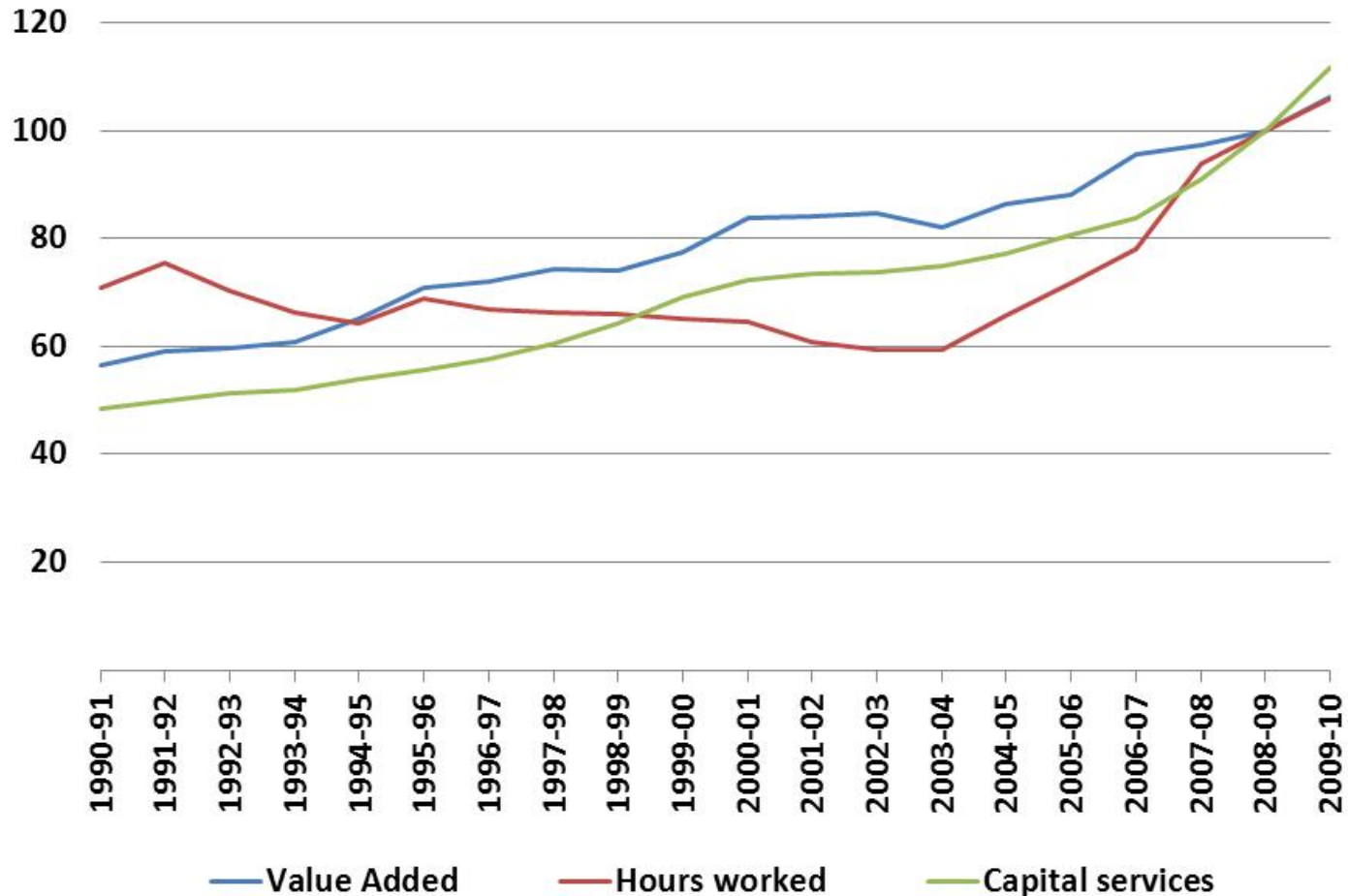
IV. Measuring Mining Productivity

Adjusting for Resource Depletion

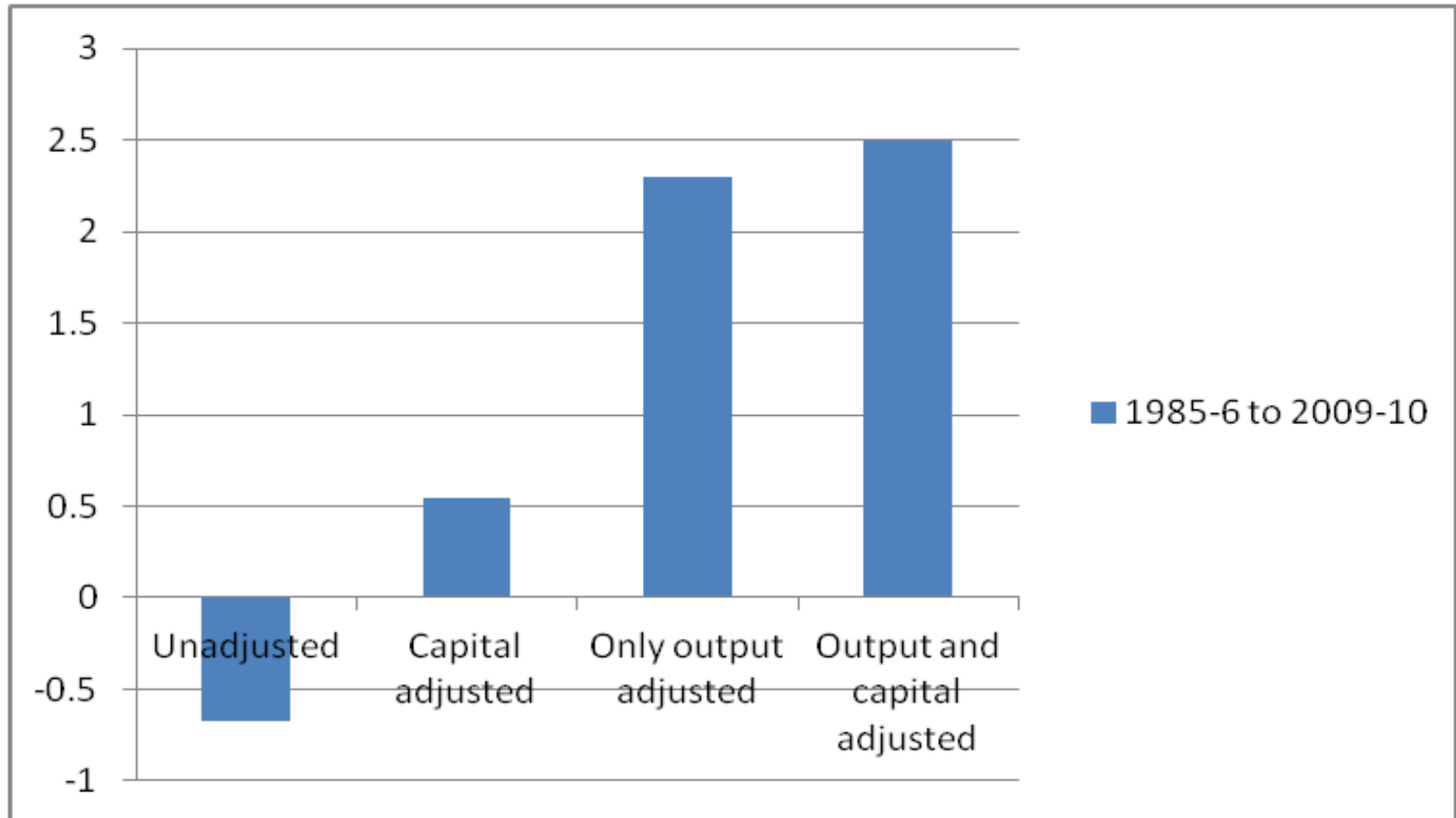


Source: BREE, AES (various years); Topp et al. (2008)

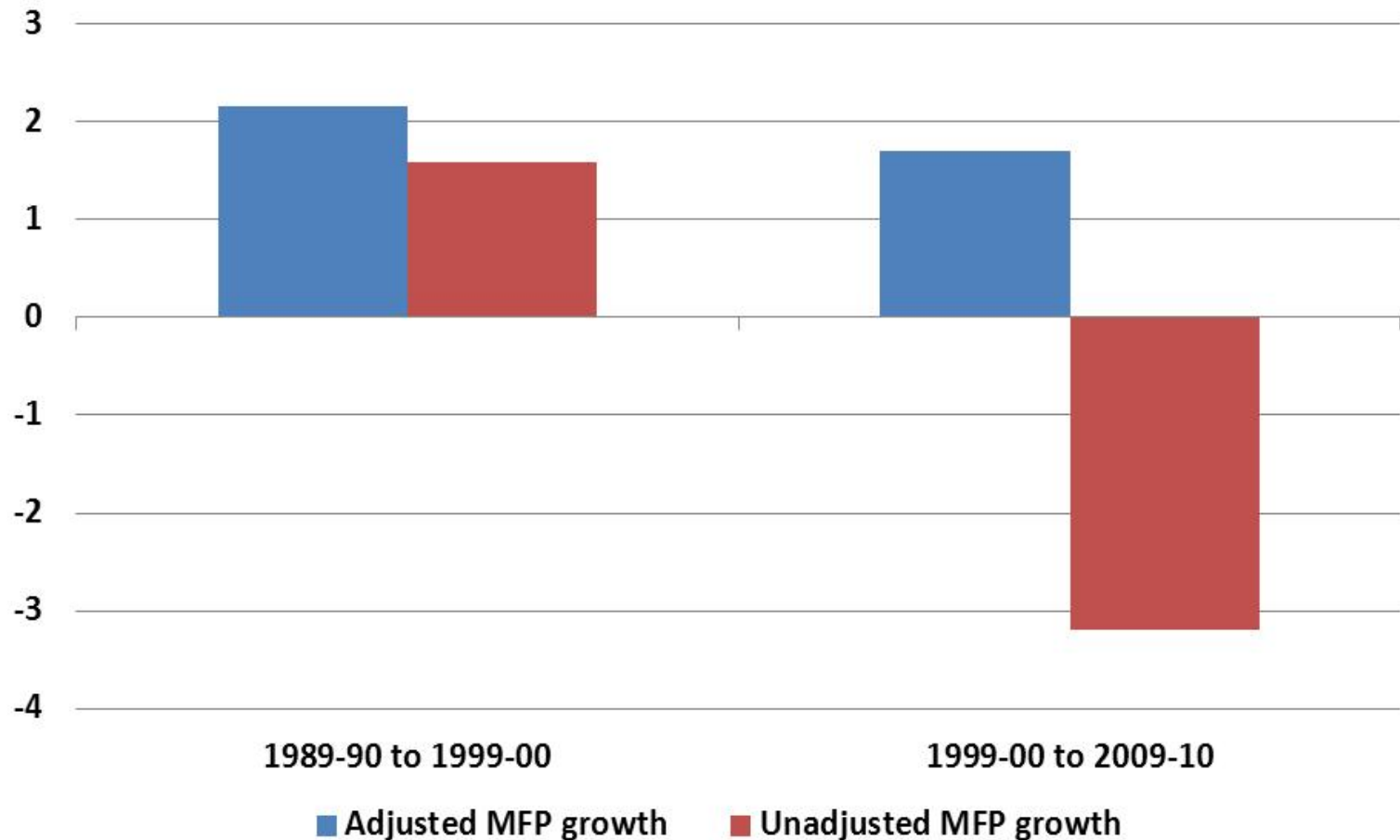
Lags from Input to Output (two years)



MFP growth with adjustments, 1985-86 to 2009-10



Unadjusted and adjusted MFP growth rates 1985-86 to 2009-10



Source: BREE estimates

Decomposition of MFP Growth:

Technical progress (TP), Technical Efficiency (TE), Scale Effects (SC),
1990-91 to 2009-10

	TP (%)	TE (%)	SC (%)	MFP (%)
Australian mining industry	-10.2	82.4	27.8	100

Conclusions

- Since the 1990s there appears to have been a productivity slowdown in most Australian economic sectors. Biggest decline in productivity over the past three decades or so has been in mining which experienced negative rate (-0.65%/year) of *unadjusted* productivity growth.
- After removing the influence of deposit quality depletion and production lags, mining MFP grew at 2.5%/year between 1985-86 and 2009-10, but did slow in 2000s.
- Deteriorating productivity performance in mining appears to be a result of the strength of commodity resource prices and investment decisions by mining companies.

Discussion Paper Available at:

<http://www.bree.gov.au/>

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